thyssenkrupp Marine Systems

Sustainability Brochure 2023/2024

thyssenkrupp

Content

Dear reader,

The world around us is not standing still: the maritime industry is evolving, and the importance of security is growing. Customer requirements are changing, and a new way of thinking is essential. In the financial year 2023/2024, change was constant. We have set the course for the future of our company, overcome various challenges – we know that more are to come.

One of our main challenges now is to turn this change into sustainable growth. Sustainability is one of the most important issues of our time and affects our entire society, which is why it is a high priority at thyssenkrupp Marine Systems. In times of rapidly increasing stakeholder requirements and growing regulatory reporting obligations, we need strong central processes and strategic guidelines to meet our ambitious targets. Along our “Road to Independence”, we have laid the foundation for the future of our company: our ESG strategy provides a robust framework for our environmental, social and economic commitments.

The progress we made last year included developing a more sustainable product portfolio, establishing an external ESG Advisory Council, conducting various social and voluntary activities, and achieving improvements in the environmental sector, such as the reduction in energy consumption.

Sustainability and our commitment to it will undoubtedly challenge our pioneering spirit in the future. However, the journey of a true pioneer is never without challenges.

Please join us on our journey and learn more about our commitment to sustainability. We wish you an insightful experience with our new sustainability report.

Oliver Burkhard
CEO

Paul Glaser
CFO

Dr. Dirk Steinbrink
CTO

Bernd Hartmann
CHRO

Dear reader,

It is my pleasure to present this year's sustainability report. We have sharpened our focus on meeting the requirements of the Corporate Sustainability Reporting Directive (CSRD) and have included more detailed information on our sustainability key performance indicators. As we are an international company, this publication also features expanded data from our sites abroad.

Besides simply fulfilling regulatory requirements, the process of compiling this report has provided us with an opportunity to understand our business even better. We are intensifying and enhancing our initiatives to reach our targets, ensuring that we are well prepared for the future. The best example of taking opportunities and our growth is our readiness to enter the renewable energy market with converter platforms with our new operating unit NXTGEN, proving that business opportunities and sustainability can successfully go hand in hand. We are ready to face the challenge of reducing our climate impact and creating a future worth living for many generations.

I would like to extend my thanks to the dedicated team that has put so much effort into presenting our sustainability journey. I hope you enjoy reading this insightful report.

Dr. Marlene Fischer
Head of ESG

Introduction

1

Highlights in 2024

FOUNDING AND FIRST MEETING OF **ESG ADVISORY COUNCIL**

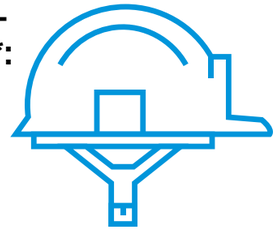
ACTIVITY CHALLENGE:
WE WALKED
81,064,777
STEPS TOGETHER!

More than
50,000
hours of personal development
trainings for employees

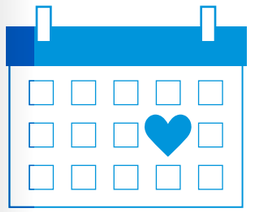
FIRST SCOPE 3 CALCULATION AT ATLAS ELEKTRONIK

MANDATORY INFORMATION SECURITY MANAGEMENT SYSTEM (ISMS) TRAINING COMPLETED BY ALL EMPLOYEES

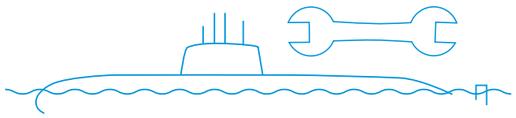
ACCIDENT FREQUENCY RATE*:
2.6
(TARGET: 3.5)



DONATION FOR SOCIAL PURPOSES
> 40,000 €



FIRST SOCIAL DAYS**
FOR APPRENTICES



APPRENTICES HELPED TO MAINTAIN MUSEUM **SUBMARINE U995** (AT LABOE NAVAL MEMORIAL)

COLON CANCER SCREENING OF
1,708
EMPLOYEES

* i.e., accidents with at least one lost working day per 1,000,000 working hours completed
** paid days off for social engagement

General Disclosures

2

Environment, Social and Governance (ESG) are deeply anchored in thyssenkrupp Marine Systems' strategy to become an outstanding maritime powerhouse. After three years of dedicated work, the "Fitting for the future" phase focuses on strengthening measures to achieve set targets. The upcoming targets are shown in figure 2.1. With the European Sustainability Reporting Standards (ESRS) becoming effective, a set of key performance indicators (KPIs) has been established to continuously track progress. A key goal of the sustainability strategy is to ensure reporting is conducted with the highest level of transparency and clarity. This report provides details on progress made, success stories, and plans to improve and close gaps.

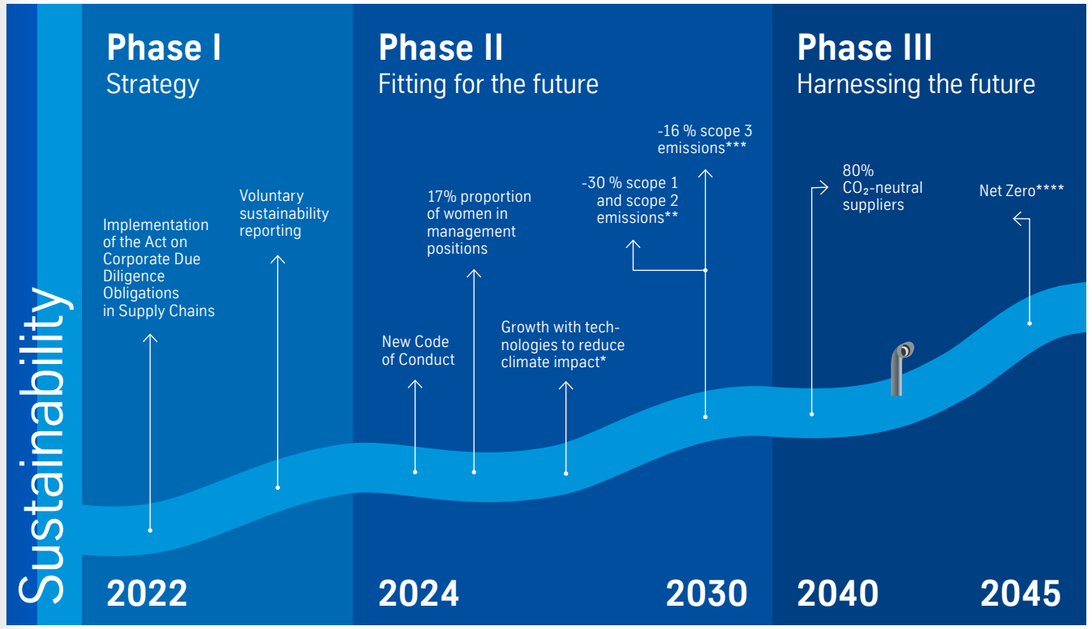


Figure 2.1: * technologies that promote environmental objectives according to the European Union's Taxonomy Regulation 2020/852 | ** scope 1, 2 = direct emissions from own plants and indirect emissions from electricity consumption | *** scope 3 = upstream and downstream value chain activities | **** definition according to Net-Zero Standard from Science Based Targets initiative

"The year 2024 lead us from strategy to more focussed action on set targets. Success stories come along with plans to improve and close gaps."

Head of ESG

The table below shows the connection between the company's commitments and the ESRS materiality issues.

Company's Commitments	Material Topics	ESRS Reference
Expanding business operations with sustainable technologies to reduce climate impact	• Technology & innovation • Marine ecosystem • Climate change & GHG emissions	ESRS E1 ESRS E2 ESRS E3 ESRS E4 ESRS E5
Transparent and comprehensible sustainability strategy and actions	• Business ethics & integrity • Risk management & business continuity	ESRS 2 ESRS G1
Active promotion of climate and environmental protection	• Sustainable & responsible supply chain • Material sourcing & resources efficiency • Climate change & GHG emissions • Marine ecosystem • Waste management & recycling	ESRS E1 ESRS E2 ESRS E3 ESRS E4 ESRS E5
Long-term and secure employment	• Diversity, inclusion & equality • Health & safety in the workplace and workers' rights • Involvement & upskilling of employees	ESRS S1 ESRS S3
Fair working conditions in system of suppliers, partners and customers	• Business ethics & integrity • Sustainable & responsible supply chain	ESRS S2 ESRS S4
Corporate policy and governance compliant with the highest ethical standards	• Business ethics & integrity • Sustainable & responsible supply chain • Risk management & business continuity	ESRS 2 ESRS G1

Table 2.1: Company's commitments and ESRS materiality issues

This sustainability statement has been prepared by the ESG department in accordance with the ESRS, published on 22 December 2023. The report covers the Business Unit thyssenkrupp Marine Systems as described in the following chapter, including information on material subsidiaries. The company's financial statement is published on a consolidated basis with the parent company thyssenkrupp AG. The scope of value chain information is explained in conjunction with relevant data points, material impacts, risks and opportunities. No options for omitting information aligned with ESRS BP-1 article 5(d) and (e) have been used.

The Group's Profile and Business Model

thyssenkrupp Marine Systems is one of the world's leading maritime powerhouses, active as a systems supplier for submarines, naval vessels, maritime electronics, and security technologies. With over 8,000 employees worldwide, over 3,500 are based in Kiel, making it one of the largest shipyards in Germany. With over 185 years of history and a constant drive for improvement, the company is setting new standards in marine technology. thyssenkrupp Marine Systems offers tailored solutions for highly complex challenges to customers worldwide. The driving forces behind this innovative energy are the employees, who shape the future of the company with passion and commitment.

Customers and competitors around the world are adapting their strategies and product portfolios to address evolving security threats. There is increasing demand for rapidly available system solutions, uncrewed or modular platforms and state-of-the-art technologies. The German Navy has set out its future requirements with the "2035+ target picture". These changes make it clear in which direction the maritime domain is moving: with a focus on uncrewed platforms, connectivity, combat cloud, multi-domain operations, and artificial intelligence. The future battlefield and with it the capability requirements of our customers are beginning to take shape. Integrated system solutions are increasingly becoming the norm.

Figure 2.2: Overview Business Unit Marine Systems

These global shifts are further intensifying already fierce competition. Established national players are defining global ambitions, while new "defence AI" start-ups are disrupting the existing structure with innovative, digital and software-based solutions. For the German marine industry, including thyssenkrupp Marine Systems, which has faced an uneven playing field for years against international competitors, these developments present a considerable challenge.

thyssenkrupp Marine Systems is ready to embrace this challenge. In times of change, the goal is not just to adapt but to lead. The company aims to be the international benchmark in the industry, not just in the middle of the pack. This ambition is driving the ongoing Strategy 2033 efforts to realise the full potential best and address the multi-layered and complex challenges of our time.

As part of thyssenkrupp AG, the Business Unit Marine Systems operated under two major brands in FY 2023/2024: thyssenkrupp Marine Systems and ATLAS ELEKTRONIK. Both brands will merge by the beginning of 2025 as part of the Road to Independence.

The company operates in fifteen countries worldwide, see figure 2.3. Each location is highly specialised in providing technical expertise across the vast field of naval technology and shipbuilding.

"With our locations all over the world, we are one of the world's leading maritime powerhouses."

CEO

Locations

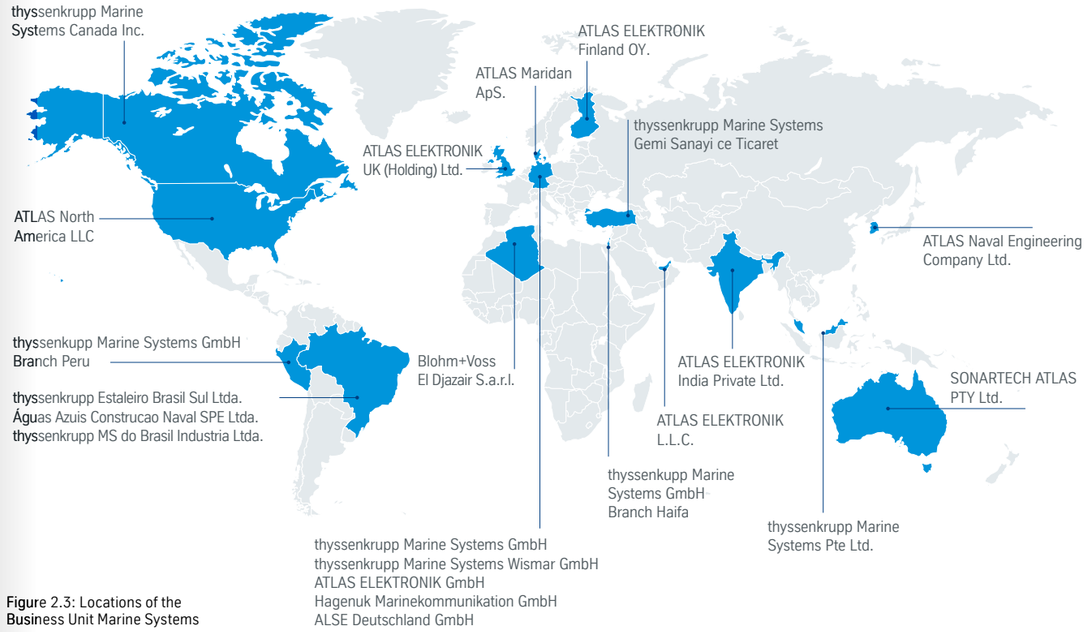


Figure 2.3: Locations of the Business Unit Marine Systems

Organizational Structure

The management body of thyssenkrupp Marine Systems is divided into the four areas 'Executive', 'Financial', 'Operating', and 'Human Resources', each of which is represented by its respective Chief Officer. All members of the executive board are male. As highest internal governance body, each member is accountable for sustainability and incorporates dedicated expertise in the fields of sustainability. The Chairman of the executive board bears overall responsibility. Board committees are an important instrument to exercise oversight of the process to manage impacts, risks and opportunities on material matters as well as educating the board on sustainability issues and align the corporate commitments. Figure 2.4 shows the expertise of each executive manager. Non-executive members are not active in the current executive board.

The supervisory board of thyssenkrupp Marine Systems is represented by sixteen non-executive members, divided into employer side and employee side by 50%. Since 2022, a quota of 30% women must be achieved according to the Act on the Equal Participation of Women and Men in Leadership Positions in the private and the public sector. Currently four women and eight men are active in the supervisory board. All members of the supervisory board have access to regular trainings, e.g. from the German Corporate Governance Code (DCGK), to gain expertise and skills on business relevant matters. Furthermore, the members incorporate many years of experience in the sector owning roles, e.g. in the field of corporate finance, auditing, compliance, executive management and their participation in works councils.

CEO
Oliver Burkhard
ESG Strategy, Good Governance, Human Rights

CHRO
Bernd Hartmann
Social Engagement, People, Health & Safety, Diversity & Inclusion

CFO
Paul Glaser
Risk Management, Sustainable Financial Investments, Sustainable Procurement

CTO
Dr. Dirk Steinbrink
Eco-Design, Sustainable Innovation & Technology, Sustainable Production

Matrix of directors' expertise

- International experience
- Banking and finance
- Digital technology
- Corporate social responsibility
- Research and development
- Public affairs
- Human resources

Figure 2.4: Board members and their expertise and responsibilities in relation to ESG

The company works within a matrix organisation, where cross-company tasks and responsibilities have been centralised for the business unit as shown in figure 2.5. The business areas, the so-called operating units, incorporate the specific functions required for the dedicated economic activities. The core business of the company is being divided into the following four sectors:

		CEO	CFO	CTO	CHRO
Cross-company functions		e.g. Strategy	e.g. Procurement and Supply Chain Management		e.g. Occupational Safety & Health
Not cross-company functions				e.g. Quality Management	
Operating Units	SUB	Head of OU Submarines	Commercial Head of OU SUB		
	SVE	Head of OU Surface Vessels	Commercial Head of OU SVE		
	NXTGEN	Head of OU NXTGEN	Commercial Head of OU NXTGEN		
	NES	CEO OU Naval Electronic Systems	CFO OU NES		

Figure 2.5: Structure of the core business of the Business Unit Marine Systems

Operating Unit Submarines

bears overall responsibility for the realisation and (further) development of submarine products including product architecture and platforms. This covers the responsibility for economic values like cost-effectiveness, pricing and profit making.

Operating Unit Surface Vessels

is accountable for the realisation and (further) development of surface vessels including product architecture and platforms, and, like in the OU Submarines, all economic matters.

Operating Unit NXTGEN

is a central innovation greenhouse and with it, civilian opportunities are pursued. The same requirements of financial targets and economic success apply to the pursuit of civilian opportunities as for all other operating units. In the areas of maritime security, UxV surveying, explosive ordnance disposal and special shipbuilding and platform construction, a wide range of technologically advanced products and services will be offered to the customers. Innovative products and services will contribute to ensuring the protection of critical maritime infrastructure and to shaping the German energy transition.

Operating Unit Naval Electronic Systems

As a business area, Naval Electronic Systems – ATLAS ELEKTRONIK and its subsidiaries – form part of the business unit. ATLAS ELEKTRONIK has a wide range of sonars and sensors, command and control systems for submarines and surface vessels, mine countermeasures systems, uncrewed water vehicles, radio and communications equipment, naval weapons, and coastal protection. In addition, ATLAS ELEKTRONIK continues to offer variety of services even after the delivery of its products.

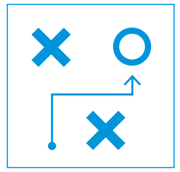
The operating units are the core of the business. They are responsible for customer satisfaction and shaping the future of the products.

Integrated Risk Management and Business Continuity

In times of major structural and global changes, enhanced risk management is essential to build resilience for future disruptions and sustain business continuity. Revisiting the company's strategy, collaborating with governments, assessing risk-sharing partnerships, and innovating beyond core activities are cornerstones of effective risk management.

Material impacts, risks and opportunities, and their interaction with strategy and the business model, are identified through an extensive materiality assessment (see chapter Materiality Assessment). ESG risk management is designed to achieve the following:

ESG Risk Management Targets



Strategy

Keep high-level strategic objectives aligned with risk taking

Operations

Safeguard the effectiveness, safety and efficiency of operations and resource allocation, in line with performance and financial targets

Reporting

Ensure reliable financial and non-financial reporting in compliance with the CSRD and ESRS

Compliance

Comply with applicable laws and regulations and strengthen export compliance

Figure 2.6

Dealing with Risks and Opportunities

Addressing risks and opportunities requires more than isolated actions. thyssenkrupp Marine Systems has established a dedicated risk management department to:

- Coordinate risk governance
- Establish the framework for measuring all related risks
- Design an integrated risk monitoring process
- Operate mechanisms for identifying main risks, including ESG-related risks
- Coordinate the integrated response to these risks, with support from appropriate bodies across the company

This uniform process enables the identification of relevant opportunities and risks at an early stage, analysing, evaluating, aggregating, and communicating them systematically to decision-makers. An audit-proof IT solution supports the process and ensures that effective measures are taken. Reporting at various management levels improves transparency.

With the regular systematic analysis and managing opportunities and risks, compliance with German regulatory duties under the Companies Act and the Commercial Code is maintained, providing a comprehensive management tool focused on maintaining and enhancing company values.

The increasing relevance of ESG-related topics for business continuity makes a structured risk and opportunity management a necessity.

Operational Risk Management

The successful execution of customer programmes – on time, within budget and maintaining quality standards – carries significant risks, such as sourcing skilled workers or appropriate materials. A continuous process to mitigate these risks involves:

- Assigning roles and responsibilities for risk management
- Defining transparent risk criteria (e.g. probability, consequences, risk acceptance) and measures for addressing risks and opportunities
- Identifying, assessing, communicating and analysing risks throughout product realisation
- Determining, implementing and monitoring measures to mitigate risks that exceed defined risk acceptance criteria
- Accepting residual risks after implementing mitigation measures and evaluating the effectiveness of these measures
- Managing documents and records as well as legal requirements (e.g. Stock Corporation Act, Commercial Code, Basic Data Protection Ordinance, Federal Data Protection Act)
- Managing information security risks in accordance with ISO 27001
- Managing occupational safety risks in accordance with ISO 45001

While governance processes build a stable foundation, material ESG issues may vary, affecting the focus of governance activities. Material ESG issues require a common set of management initiatives and oversight. Details on the materiality topics and analysis are provided in Chapter Materiality Assessment. Awareness of ESG issues' influence on economic value is crucial, given the company's business model and operating environment. Managing ESG-related impacts, risks and opportunities is essential to establish a resilient business model.

ESG-related risk management is an ongoing task and the list of risks and risk matrix are updated on a regular basis. The following dashboard illustrates the currently known risks in a risk list and risk matrix.

> "All risks are documented with reaction plans that cover mitigation or avoidance measures. We have identified no major risks."
>
> ESG Risk Manager

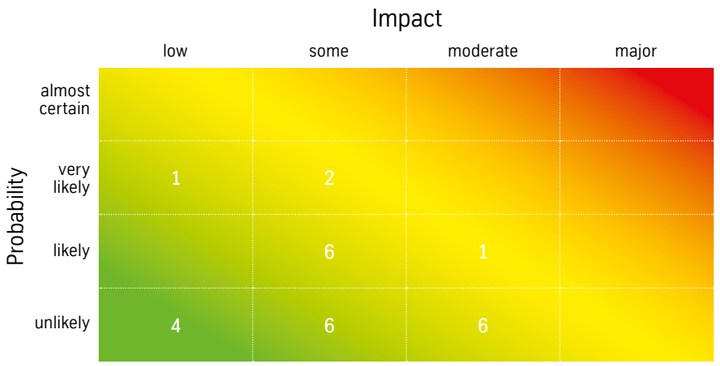


Figure 2.7: ESG risk matrix showing the amount of identified risks

Risk ID	Title
1	Natural disasters and extreme weather events - event-driven physical risk
2	Enhanced emissions-reporting obligations
3	Policy actions around climate change
4	Collapse of a systemically important industry or supply chain
5	Increased cost of raw materials
6	Longer-term shifts in climate patterns
7	Cost of living crisis related to energy and material costs
8	Mandates on and regulation of existing products and services
9	Substitution of existing products and services with lower emissions options
10	Costs to transition to lower emissions technology

Table 2.2: Extract of ESG risk list

Sustainability Governance and Compliance

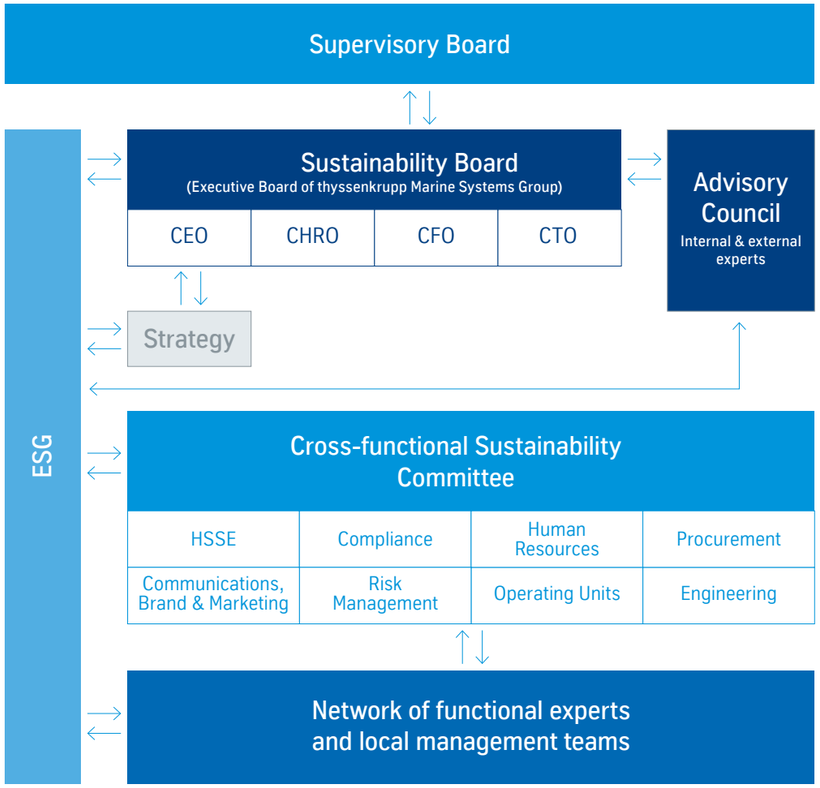


Figure 2.8

In a rapidly changing world, business resilience has become essential. Focusing on societal trends and contributing to the development of client nations are key to building resilience. Integrity, reliability, credibility, and consistency are the guiding principles behind the company's corporate governance processes.

ESG governance forms a fundamental part of good governance. The company has established clear lines of responsibility to enhance commitment across its operational units and sites. Figure 2.8 illustrates the connections and interactions between various roles. In FY 2023/2024, the company has prioritised the implementation of audit-compliant processes and fostered internal dialogue, participation, and employee development. Initial sustainability reporting KPIs have also been integrated into the internal control system and risk control matrix.

Sustainability performance is incorporated into the Long Term Incentive Plan (LTI), a global compensation scheme for members of the executive board and other selected executives across the thyssenkrupp group. The non-financial targets include sustainability metrics such as the proportion of women, energy efficiency, and investments in sustainability-related research and development.

Core Elements of Due Diligence	Paragraphs in the Sustainability Report
a) Embedding due diligence in governance, strategy and business model	Chapter Sustainability Governance and Compliance
b) Engaging with affected stakeholders in all key steps of the due diligence	Chapter Stakeholder Engagement
c) Identifying and assessing adverse impact	Chapter Materiality Assessment
d) Taking actions to address those adverse impacts	Chapter Sustainability Governance and Compliance
e) Tracking effectiveness of these efforts and communicating	Chapter Sustainability Governance and Compliance

Table 2.3: Core elements of due diligence

"We highly value the critical and constructive feedback provided by our ESG Advisory Council. It serves as a crucial instrument in advancing the thyssenkrupp Marine Systems' transformation towards a more sustainable future while helping us to continuously improve."

CEO

ESG Advisory Council 2024

To enhance its ESG profile, thyssenkrupp Marine Systems has established an independent ESG Advisory Council, comprising experts from academia, politics, business, and non-profit sectors. The council will support the company in implementing and refining its sustainability strategy, offering insights and guidance on specific initiatives. This annual event aims to bolster the ESG strategy, particularly through external feedback.
In June 2024, thyssenkrupp Marine Systems convened the council's inaugural meeting, focusing discussions on key topics such as diversity, challenges faced by women, sustainable business practices, economic growth, and the impact of regulations on competitiveness.

Stakeholder Engagement

Stakeholder engagement focusses on the needs of key groups. The systematic identification, analysis as well as planning and implementation of actions to strengthen the relationship to stakeholders are part of the daily business at thyssenkrupp Marine Systems. The table 2.4 shows the forms of dialogue and the material topics.

Target Groups	Relevant Material Topics	Forms of Dialogue
Employees	· Technology & innovation · Cybersecurity & information · Business integrity · Health & safety in workplace · Customer intimacy	Regular: • Works council • Employee events • Employee reviews and surveys • Working groups • Compliance office
Customers	· Solutions safety & performance · Customer intimacy · Health & safety in workplace · Diversity, equity & inclusion · Regulatory environment	Continuous: • Customer service & sales talks • Industrial associations round table • Governmental dialogue • Fairs & exhibitions
Suppliers & service providers	· Cybersecurity & information · Technology & innovation · Risk management	Regular: • Dedicated working groups • Procurement department • Supplier days
Government & regulatory bodies	· Solutions safety & performance · Health & safety in workplace · Customer intimacy · Regulatory environment	Several times a year: • National & international committees • Dedicated working groups in industrial associations & institutions

Table 2.4: Material topics and forms of dialogue of the respective target groups

The best way to minimise disagreement is to make sure that all stakeholders are in the room.

Materiality Assessment

The principal impacts, risks, and opportunities (IRO) of the undertaking are identified through a comprehensive double materiality assessment. thyssenkrupp Marine Systems' initial double materiality assessment, conducted at the end of 2022, remains a valid baseline for evaluating progress in the defined material topics. The perception of thyssenkrupp Marine Systems' alignment with the 18 pre-identified CSR issues (also referred to as "Materiality topics") has been analysed. An update of these findings is planned for 2025, approximately two years after the initial assessment. Strategic conclusions have been revised in line with the latest guidelines, and, following expert analysis, additional material IROs have been incorporated into the findings from the previous two reports.

Figure 2.9: ESG material topics

Environment

Climate change & GHG emissions

Climate change refers to the change of climate which is attributed directly or indirectly to human activity altering the composition of the global atmosphere by emitting greenhouse gases (GHG).
Companies take responsibility for global climate protection and commit to the Paris Agreement. Based on a comprehensive analysis of its GHG emissions, they are able to consistently align their actions with climate protection targets. Technical innovations make it possible to reduce GHG emissions in many areas. At the same time, companies are striving to significantly reduce their own carbon footprint as part of their ESG strategy.

Waste management & recycling, including hazardous materials

Waste management includes the collection, transport, recovery, and disposal of waste, including the supervision of such operations and the aftercare of disposal sites.
The aim of waste management is to avoid waste, protect the soil, and thus reduce the impact of economic activity on people and the environment to a minimum. Companies are increasingly aligning their actions with the principle of the circular economy. This includes, for example, the increased use of recycled and recyclable materials in production, the reprocessing of operating materials or the expansion of capacities for the recovery of (precious) metals at the end of the products' useful life.

Marine ecosystems & biodiversity

Biodiversity describes the number and variety of life forms on Earth. If the diversity of flora and fauna is low, the resilience of ecosystems to changes such as climate change is weakened. Manufacturing companies depend on ecosystem services such as the availability of renewable raw materials or the high quality of air, water and soil, and at the same time they have an influence on them. Marine ecosystems are a particular concern for companies with coastal locations and shipyards.

Energy management & source of energy

Energy management is the proactive and systematic monitoring, control, and optimization of an organization's energy consumption to conserve use and show responsible use of resources. Energy-intensive companies take responsibility for the efficient use of energy and the expansion of the utilization of renewable energies.

Environmental footprint of products & services

Environmental footprint is a multi-criteria measure used to calculate the environmental performance of a product, service or organization based on a life cycle approach. It takes into account the total supply and demand of goods and services for the planet. Customers should be able to make their purchasing decision not only based on qualitative and economic criteria, but also with regard to the environmental impact of a product.

Social

Involvement and upskilling of employees

Learning and development are essential success factors for a positive corporate culture. The skills and competencies of employees are crucial for profitable growth and lasting success. Upskilling is about closing specific skill gaps among employees and providing appropriate training opportunities.
Involvement means the direct participation of employees to help an organization fulfill its mission and to meet its objectives by applying their own ideas, expertise, and efforts towards solving problems and making decisions.

Diversity, inclusion & equality

Diversity means having a range of people with various racial, ethnic, socioeconomic, and cultural backgrounds and various lifestyles, experience, and interests. Seizing the opportunity diversity offers means, among other things, that people with different backgrounds are employed in a company and contribute their individual perspectives and skills to the development of its business.
The same applies to the practice of providing equal access to opportunities and resources for people who have physical or intellectual disabilities and members of other minority groups.
Equality is also the belief that no one should have poorer life chances because of the way they were born, where they come from, what they believe, or whether they have a disability.

Health & safety in workplace and workers' rights

Health & safety concepts serve to protect employees, contractors, and neighbors, prevent damage to property and the environment, and protect information. Employers must set up and maintain the entire workplace, so that employees are protected from safety and health risks and accidents. Health management serves to maintain and promote the health and performance of employees.
Responsible behavior includes compliance with international labor and social standards, such as those set out in the Universal Declaration of Human Rights of the United Nations (UN), the OECD Guidelines for Multinational Enterprises, and the "fundamental principles and rights at work" of the International Labor Organization (ILO).

Local community engagement

Companies have a special responsibility for the neighborhood at their production sites. With targeted support measures and regional social engagement, an open dialogue between local communities and company management can be supported to strengthen the trust in company activities.

Customer satisfaction/intimacy

Customer intimacy centers on having a true understanding of customer values and needs. It requires awareness of customer perceptions and aligning the business strategy accordingly.

Corporate Governance & Compliance

Business ethics & integrity

Business ethics is acting with honor regardless of whether the actions are public. It is about an ethical culture that permeates the entire organizational ecosystem. Especially managers should live up to their role as role models by having a positive influence on the commitment and development of their employees and by developing and implementing business strategies – guided by the company values.

Cybersecurity, information security & privacy

Cybersecurity is critical to business and involves the protection of IT systems and data from cyber threats such as computer-assisted fraud, espionage, sabotage or vandalism. Information security protects sensitive information from unauthorized activities, including inspection, modification, recording, and any disruption or destruction. The goal is to protect employees, locations, systems, and the company's know-how against interference from third parties.

Risk management & business continuity

Risk management is the process of identifying, assessing, and controlling threats to an organization's capital and earnings. These risks stem from a variety of sources, including financial uncertainties, legal liabilities, technology issues, strategic management errors, accidents, and natural disasters.
Business continuity includes strategies, plans, measures, and processes to minimize damage caused by business interruptions in a company. It is intended to ensure operations under crisis conditions and to enable internal processes to be restarted quickly and easily after a failure. The general goal is to ensure the continued existence of the company and its economic activities.

Management of the regulatory environment

Regulatory management is a set of policies, processes, controls, and tools employed by an organization to comply with local and/or global regulatory policies, laws, and standards. Regulatory management helps companies to coordinate their complex regulatory and compliance activities and to improve the efficiency of their processes.

Products & Supply Chain

Solutions quality, safety & performance

Solutions quality refers to how well a solution satisfies customer needs, serves its purpose, and meets industry standards.
Product safety is the capacity of a product to be considered safe for its intended use. In this context, policies aim to safeguard individuals from the dangers of goods.
Solutions performance is described as the response of a solution to external actions in its working environment. The performance of a product is realized through the performance of its constituent components.

Technological development & innovation

Innovation is the practical implementation of ideas that result in the introduction of new goods or services or improvement in offering goods or services.
Innovations can make a decisive contribution to reducing emissions or decoupling growth from resource consumption. Targeted research and technological development is a prerequisite for sustainable solutions and an important growth driver for companies.

Material sourcing & resources efficiency

Material sourcing is the process of acquiring the raw materials needed to create a final product. When certain raw materials become scarce, companies are faced with the uncertainty of whether they will have adequate raw materials needed for production in the long run. With this risk, the company may have to stop production at any time and cannot meet consumer demands.
Resource efficiency stands for the relationship between material use and benefits, whether in production or consumption. The aim is to maximize the benefits of products or services while minimizing consumption and waste.

Sustainable & responsible supply chain

A supply chain is the network of all the individuals, organizations, resources, activities, and technology involved in the creation and sale of a product.
Through sustainable supply chain management, the company can secure competitive advantages, establish stable and reliable supply chains and at the same time meet high ethical and environmental requirements.

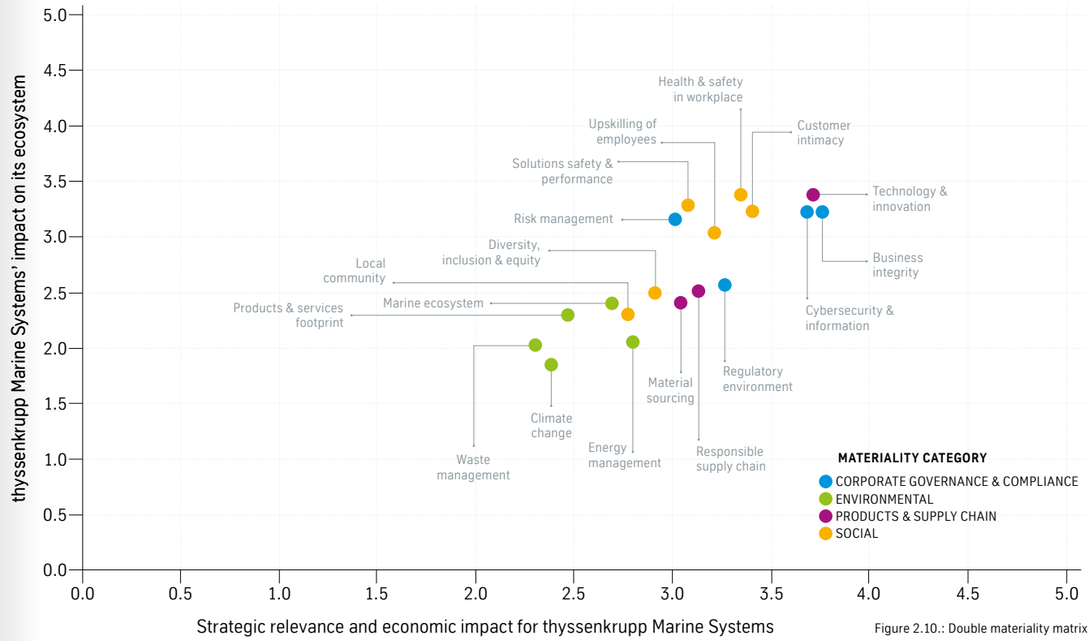


Figure 2.10.: Double materiality matrix

Social Engagement

With ongoing business growth and an increasing workforce, thyssenkrupp Marine Systems remains a global player in the maritime industry and a key employer in Schleswig-Holstein and Bremen. Maintaining the highest standards in governance, compliance, health, and safety is a constant priority. Effective occupational safety and health management has helped to further decrease the accident frequency rate to 2.6 in FY 2023/2024, compared to 3.2 in FY 2022/2023.

This year has been successful in terms of social engagement activities, including around €40,000 in charitable donations, the start of social days for apprentices, participating in a charity run, preserving the submarine memorial in Laboe through apprentice involvement, and establishing a new policy for social engagement.

Read more about Social Engagement in chapter People and Values.

Driving Innovation and Development

A key focus of Strategy 2033 is to strengthen technology and innovation. Strategic innovations are being pursued to systematically expand technology leadership. To achieve this, research and development (R&D) investments are being continuously increased to 5% of annual sales. Technology gaps will be closed by consistent pursuit of technology trends, including through acquisitions. In addition, increasing the proportion of R&D investments in key trend areas – in particular AI, autonomy, and multi-domain operations (MDO) – and expanding external funding will support our technology leadership goals. The establishment of innovation greenhouses is creating an open space for creative innovation.

Read more in chapter Sustainable Innovation.

Business Integrity and Customer Intimacy

Customer intimacy is a strategy focused on building deep and lasting relationships with customers by tailoring offerings to meet their specific needs. Maritime security has experienced a noticeable increase in importance in recent years. International competition for resources in the Arctic, the security of new sea routes in the North Atlantic, growing geopolitical tensions in the Indo-Pacific, and new threats to the countries bordering the Baltic Sea are among the many maritime security challenges today. The sabotage of the North Stream gas pipelines in September 2022 demonstrated the fragility and need for protection of critical civilian infrastructure on the seabed and in coastal areas. As a maritime powerhouse, thyssenkrupp Marine Systems is committed to helping customers address emerging threats through tailored products.

Read more in chapter Business Ethics and Integrity.

Culture and Upskilling of Employees as Enablers for the Future

In times of a scarcity of skilled workers, upskilling of the existing workforce is of utmost importance. The tk talents that started their journey in the beginning of 2023 received their certificates for the first part of their training program developing their individual potential. The digital learning library has expanded the offer of courses. Transformation and value creation in focus different projects were aiming to improve company culture. In total, more than 50,000 hours of training in the field of personal development have been conducted by the employees in FY 2023/2024. More than 90% of the employees performed a development talk with their superiors.

Read more in chapter People and Values.

Environment

Further improved greenhouse gas calculations are resulting in a better understanding of possible reduction measures. This year's report includes first results on the scope 3 calculation at ATLAS ELEKTRONIK. Aiming for an audit-proof environmental data collection process the internal control systems has been adapted to manage the risks in data collection and disclosure. The targeted energy efficiency gains for the business unit were clearly overachieved with 1.1 GWh. The mentioning of biodiversity loss and ecosystem collapse in the top ten long-term risks in the global risk report by the world economic forum demonstrated once again the topic's importance. It will be one of the upcoming targets to sharpen the focus and understand the scope for action at thyssenkrupp Marine Systems.

Read more in chapter Environmental Impacts.

Embedding Diversity, Equity & Inclusion Values Across the Whole Company

Many actions and events took place in the past year to promote diversity as a driver for success. The Empowering Network – a female network founded by employees – is growing, and working groups implemented the first improvements like shared leadership, awareness sessions and regular networking opportunities. On the International Day for the Elimination of Racial Discrimination, apprentices presented a special designed bench to raise awareness and fight against racism. Furthermore, a new contract for joint events with the school for special needs in Ellerbek has been closed. The company continuously strives for diversity and inclusion and stands up for the values.

Read more in chapter People and Values.

The assessment of the impacts, risks and opportunities resulted in the following impacts and opportunities to be considered as most material.

Risk management including material ESG risks is described in chapter Integrated Risk Management and Business Continuity.

Materiality	Classification	Description of Impact/Opportunity
Economic, social and cultural rights of affected communities	Positive impact	Financial contributions for providing and ensuring sustainable development, such as water sanitation and education in local communities, can create an added value to the affected societies and groups.
Technology & innovation	Positive impact	Use of energy efficient and resource conserving technology to pursue technology leadership and protect environment
Upskilling of employees	Positive impact	Upskilling of employees results in content workforce and high quality of products and processes.
Own workforce	Positive impact	Family-friendly working conditions result in higher job satisfaction and enable a balanced lifestyle.
Own workforce	Positive impact	Increasing diversity in teams improves performance by a multi-layered view.
Technology & innovation	Positive impact	Development of technology and innovation that reduces climate impact, e.g. alternative propulsion, offshore technologies
Technology & innovation	Positive impact	Increase maritime security, e.g. for critical infrastructure by high technology products
Health & safety	Positive impact	Highest standards of health and safety with continuously decreasing accident rates
Cyber- and information security	Positive impact	Driving innovation to increase cybersecurity
Value chain upstream	Positive impact	Fair working conditions along the value chain due to Supplier Code of Conduct and supplier audits
Value chain downstream	Positive impact	Supporting well-being of customer's navy by optimized products for military operation
Resource use and circular economy	Positive impact	Implementation of circular economy concepts may reduce resource inflows
Resource use and circular economy	Positive impact	Providing services for refit and modernization of existing products extends lifetime
Business integrity	Opportunity	Corporate Citizenship can function as a driver for reputation and profitability.
Customer intimacy	Opportunity	High customer intimacy by regular dialogue and long-term partnerships supports meeting changing customer needs due to increasing security needs
Resource use and circular economy	Opportunity	Strengthening customer intimacy by offering an optimized maintenance and spare parts management
Waste	Opportunity	Waste separation offers the opportunity to sell recycable waste to a third party.
Economic, social and cultural rights of affected communities	Negative impact	Business activities lead to a violation of a communities' economic, social and cultural rights, i.e. negative environmental impacts through pollution or extensive extraction of air, soil and water can lead to polluted drinking water and lack thereof.
Economic, social and cultural rights of affected communities	Negative impact	Toxic waste spills (because of (natural) disasters) leading to contamination of water causing adverse health effects
Resource use and circular economy	Negative impact	High dependency on high climate impact products like steel
Water and marine resources	Negative impact	Spills of hazardous substances in production leading to contamination of water, air or soil causing adverse health effects
Climate change mitigation and adaptation	Negative impact	High consumption of fossil fuels in product's use phase

Table 2.5: Identified IROs of the Business Unit Marine Systems

Environmental Impacts

3

Promoting environmental and climate protection measures in processes, products, and projects over the entire lifecycle is of major importance at thyssenkrupp Marine Systems.

Products have always been developed and built with the efficient and effective utilization of resources in mind. Research and development help to increase energy efficiency further. Production processes are constantly being optimized to see how greenhouse gas emissions can be reduced. This also includes environmentally friendly energy and heat supply. This chapter will illustrate the status quo, targets and actions to handle the rapidly changing climate by minimizing environmental impacts. This covers the topics:

- **Climate change adaptation:** definition of adaptation strategies to address anticipated climate risks through policies and planning to reduce vulnerability to the current or expected impacts of climate change, e.g. disaster preparedness and emergency response, GHG inventories, resilience planning, risk and vulnerability assessments
- **Energy management:** a powerful tool for tackling climate change and responsibly managing energy sources
- **Pollution:** policies and measures to avoid pollution as well as the assessment of pollution levels (excl. GHG) in air, water, and soil, including microplastics, and the amounts of substances of concern (SOC) and of very high concern (SVHC)
- **Waste management:** avoiding waste to conserve resources and protect people and the environment
- **Water resource management:** efficient use of water resources, avoiding pollution and contamination risks, to protect the environment, nature, and local communities
- **Noise management:** strategies to avoid noise pollution mainly direct at the source to protect the environment.

“Products have always been developed and built with the efficient and effective utilization of resources in mind. We constantly address environmental aspects.”

Environmental Manager

Group Activities through the Lens of European Taxonomy

The European Union's Taxonomy Regulation 2020/852 and its delegated acts aim to create a common classification system for environmentally sustainable activities across all sectors, promoting greater transparency and standardisation. Driven by internal experts, thyssenkrupp Marine Systems' activities were allocated to relevant taxonomy criteria and aligned with the consolidated reporting of the thyssenkrupp AG. A significant part of this evaluation includes collecting and reviewing evidence and records with the dedicated experts at thyssenkrupp AG. Core parts of thyssenkrupp Marine Systems' activities are currently not allocable under the existing taxonomy requirements due to the inherent nature of the defence industry business model. However, this assessment may change as thyssenkrupp Marine Systems pursues new technologies for ammunition clearance and converter platforms for offshore wind parks.

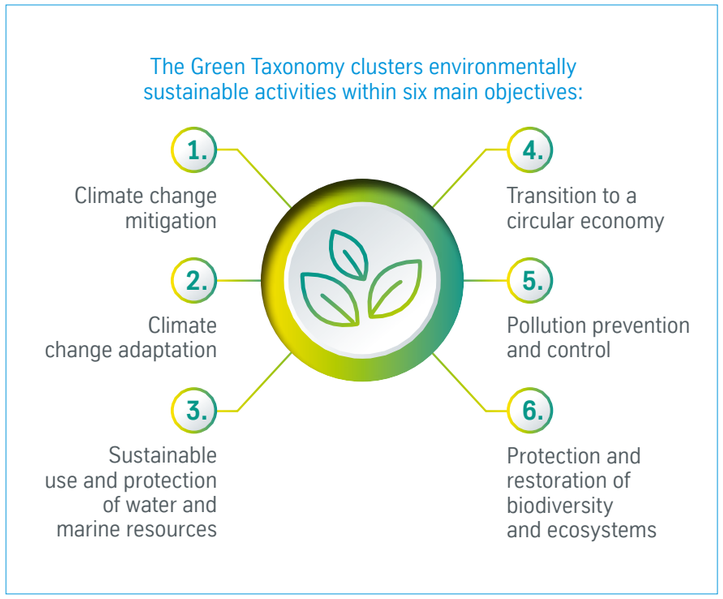


Figure 3.1

Climate Change and Energy

Promoting environmental and climate protection measures in processes, products, and projects is a fundamental part of thyssenkrupp Marine Systems' 2033 strategy. Although the double materiality assessment did not indicate that climate-related topics were of the highest importance to stakeholders, the company acknowledges its responsibility for environmental and climate protection. thyssenkrupp Marine Systems has set ambitious targets to reduce the climate impact of its business activities and the associated value chain. Furthermore, the company aims to place greater emphasis on biodiversity in the future. Efforts will continue to align with the Paris Agreement's goal of limiting the temperature increase to 1.5°C. Detailed emission targets and measures to achieve this goal can be found in chapter Climate Change and Energy. To fully understand the impacts, risks, and opportunities associated with climate change mitigation and adaptation, the company conducts a comprehensive climate risk analysis.

The company's commitments include:

- Expanding business operations with technologies that reduce climate impact in:
  – Maritime services
  – Offshore technologies
  – Hydrogen technologies
- Actively promoting climate and environmental protection
- Using raw materials and energy efficiently

With 2024 being on track to becoming the warmest year on record and the first year reaching above the 1.5°C mark relative to pre-industrial levels, climate mitigation measures are required more than ever.

The following table provides an overview of the key environmental data for the Marine Systems Business Unit for FY 2022/2023 and FY 2023/2024.

Key Environmental Data	Unit	FY 2022/2023	FY 2023/2024
Energy			
Total energy consumption	MWh	79,600.4	80,639.7
Greenhouse gas emissions			
Scope 1	t CO_2e	4,978.1	4,968.0
Scope 2	t CO_2e	14,819.2	15,361.4
Scope 3*	t CO_2e	32,444	181,326
Waste			
Total waste	t	4,708.7	4,589.8
Waste for recycling	t	4,257.9	4,280.8
- thereof hazardous waste	t	755.0	820.9
Waste for disposal	t	450.8	309.0
- thereof hazardous waste	t	164.9	100.9
Water			
Freshwater consumption	m^3	179,387.3	219,346.5
Waste water production	m^3	108,432.0	112,786.2

Table 3.1

*Scope 3 only partly calculated as explained in chapter Accounting of GHG Emissions

General remarks:

All figures are rounded. Absolute values may vary year-on-year due to fluctuations in production levels. As such, they do not directly indicate environmental performance.
Activity data and emission factors are partially derived, simplified, grouped, and not 100% precise due to the quality of the input data; this leads to uncertainties. Greenhouse gas accounting involves multiplying activity data by emission factors, followed by aggregating these values to estimate total greenhouse gas emissions. Consequently, every calculation is subject to a certain degree of uncertainty.

Climate risk analysis

In order to evaluate the impact of the climate change on the undertaking, a climate risk analysis is performed following the recommendations of the German Environment Agency based on the EU commission 2021/2139. The general process of a climate risk analysis is illustrated in figure 3.2. The investigated sites including their NUTS codes (if available) are listed below:

thyssenkrupp Marine Systems
- Kiel (Germany, DEF02)
- Hamburg (Germany, DE600)
- Emden (Germany, DE942)
- Wismar (Germany)
- thyssenkrupp Estaleiro Brasil Sul Ltda. in Itajaí (Brazil)

ATLAS ELEKTRONIK
- Bremen (Germany, DE501)
- Wedel (Germany)
- Wilhelmshaven (Germany, DE945)
- Hagenuk Marinekommunikation in Flintbek (Germany, DEF0B)
- ATLAS UK in Winfrith (UK)
- ATLAS UK in Weymouth (UK)

In the initial stage, both chronic and acute local climate hazards related to temperature, wind, water, and solids are identified for each site. Each potential climate phenomenon is then evaluated to determine whether it poses a risk to specified system elements. If a risk is identified, the climate phenomenon is analysed in greater detail. The system elements assessed include:

- Buildings in general
- Outdoor facilities (e.g. cranes, docks)
- Open spaces (parking pavements, etc.)
- Storage and production spaces outdoors
- Essential transports/traded goods
- Production process
- Energy supply (electricity, heating)
- Water supply
- Employees
- Subcontractors/service providers
- IT and communication
- Site access, on-site traffic (by car, truck, train, ship)
- Waste and sewerage management

Based on available scientific data, climate variables have been examined for changes over the past 20-30 years, the current state, and future projections. For future scenarios, the representative concentration pathway (RCP) 8.5* (i.e., a low mitigation scenario) has been selected for the years 2030 and 2060 where data is available. To capture a range of potential outcomes, the 15th and 85th percentiles are used to represent optimistic and pessimistic scenarios, respectively. In some cases, projections are only available for the period 2071-2100, which reflects the standard 30-year definition of climate periods and the long-term focus up to 2100 employed by many models. Where possible, projections are provided for the specific city; otherwise, data for the broader state is used.

In line with the climate scenario analysis, system components are assessed to understand the risk of damage from associated climate phenomena. For system components at medium or high risk, the probability of occurrence and potential damage extent are evaluated. Finally, a list of adaptation solutions is compiled, including both existing emergency management plans and strategies for future scenarios

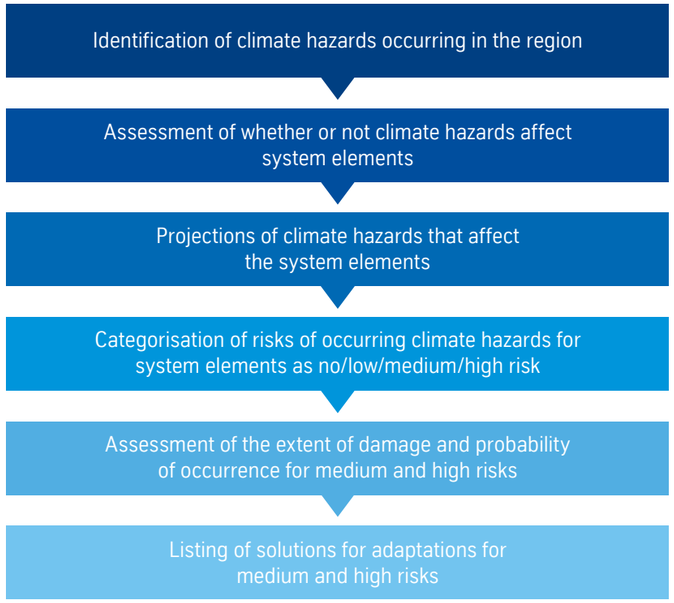


Figure 3.2: General process of a climate risk analysis

* RCP 8.5 refers to the concentration of carbon that delivers global warming at an average of 8.5 watts per square meter across the planet. It delivers a temperature increase of about 4.3°C by 2100, relative to pre-industrial temperatures. The RCPs are formally adopted by the IPCC.

Impacts of Acute Physical Climate Risks:

Acute physical climate risks arise from extreme weather events, which are expected to become increasingly frequent due to climate change. Regular occurrences of heatwaves and droughts could impair the well-being of employees and others within the value chain. Additionally, overstrained heating systems may disrupt production processes. Increasing risks of forest and wildfires could also lead to transport delays caused by the need for detours.

Moreover, rising occurrences of hurricanes, tornadoes, storms, lightning strikes and water-related risks – such as heavy rainfall, flooding, storm surges, and landslides – are anticipated. These climate risks could cause damage to buildings, operating facilities, outdoor areas, and critical infrastructure, including energy supply systems, IT and communication networks, and waste and sewage management. Furthermore, these risks pose threats to human well-being and may significantly disrupt transport and production processes, resulting in increased transport and delay costs.

Mitigation Measures for Acute Physical Climate Risks:

Action plans are already in place to mitigate the potential damage caused by most acute physical climate risks. Air conditioning systems and installed drinking water dispensers are in use to support human well-being. At key production sites, medical care centres provide support for employees and subcontractors. Additionally, the company's fire brigades are trained to handle and prepare for extreme weather conditions. Cooling systems are used to prevent temperature-sensitive equipment from overheating, reducing potential production delays.

To avoid additional transport costs due to detours, alternative routes can be planned based on early warnings from national risk alert systems. Buildings and outdoor facilities at the sites are regularly inspected to enhance resilience against strong rainfall, flooding, storm surges, and high winds. In preparation for early warnings of storms, tornadoes, hurricanes, and water-related risks, items stored outdoors will be secured using alternative storage locations or wind-resistant solutions.

Impacts of Chronic Physical Climate Risks:

Chronic physical climate risks involve relatively slow and continuous changes in climate patterns, often interacting with acute climate risks. For example, recurring heatwaves can lead to chronic heat stress, while rising sea levels can exacerbate the effects of acute storm surges.

The most significant risk comes from rising sea levels at coastal sites, which also increases the likelihood of flooding and more severe storm surges. In the region around Itajaí, forecasts predict water shortages and deteriorating water quality. Limited access to drinking water could lead to health issues for both the company's workforce and people within the value chain.

Mitigation Measures for Chronic Physical Climate Risks:

Measures to mitigate chronic climate risks can be implemented at an early stage, allowing for effective adaptation to the gradual changes in climate. To mitigate the long-term risks of flooding and storm surges, protective measures could include building flood barriers, securing insurance to limit financial impacts, and locating valuable assets, such as critical infrastructure, well above ground level.

To ensure an adequate supply of drinking water, careful resource management is essential, and alternative water sources should be identified. Harvesting rainwater and reusing water also help to maintain sufficient water supplies. Water quality is regularly monitored to enable prompt action, and effective water treatment systems are crucial to ensuring high water quality, as is the prevention of water pollution. Mitigating chronic climate risks is an ongoing process and will be reassessed annually.

The potential impacts of temperature and precipitation variability, as well as saline intrusion, were assessed. No significant risks were identified for the company.

> "Due to the anthropogenic climate warming, sea levels are rising and extreme weather events are becoming more frequent, posing new risks to us, which must be assessed in order to mitigate potential damage."
>
> ESG Risk Manager

Relevant physical climate hazards and the identified risk rating:

Climate Risk	Present	Short-term (next 10 years)	Long-term (next 30 years)
Change in air temperature	Low risk	Low risk	Low risk
Change in water temperature	Low risk	Low risk	Low risk
Heat waves	Low risk	Low risk	Moderate risk
Heat stress	Low risk	Low risk	Moderate risk
Cold periods/frost	Low risk	Low risk	Low risk
Forest and wildfire	Low risk	Moderate risk	Moderate risk
Enhances UV radiation	Low risk	Low risk	Low risk
Changes of wind patterns	Low risk	Low risk	Low risk
Changes in humidity	Low risk	Low risk	Low risk
Hurricanes	Low risk	Low risk	Moderate risk
Storm	Low risk	Low risk	Moderate risk
Tornadoes	Moderate risk	Moderate risk	Moderate risk
Lightning strikes	Low risk	Low risk	Moderate risk
Changes of precipitation patterns	Low risk	Low risk	Low risk
Sea level rise	Low risk	Low risk	Moderate risk
Ocean acidification	Low risk	Low risk	Low risk
Water shortage	Low risk	Low risk	Moderate risk
Reduced water quality	Low risk	Low risk	Moderate risk
Drought	Low risk	Low risk	Moderate risk
Strong precipitation	Moderate risk	Moderate risk	Moderate risk
Flood	Moderate risk	Moderate risk	High risk
Storm surges	Moderate risk	Moderate risk	High risk
Coastal erosion	Low risk	Low risk	Low risk
Landslides	Low risk	Low risk	Moderate risk

Low risk Moderate risk High risk

Table 3.2

Reduction Targets and Main Actions Taken

On its way to Net Zero[2] by 2045, thyssenkrupp Marine Systems has committed to reducing its scope 1 and 2 emissions by 30% and its scope 3 emissions by 16% by 2030 (see figure 3.3). The baseline year for scope 1 and 2 emissions is 2017/18, while the baseline for scope 3 emissions will be established following the completion of the GHG inventory. From 2030 onwards, the base year for GHG emission reduction targets will be updated every five years.

This report includes the "product use" category within the scope 3 inventory, and, for the first time, part of ATLAS ELEKTRONIK's scope 3 emissions has been calculated. The Science Based Targets initiative has carefully assessed thyssenkrupp AG's targets using the latest climate science, confirming they align with the objectives of the 2015 Paris Agreement, which aims to limit the global temperature increase this century to well below 2°C. In striving for Net Zero by 2045, efforts will be made to limit the temperature rise to 1.5°C, as outlined by the Paris Agreement. The targets have been validated and integrated into the company's management processes through the ESG governance framework, including relevant committees and boards. Additionally, environmental and energy measures are an integral part of the annual financial planning.

The GHG emission reduction milestones explicitly exclude any GHG removals or carbon credits, focusing solely on the company's own emission reduction efforts. Residual GHG emissions, after all avoidance measures are exhausted, will be addressed through carbon credits and investments in carbon removal or capture projects, with further details to be specified in the medium term. Currently, no internal carbon pricing scheme is in place.

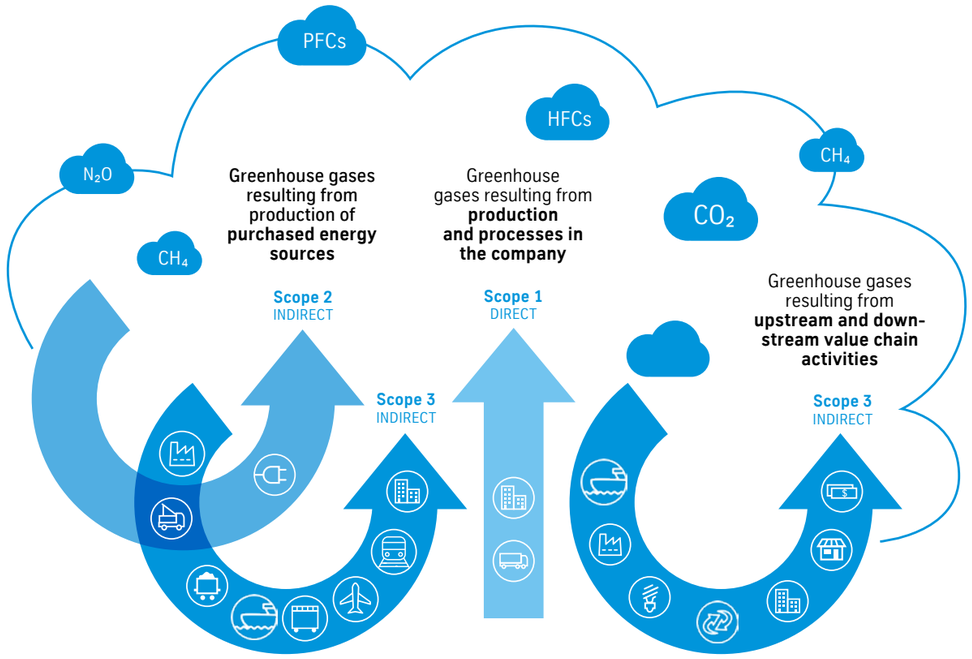


Figure 3.3: Overview of climate targets and scopes

Scope 1 | Scope 2
Combined reduction target:
-30% by 2030

Scope 3
Reduction target:
-16% by 2030

[2] according to the Net-Zero Standard from the Science Based Targets initiative

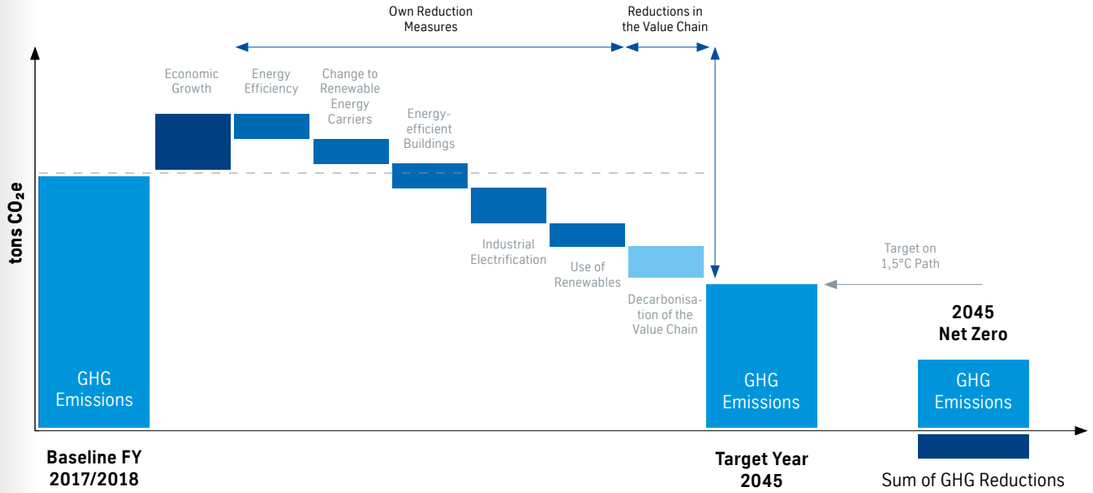


Figure 3.4: Examples of decarbonization levers

The integration of the Climate Action Program for Sustainable Solutions (CAPS) by thyssenkrupp AG supports the company's efforts and strategy to achieve climate targets. The program is structured around three main pillars:

#IMPLEMENT – Focuses on climate measures such as improving energy and resource efficiency. thyssenkrupp Marine Systems has already achieved significant energy savings through the Groupwide Energy Efficiency Program (GEEP) and continues to make improvements (see chapter Energy Management & Sources of Energy).
#ENABLE – Aims to expand business operations with sustainable technologies to reduce climate impact and help customers address climate change.
#ENGAGE – Promotes sustainability across the value chain and involves engaging with suppliers (see chapter Responsible Procurement).

Effective energy management is one of the most powerful tools for tackling climate change and responsibly managing energy resources. Therefore, all major production sites of thyssenkrupp Marine Systems and ATLAS ELEKTRONIK GmbH have implemented energy management systems in line with ISO 50001 standards. The initiative not only aims to improve energy efficiency but also encourages the use of renewable energy sources. Where possible, electricity is procured with certification guaranteeing 100% renewable origin.

Figure 3.4 illustrates examples of decarbonization measures considered by the organization. Based on these measures, thyssenkrupp is developing a regularly updated roadmap to meet its climate targets. The carbon reduction plan includes conducting leverage analyses for CO_2 sources.

"We constantly evaluate our decarbonization measures, in order to fulfill our target to become Net Zero by 2045."

Head of ESG

Current Reduction Measures for Scope 1 and 2 Emissions:

Heat

- Investment in more economical heating systems
- Switching to alternative heat supply technologies where possible (dependent on energy suppliers)
- Electrical heating combined with purchasing renewables
- Maximisation of buildings' energy efficiency

Purchased and consumed electricity

- Reduction in consumption
  – LED-lighting
  – Intelligent control systems for machinery and lighting
  – Reinvestment in more fuel-efficient equipment)
- Photovoltaic
- Connection of battery and fuel cell test facilities to shipyard network in Kiel

Gas and Fuels

- Reinvestment in more fuel-efficient vehicles
- Analysis of options to use regenerative energy carriers for the owned combined heat and power plants
- Investment in company vehicles (incl. industrial trucks) with sustainable drive systems
- Increase in the rate of electric cars in the company fleet

Planned and On-going Reduction Measures for Scope 3:

Purchased goods

- Lever analysis to investigate carbon reduction potential in product categories
- Engagement with suppliers
- Increase in the amount of net zero suppliers

Waste

- Material flows analysis to increase material efficiency
- Waste management
- Digitalization to reduce failures in the production process

Business travel

- Business travel policy that takes climate friendly travel into account
- Awareness campaigns for climate friendly travels

Product in use

- Increasing energy and resource efficiency, e.g. by innovative technologies
- Investigate alternative sustainable propulsion systems

Sustainable commuting

- Public transport commuter tickets for employees
- Commuter app to organise car sharing for employees
- Use of company bikes within thyssenkrupp Marine Systems' premises
- Increasing number of electric powered vehicles in the company fleet
- Implementation of remote working since 2022
- Reduction of business trips and adaption of business travel policy
- Planned implementation of recharging infrastructure on thyssenkrupp Marine Systems' premises

"Willing is not enough, we must do. In order to achieve our targets, we continuously assess and implement reduction measures."

Head of ESG

ATLAS ELEKTRONIK UK Committed to Net-Zero Goal

Pioneering with a carbon reduction plan to comply with UK laws, ATLAS ELEKTRONIK UK has been providing more information on GHG emissions available since 2022.

To continue the company's progress towards achieving net zero under PPN 06/21, ATLAS ELEKTRONIK UK has adopted the following carbon reduction targets:

- ATLAS ELEKTRONIK UK is committed to achieving net zero emissions in scopes 1 and 2 by 2040.
- ATLAS ELEKTRONIK UK is committed to achieving net zero scope 3 emissions by 2045 at the latest.

As a business that has consistently grown since 2009, the Energy Management Team has helped ATLAS ELEKTRONIK UK use its energy more effectively, reducing energy consumption per employee by around 40% compared to what would have occurred without these measures. Since 2014, numerous environmental management measures and projects have been completed. The third version of the Carbon Reduction Plan outlines further carbon reduction and potential offset actions to be achieved by the end of the decade, including:

- Energy supply contracts switched to fully certifiable non-fossil fuel based supplies in July 2023. While no reduction was made on emissions for FY 2022/2023 in connection with this, reductions will be applied in subsequent financial years.
- Assessment of the viability of solar power at the main site: following completion of previous infrastructure initiatives, the roof of the main building is now a suitable location for a significant solar array.
- Evaluation of the suitability of other areas of the main site for solar power installations including the use of solar carports in car parks
- Introduction of fully electric vehicles to around a third of the company car-pool, with plans to increase this share in the future
- Implementation of ISO 50001 principles to the new restaurant, warehouse, and meeting room facilities currently nearing completion. Measures include heating solutions with reduced environmental impact (e.g. air source heat pump), zero use of natural gas, increased insulation options, and solar power generation from rooftop panels.

Furthermore, ongoing research and reviews are being performed to identify further opportunities to reduce carbon emissions and to integrate new neutral energy sources and carbon saving measures into product development and support strategies.

Accounting of GHG Emissions

Understanding and monitoring your current position is the first step towards achieving your goals. To facilitate this, thyssenkrupp Marine Systems has implemented a comprehensive, science-based assessment of its direct and indirect emissions, establishing a solid baseline over recent years. Future projections will be compared against this baseline, which will be updated every five years after 2030. The initial baseline for scope 1 and 2 emissions is set at FY 2017/2018, while the baseline for scope 3 emissions will be determined once the GHG inventory is completed. The goal is to continuously improve data availability and quality, enabling comprehensive tracking of all emission categories in the future.

Scope 1 & 2 Emissions

Scope 1 and 2 emissions are regularly monitored and have been reported by thyssenkrupp AG for several years. The CO_2 equivalent emissions are calculated in line with the GHG Protocol methodology, based on energy consumption and process emissions. These emissions are estimated using widely accepted emission factors from IPCC, IEA, and certified internal measurements. Scope 2 emissions are assessed using both market-based and location-based approaches.

During the reporting period, the greenhouse gas emissions (CO_2 equivalent) of the Business Unit Marine Systems – covering scope 1 and scope 2 emissions – amounted to approximately 20,300 tonnes CO_2e. The CO_2 emissions from direct combustion (scope 1) and from the purchase of energy and heat (scope 2) for the financial years 2021/2022, 2022/2023, and 2023/2024 are provided below in tonnes of CO_2 equivalent. The scope 2 emissions (both location-based and market-based) saw a slight increase compared to the previous financial year (figure 3.5). This is due to the fact that production intensified. Another aspect is that the emissions in FY 2021/2022 and FY 2022/2023 were still affected by Covid and were therefore lower than usual.

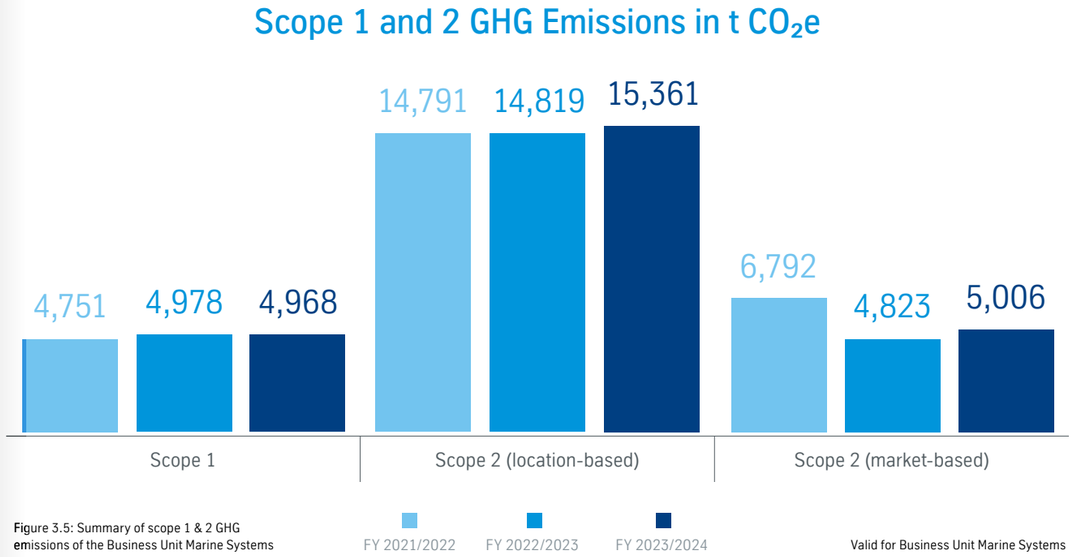


Figure 3.5: Summary of scope 1 & 2 GHG emissions of the Business Unit Marine Systems

The purchase of heat and electrical energy accounted for three-quarters (76%) of GHG emissions from energy during the reporting period. Most of the electricity purchased is sourced from 100% green energy, which significantly reduces market-based emissions.

A further 19% of GHG emissions from energy use is attributable to gas consumption for heat generation (figure 3.6). The company regularly assesses opportunities to supply renewable gas and fuel to increase the share of renewable energy consumed.

Share of GHG Emissions per Energy in FY 2023/2024

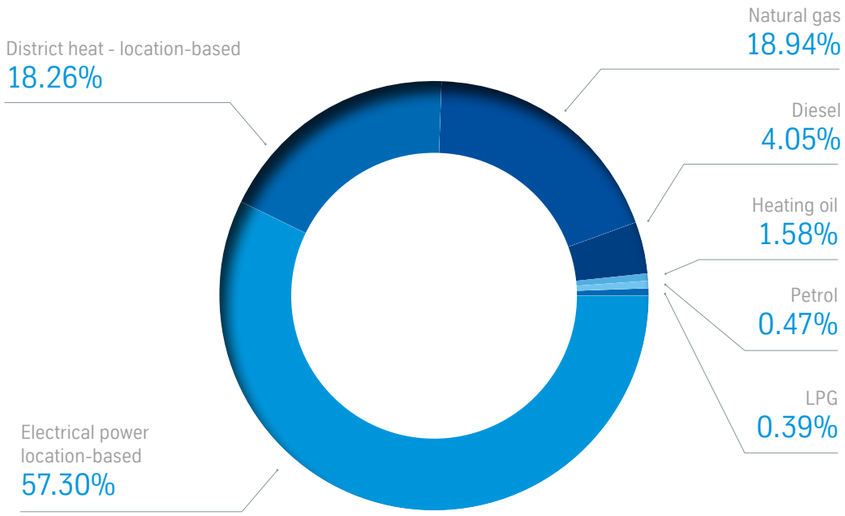


Figure 3.6

Valid for Business Unit Marine Systems

thyssenkrupp Marine Systems GmbH continues to be responsible for the largest share (~64%) of total scope 1 and 2 emissions within the Business Unit (figure 3.7). The Kiel shipyard contributes the majority (95%) of thyssenkrupp Marine Systems' scope 1 and 2 emissions. ATLAS ELEKTRONIK GmbH holds the second largest share within the group, accounting for 29%.

Share of GHG Emissions Scope 1 and 2 in FY 2023/2024

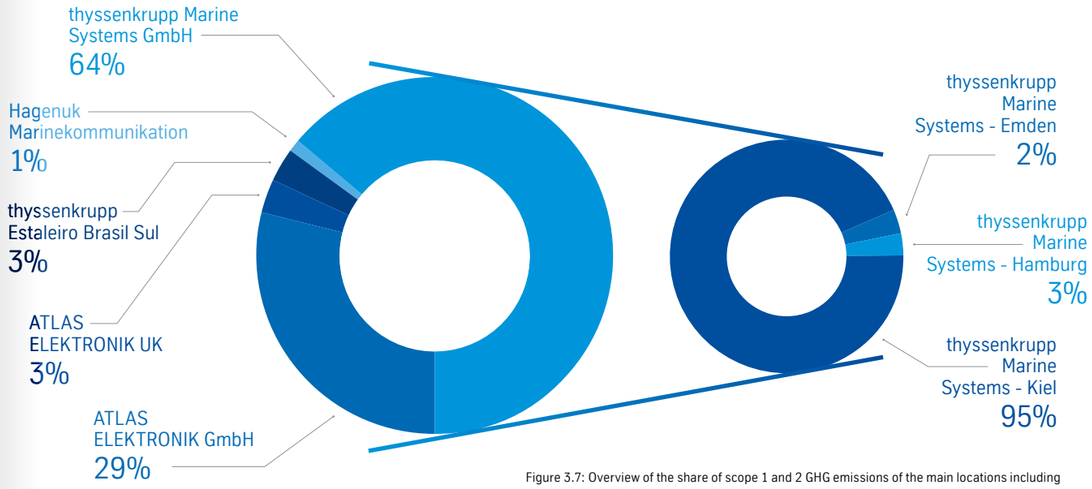


Figure 3.7: Overview of the share of scope 1 and 2 GHG emissions of the main locations including the share of GHG emissions of thyssenkrupp Marine Systems GmbH per site in FY 2023/2024

GHG Emissions in t CO_2e at the Kiel Site

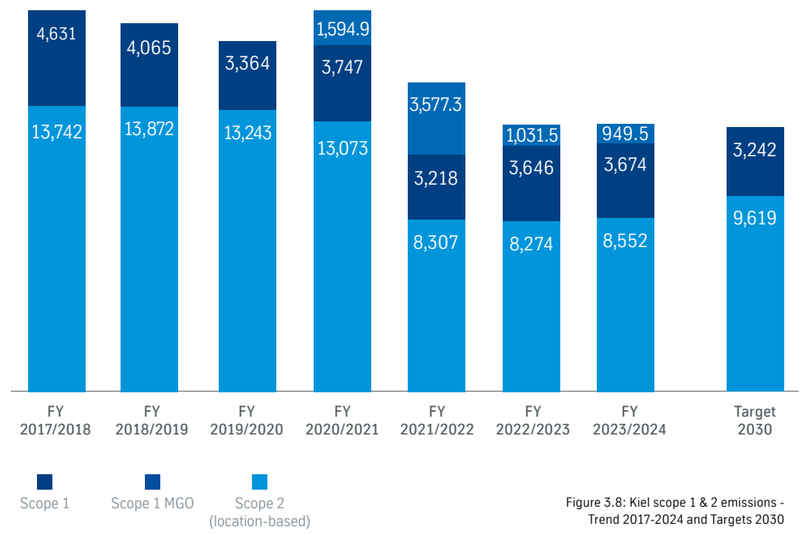


Figure 3.8: Kiel scope 1 & 2 emissions - Trend 2017-2024 and Targets 2030

Scope 3 Emissions

The updated scope 3 assessment in this report covers seven of the 15 categories defined by the GHG Protocol. Compared to the previous reporting period, the "product use" category has been added. Additionally, this year's scope 3 assessment includes six categories for ATLAS ELEKTRONIK. These categories were selected based on their estimated magnitude and the availability of information. A comparison of CO_2 emissions across previous years reveals significant variability in the six previously calculated categories, largely due to the initiation of major shipbuilding projects, which involve substantial procurement of goods and services.

	thyssenkrupp Marine Systems GmbH		ATLAS ELEK-TRONIK GmbH	
Scope 3 Category	FY 2022/2023	FY 2023/2024	FY 2023/2024	Category Definition
	[t CO_2e]		[t CO_2e]	
Upstream Emissions				
Purchased goods and services	20,148.0	44,157.5	57,217.4	All upstream (cradle-to-gate) emissions of purchased goods and services (weight-based and spend-based approach).
Fuel and energy-related activities (related to consumption in scope 1 or scope 2 + purchased ship fuel)	2,899.7	1,934.8	356.3	All upstream emissions of purchased fuels and electricity (extraction, production and transportation).
Upstream transportation and distribution	171.0	575.7	692.2	Transportation and distribution of products purchased from Tier 1 suppliers to gate.
Waste generated in operations	331.3	248.0	47.0	Disposal and treatment of waste generated by the company
Business travel	6,238.0	6,768.5	5,316.6	Employee travel for business-related activities (in non-company vehicles) and including hotel stays.
Downstream Emissions				
Downstream transportation and distribution	2,656.3	2,008.8	65.1	Transport and distribution of sold products including self-delivery of ships. Sea trials are included in scope 1 inventory.
Use of sold products		61,937.3		Ddirect use-phase emissions of sold products over their expected lifetime (i.e. the scope 1 and scope 2 emissions of end users that occur from the use of: products that directly consume energy (fuels or electricity) during use; fuels and feedstocks; and GHGs and products that contain or form GHGs that are emitted during use)
Total	**32,444.2**	**117,630.7**	**63,694.6**	

Table 3.3: GHG Protocol reporting table scope 3 of thyssenkrupp Marine Systems

Comments on assumptions for the calculations:

The calculations for emissions from purchased goods and services are partly based on extrapolated product weights. While these weights may not always be precise, they are intended to represent the average weight of each product category. Additionally, both upstream and downstream transport emissions are calculated using approximate distance estimates.

Share of Scope 3 GHG Emissions in FY 2023/2024 at thyssenkrupp Marine Systems Kiel

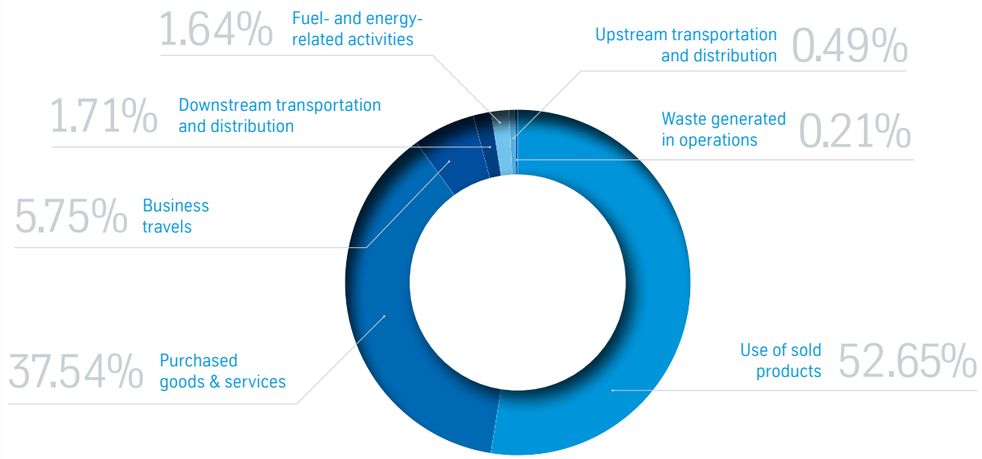


Figure 3.9: Overview of the share of scope 3 GHG emissions per scope 3 category for thyssenkrupp Marine Systems Kiel in FY 2023/2024

The largest portion of scope 3 emissions (~50%) at thyssenkrupp Marine Systems is attributed to the use of sold products (figure 3.9). Emissions from the use of sold vessels are estimated based on contracted specifications, as actual values from military operations are highly confidential. The second largest contributor to scope 3 emissions, accounting for nearly 40%, is purchased goods and services.

Share of Scope 3 GHG Emissions in FY 2023/2024 at ATLAS ELEKTRONIK Bremen

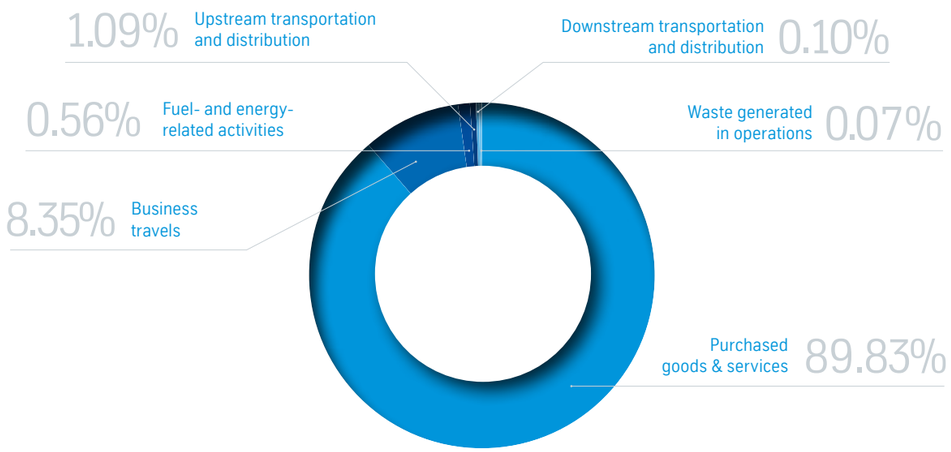


Figure 3.10: Overview of the share of scope 3 GHG emissions per scope 3 category for ATLAS ELEKTRONIK Bremen in FY 2023/2024

By far the largest share of scope 3 emissions at ATLAS ELEKTRONIK in Bremen is due to purchased goods and services (almost 90%, see figure 3.10). Emissions from the use of sold products are negligible, given their estimated scale (as there are no significant energy consumers in the product portfolio).

Similar to scope 1 and scope 2 emissions, thyssenkrupp Marine Systems and ATLAS ELEKTRONIK are responsible for the majority of scope 3 emissions. Other locations are currently excluded due to their low relevance. The largest single contributor is purchased goods and services, representing 55% of total scope 3 emissions.

Purchased Goods and Services for thyssenkrupp Marine Systems GmbH

A significant portion of this financial year's scope 3 emissions arose from the production of purchased goods, as it is typical for a manufacturing company (figure 3.11). Most of these emissions were linked to the purchase of manufactured products, including processed metal products, computers, electronic and optical equipment, machinery, plastic and rubber products, and fabricated metal components. Approximately 20% of emissions in the scope 3.1 category (Purchased Goods and Services) were attributed to services. These service-related emissions were primarily due to engineering, consultancy, research and development, construction, and ICT services (figure 3.12).

> "We need to understand our main sources of greenhouse gas emissions, before knowing where to reduce emissions most efficiently."
>
> ESG Data Manager

Purchased Goods and Services for ATLAS ELEKTRONIK GmbH

This year marks ATLAS ELEKTRONIK GmbH's first evaluation of scope 3 emissions. The largest share of scope 3 emissions comes from purchased goods, primarily electrical equipment (figure 3.13). Significant emissions also arise from the procurement of manufactured goods, chemical products, fabricated metal products, and machinery, including computer, electronic, and optical equipment. A quarter (25%) of scope 3.1 emissions (purchased goods and services) is attributable to services, with ICT services being the largest contributor, followed by construction services, and electricity, gas, and steam services (figure 3.14). Due to the nature of these sources, high variability in the figures is expected.

CO_2e Emissions of Purchased Goods at thyssenkrupp Marine Systems in FY 2023/2024

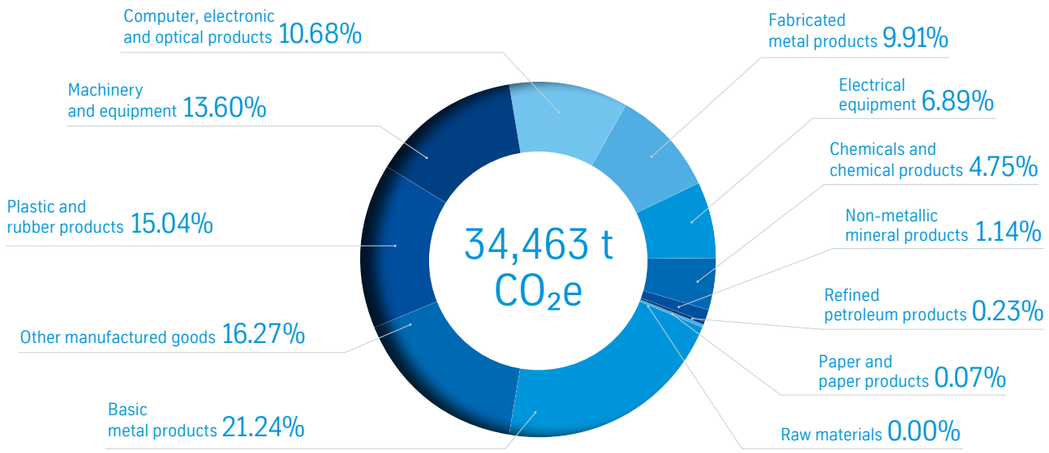


Figure 3.11: Overview of the share of GHG emissions of purchased goods per category for thyssenkrupp Marine Systems in FY 2023/2024

CO_2e Emissions of Purchased Services at thyssenkrupp Marine Systems in FY 2023/2024

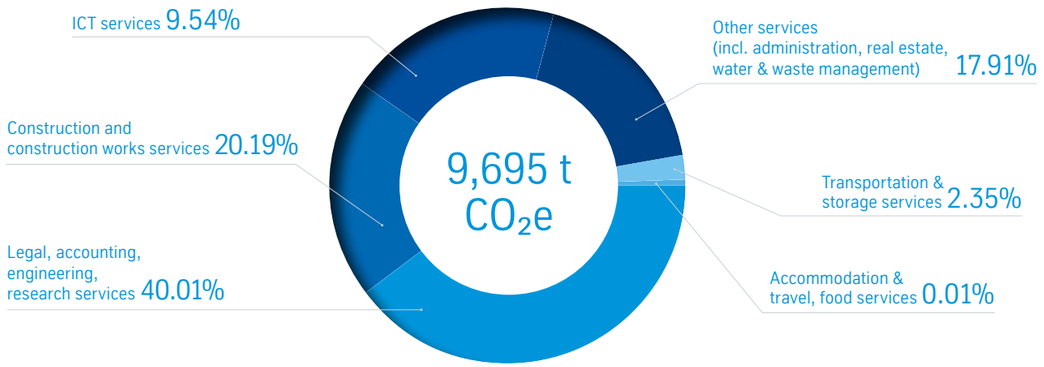


Figure 3.12: Overview of the share of GHG emissions of purchased services per category for thyssenkrupp Marine Systems in FY 2023/2024

CO_2e Emissions of Purchased Goods at ATLAS ELEKTRONIK in FY 2023/2024

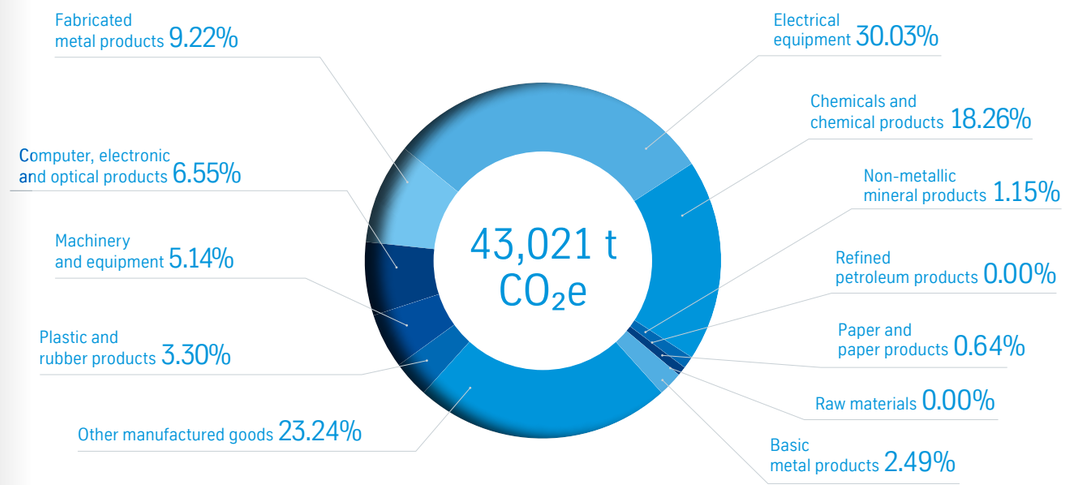


Figure 3.13: Overview of the share of GHG emissions of purchased goods per category for ATLAS ELEKTRONIK in FY 2023/2024

CO_2e Emissions of Purchased Services at ATLAS ELEKTRONIK in FY 2023/2024

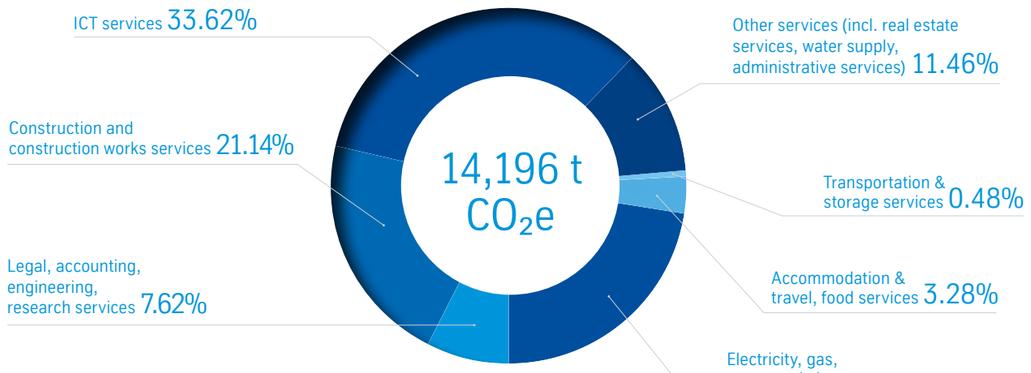


Figure 3.14: Overview of the share of GHG emissions of purchased services per category for ATLAS ELEKTRONIK in FY 2023/2024

Scope 1, 2 & 3 – Summary

Overall, 90% of the company's GHG emissions are generated by Scope 3 activities, highlighting the importance of a structured lever analysis to reduce future climate impact.

	Kiel				Bremen		Business Unit	
	FY 2022/2023 [t CO_2e]	%	FY 2023/2024 [t CO_2e]	%	FY 2023/2024 [t CO_2e]	%	FY 2023/2024 [t CO_2e]	%
Scope 1	4,678*	10	4,623*	3,5	275	0.4	4,968**	2
Scope 2 (location-based)	8,274	18	8,552	6,5	4,599	6.7	15,361**	8
Scope 3 - total	32,444	72	117,631	90	63,695	92.9	181,326***	90
Sum	**45,396**	**100**	**130,806**	**100**	**68,569**	**100**	**201,655**	**100**

*including emissions from sea trials
**from the entire Business Unit Marine Systems
***sum of thyssenkrupp Marine Systems Kiel and ATLAS ELEKTRONIK Bremen

Table 3.4: Summary of the GHG emissions in Kiel, Bremen and the entire Business Unit Marine Systems

GHG intensity per net revenue	Business Unit Marine Systems FY 2023/2024
Location-based [t CO_2e/Monetary Unit]	95,210 tCO_2e/bn. €
Market-based [t CO_2e/Monetary Unit]	90,321 tCO_2e/bn. €

Table 3.5: GHG intensity per net revenue of the Business Unit Marine Systems

Emission Factors

The selection of the emission factor (EF) is crucial for determining the emissions attributed to the reporting company.

Source for EF	Description	Regionality	Link
Customer-specific EF	EF of the supplier (e.g. energy supply company)	-	-
thyssenkrupp Marine Systems-specific EF	Self-modelled EF: Calculation of a (weighted) EF average for specific purchased goods using specific EFs from databases	-	-
GEMIS Version 5.0	Global Emissions Model of Integrated Systems, a German life cycle assessment and material flow analysis tool with public database of IINAS (access via UBA)	Germany	iinas.org
ProBas	The German web portal ProBas (process-orientated basic data for environmental management systems) of the Federal Environment Agency (UBA) is a library for life cycle data.	Germany	probas.umweltbundesamt.de
Informationsblatt CO_2-Faktoren	Emission factor information sheet by the German Federal Ministry for Economic Affairs and Climate Action	Germany	Bafa.de
EU freight modal split	Calculated modal split between the five main transport modes (maritime, road, rail, inland waterways and air) in the total freight transport in the European Union (EU)	EU	ec.europa.eu
ADEME	The French Empreinte® database is the official public database of emission factors and inventory data sets required for carbon accounting exercises by organizations and for environmental labelling of consumer products and services hosted by ADEME.	France	base-empreinte.ademe.fr
IDEMAT 2023 Rev A	IDEMAT (Industrial Design & Engineering MATerials database) is a Dutch compilation of life cycle inventory data of the Sustainable Impact Metrics Foundation, SIMF, a non-profit spin-off of the Delft University of Technology.	Netherlands	openlca.org
UK BEIS / DESNZ /DEFRA	UK government GHG conversion factors for company reporting represent the current official set of UK government conversion factors. Factors used for 2021-2023.	UK	gov.uk
US EPA	The Environmental Protection Agency's (EPA) GHG Emission Factors Hub was designed to provide organizations with a regularly updated and easy-to-use set of default emission factors for organizational greenhouse gas reporting.	US	epa.gov
US EPA	Supply chain GHG emission factors for US industries and commodities 2020, prepared using USEEIO models, which are a life cycle models of goods and services in the US economy	US	Data.gov
IEA	International Energy Agency (IEA) World Energy Outlook: annual GHG emission factors for world countries from electricity and heat generation provided by the IEA (electricity-based emissions only)	Global	Iea.org
International Maritime Organization (IMO)	Fourth Greenhouse Gas Study 2020: GHG emissions of shipping	Global	Imo.org
The Inventory of Carbon and Energy (ICE) Database v3	Circular Ecology offers resource efficiency services, including carbon footprinting, water footprinting, life cycle assessment (LCA), circular economy and general resource efficiency.	Global	circularecology.com
EXIOBASE	EXIOBASE is a spend-based global, detailed multi-regional environmentally extended supply-use table, estimating emissions and resource extractions by industry.	Global	zenodo.org

Table 3.6: List of sources of emission factors

Energy Management and Sources of Energy

Energy management is a powerful tool for tackling climate change and using energy sources responsibly. Accordingly, all main production sites have implemented an energy management system in compliance with ISO 50001. Direct and immediate energy management measures are in place, supported by a long-term energy strategy.

The continuous improvement of energy performance, particularly in the areas of electricity and heating, is reflected in the consumption data presented in figure 3.15. A comprehensive measuring infrastructure, with over 500 measuring points, ensures transparency and supports ongoing improvements in energy use. From 2018 to 2024, these energy efficiency initiatives have resulted in savings of over 6,000 MWh of electricity. Since 2013, the Group-wide Energy Efficiency Programme (GEEP), which includes measurable targets linked to executive compensation, has been systematically driving progress towards climate goals.

The company focuses on high climate impact sectors, as indicated by the following NACE codes, to determine energy intensity per unit of net revenue:

2630: Manufacture of communication equipment
2651: Manufacture of instruments and appliances for measuring, testing and navigation
3011: Building of ships and floating structures
3315: Repair and maintenance of ships and boats
3320: Installation of industrial machinery and equipment

In the financial year 2023/2024, thyssenkrupp Marine Systems' energy consumption amounted to approximately 80.6 terawatt hours (TWh), equivalent to 38.1 TWh/bn. €. When purchasing energy, renewable sources are prioritised wherever possible. All electricity purchased for thyssenkrupp Marine Systems' production sites is sourced from renewables, while energy sources for leased sites depend on the agreements with property owners.

In FY 2023/2024, thyssenkrupp Marine Systems' energy consumption totalled around at 80.6 terawatt hours (TWh).

Energy Consumption and Mix
thyssenkrupp Marine Systems GmbH and ATLAS ELEKTRONIK GmbH

Energy consumption and mix	Business Unit Marine Systems	thyssenkrupp Marine Systems Kiel	ATLAS ELEKTRONIK Bremen	thyssenkrupp Estaleiro Brasil Sul Ltda.
Fuel consumption from coal and coal products [MWh]	0	0	0	0
Fuel consumption from crude oil and petroleum products [MWh]	4,310	2,471	1,059	780
Fuel consumption from natural gas [MWh]	18,895	15,037	0	0
Fuel consumption from other fossil sources [MWh]	0	0	0	0
Consumption of purchased or acquired electricity, heat, steam and cooling from fossil sources [MWh]	28,718	14,112	6,563	3,168
Total fossil energy consumption [MWh]	51,923	31,620	7,622	3,948
Share of fossil sources in total energy consumption [%]	64.40	64.60	43.63	100
Consumption from nuclear sources [MWh]	0	0	0	0
Share of nuclear sources in total energy consumption [%]	0	0	0	0
Fuel consumption for renewable sources, including biomass (also comprising industrial and municipal waste of biologic origin, biogas, renewable hydrogen, etc.) [MWh]	0	0	0	0
Consumption of purchased or acquired electricity, heat, steam and cooling from renewable sources [MWh]	28,501	17,330	9,848	0
The consumption of self-generated non-fuel renewable energy [MWh]	0	0	0	0
Total renewable energy consumption [MWh]	28,501	17,330	9,848	0
Share of renewable sources in total energy consumption [%]	35.35	35.40	56.37	0
Total energy consumption [MWh]	80,627	48,949	17,470	3,948

Table 3.7

Note that in table 3.7, energy carriers that are not applicable are recorded as 0 MWh. Additionally, the data for the last two months of the FY 2023/2024 has been extrapolated using an average from the corresponding months of the previous year. Fluctuations in production capacity during the extended shipbuilding process, along with varying energy demands across manufacturing processes, result in unstable energy consumption levels. Moreover, the production ramp-up at thyssenkrupp Estaleiro Brasil Sul accounts for the significant increase in energy consumption over the past two years.

Energy Consumption at thyssenkrupp Marine Systems in FY 2023/2024

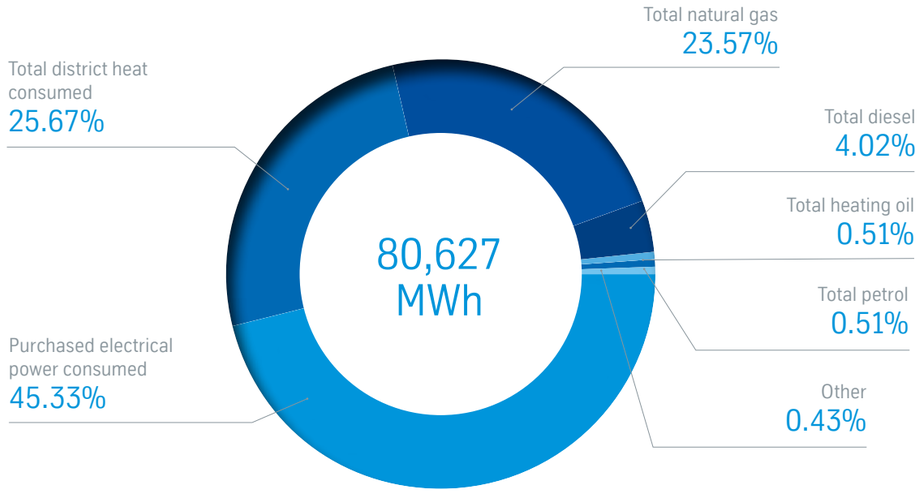


Figure 3.15: Overview of the share of consumption per energy at thyssenkrupp Marine Systems in FY 2023/2024

The largest energy consumers are thyssenkrupp Marine Systems GmbH (60.7%), ATLAS ELEKTRONIK GmbH (21.7%), and thyssenkrupp Estaleiro Brasil Sul Ltda. (4.9%). The shipyard in Kiel, as a primary consumer, uses electricity generated by its own combined heat and power (CHP) unit in addition to purchased renewable electricity. The Sankey diagram in figure 3.16 visualises the energy flows in Kiel.

Sankey Diagram of Energy Use in Kiel

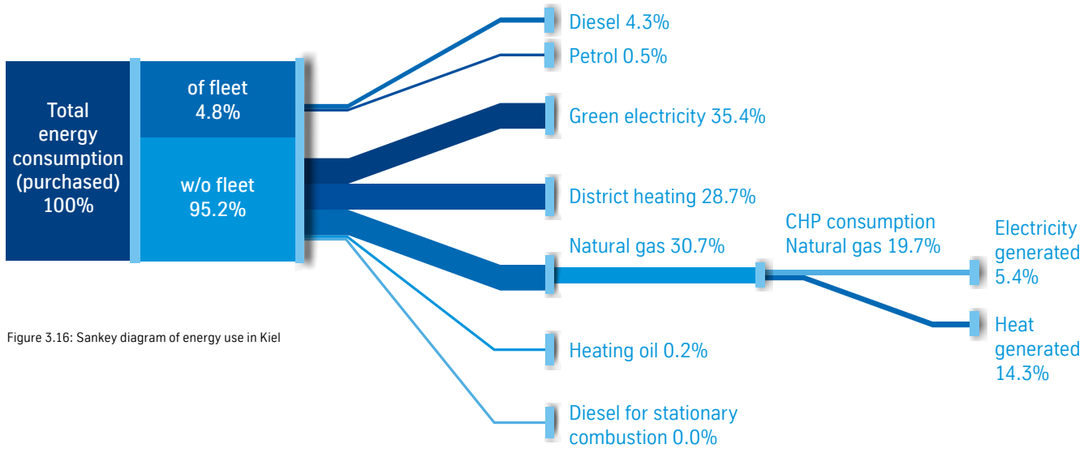


Figure 3.16: Sankey diagram of energy use in Kiel

Energy Reduction Measures by ATLAS ELEKTRONIK GmbH

The following actions have been taken to improve energy efficiency at ATLAS ELEKTRONIK:

- Since 2022, 100% of the purchased electrical power has been based on renewable energy.
- Heat supply in Bremen has been derived from district heating since the early 1990s
- Conventional lighting is being replaced with LED lighting and motion detectors as ongoing measure.
- Centralisation of cold water systems for the building's air conditioning is underway.
- The latest technique are being used for new construction and exchange of air conditioning including heat recovery.
- Building insulation is being modernised in compliance with the building energy efficiency law (GEG).
- Employees have been receiving regular training on energy consumption and environmental awareness since 2014.
- The company's production equipment is being modernised using innovative technologies & digitalization.
- Energy performance certificates exist for all buildings and are updated when changes occur.
- Energy and environmental management have been certified by DIN EN ISO 50001 and DIN EN ISO 14001 since 2014; the next re-certification is planned in 2025.
- Roof renovations include plans to install photovoltaic systems.

In addition to improving energy efficiency, ATLAS ELEKTRONIK is limiting the impact of purchased energy by procuring more renewable energies and entering into power purchase agreements to reduce carbon intensity.

Itajaí Social Seal Program

For the second consecutive year, thyssenkrupp Estaleiro Brasil Sul was certified by the Itajaí City Social Seal program in 2024. The award recognises environmental initiatives carried out by the shipyard, which are in line with the United Nations' Sustainable Development Goals.

One notable example is the Solid Waste Management Program, which aims to minimise waste generation and maximise recycling. In 2023, thyssenkrupp achieved a landfill diversion rate of almost 92%, promoting the reuse, recycling and co-processing of materials. Another successful initiative is the Zero Disposable Cups Project, which replaced disposable cups with reusable options, thereby reducing disposable cup consumption by almost 100%. This effort not only minimized waste but also fostered environmental awareness among employees.

In total, eleven socio-environmental projects by thyssenkrupp Estaleiro Brasil Sul received awards, namely:

Acquatic Biota Program

Zero Disposable Cups Project

Implementation of ISO Standards

Estuarine Water Quality

Electricity Purchase

Liquid Effluent Treatment

Air Quality

Forest Management

Groundwater Quality

Solid Waste Management

Environmental Education Program

Pollution Prevention


photo: dent/pixabay

The reduction and avoidance of environmental pollution in times of climate change and biodiversity loss is of utmost importance in the manufacturing business. Policies and measures are defined to avoid pollution and the assessment of pollution levels (excl. GHG) in air, water, and soil (including microplastics) and the amounts of substances of concern (SOC) and of very high concern (SVHC) needs to be carried out meticulously.

Measures to be actively involved in environmental protection and prevent environmental pollution include:

- Collaborations with authorities and institutions
- Support of environmental-friendly constructions of the company's own plants and installations, processes and actions
- Analysis and surveillance of the compliance of laws and regulations
- Continuous improvement of the environmental management systems and environmental efforts
- Communication and training of environmental-relevant aspects
- Regular internal environmental management audits and assessments of environmental reports

One central part of the environmental management system is the analysis of environmental aspects. This helps to discover and comprehend relevant environmental aspects, prepare the risk management and guarantees to apply necessary actions accordingly. Additionally, success controls and potential corrections are applied to the measures.

Environmental aspects include emissions, wastewater, waste, consumption of resources and energy. The impacts of the business unit on these environmental aspects are analysed and evaluated. If required, measures are proactively taken into account to secure prevention of the environment. These processes involve intended and not-intended operating conditions as well as foreseeable emergency situations.

In the upcoming FY 2024/2025, the target is to evaluate measurement techniques and collect available data in terms of the emissions of pollutants into air, water and soil in respect to the ESRS E2 requirements. The result of this assessment will help to define future targets in the field of pollution prevention and avoidance.

"Our policy is to prevent pollution of any kind. Structured analysis of environmental impacts, a coordinated waste management and a strict management of hazardous substances support this goal."

Environmental Manager

thyssenkrupp

ATLAS ELEKTRONIK

Prevention Measures of Environmental Pollution by **thyssenkrupp Marine Systems**

- DIN EN ISO 50001 certified energy management since 2016
- DIN EN ISO 14001 certified environmental management since 2016
- Implementation of representative functions in the areas of environmental and energy management within the company
- Regular exchanges with the management concerning topics related to environment and energy
- Environmental and energy policy
- Internal and external audits in the area of environmental and energy management
- Regular assessments of binding commitments regarding environment and energy
- Evaluation of risks concerning environment and energy
- Integration of the environmental management into legal environmental approval procedures and coordination with relevant authorities
- Evaluation of environmental and energy aspects
- Active planning/pursuing/implementation of environmental and energy measures
- Communication of environmental- and energy-related topics at different levels in the company
- Participation at the program of the group of companies in order to reduce greenhouse gas emissions and improve the energy efficiency
- Consideration of environment and energy in the supply chain management
- Implementation of hazardous substances management
- Continuous improvement of plants and facilities (incl. buildings) concerning water protection, pollution control and energy efficiency
- Holding own factory fire department (24/7) in order to prevent and dam up the extent of a damage in case of an environmental pollution
- Consideration of environmental and energy issues in the context of structural, civil and hydraulic engineering as well as renovation construction measures
- Securing the dry dock by shipyard's wastewater treatment plant

Prevention Measures of Environmental Pollution by **ATLAS ELEKTRONIK**

- Certified energy and environmental management by DIN EN ISO 50001 and DIN EN ISO 14001 since 2014
- CO_2 reduction by using green electricity
- Sensitization of employees concerning energy consumption and environmental aspects in the form of regular trainings since 2014
- Annual external environmental protection inspections
- Internal audits within the energy and environmental management
- Member of the Partnerschaft Umwelt Unternehmen (PUU) in Bremen since 2003. PUU is a network for companies to exchange on environmental issues.
- Digital legal cadastre for the surveillance, implementation and compliance of all laws and changes of laws
- Development of environmental KPIs in order to continuously improve the surveillance
- Separation and documentation of waste based on the law of the circular economy
- No groundwater withdrawals and no water wastewater discharge into open waters or groundwater
- No emissions of reportable pollutants into air and soil
- Centrally digitalized cadastre for hazardous substances in order to assess all hazardous substances in the company

Management of Water and Marine Resources

In many regions of the world, increasing water demand as well as the effects of climate change are leading to overuse of water resources. As a result, industrial water management is crucial for protecting the environment, nature, and the local population. For thyssenkrupp Marine Systems in particular, close attention is paid to water use and the risk of water pollution at the design, production and end-of-life management stages.

Efficient use of water resources, through technical and structural measures, is key. Freshwater is primarily used for sanitation and production needs, such as tank integrity tests, cooling and heating, and industrial cleaning. Compliance with hygiene and environmental regulations, in close cooperation with local authorities, is essential.

In FY 2023/2024, thyssenkrupp Marine Systems' total water consumption was 219,346 m³ (FY 2022/2023: 179,387 m³). The main consumers were thyssenkrupp Marine Systems GmbH, ATLAS ELEKTRONIK GmbH, and thyssenkrupp Estaleiro Brasil Sul Ltda.

Sustainable water management at thyssenkrupp Marine Systems aims to prevent water contamination, thereby protecting the environment from water hazards. This is of great importance as many substances used in production are hazardous to water.

thyssenkrupp Marine Systems categorises substances and mixtures used according to their hazard class, and ensures that these water-polluting substances are handled appropriately. Wastewater is strictly monitored to ensure that it meets applicable laws and regulations. Internal audits, as well as checks by local authorities, are conducted to ensure compliance with guidelines.

Another important aspect of the company's sustainable water management is continuous monitoring, analysis and implementation of improvement measures. These measures include constant monitoring and operational control of water supply and drainage networks, as well as sampling and laboratory analysis to monitor and evaluate the quality of discharges at specific points in shipyards.

In accordance with the local law and authorities, industrial, sanitation and rainwater discharges are disposed of via the public wastewater network or into surface water.

To further improve sustainable water management, the following measures have been implemented:

Preventing of pollution:
- Installation of an oil barrier system, including leakage prevention for vessels during shipyard lay days
- Modernisation of wastewater treatment plant for dry docks
- Modernisation of grease separator for canteen
- Modernisation of filling station (heating oil and diesel)
- Improvement works to water supply and drainage network systems
- Inspections and upgrades of hazardous substances warehouses for water protection

Reduction of freshwater:
- Installation of chiller units operating in closed-circuit system to cool submarine systems during dockyard periods
- Installation of water-saving sensors on water taps

Raising awareness:
- Regular information sessions for employees on environment protection and saving energy

Freshwater Consumption and Wastewater Production [m³] in FY 2023/2024

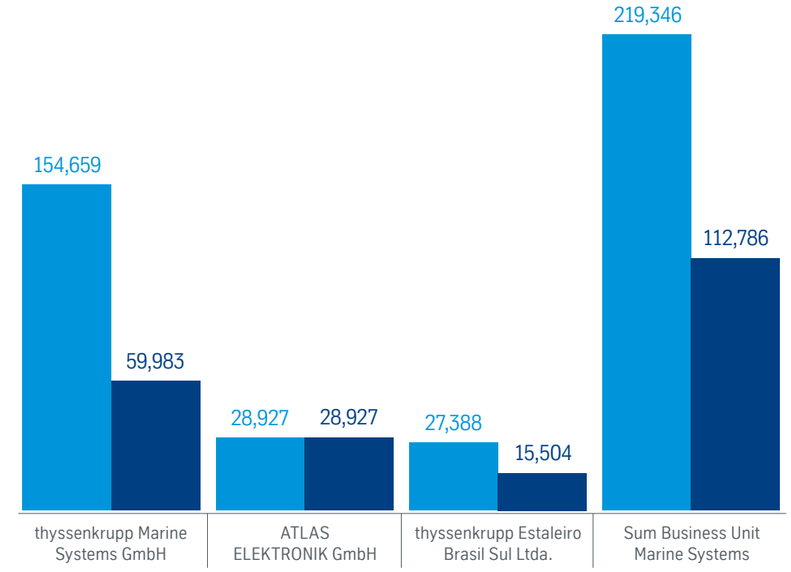


Figure 3.17: Overview of freshwater consumption and wastewater production in the FY 2023/2024

Freshwater Consumption and Wastewater Production [m³] in FY 2023/2024

	Freshwater Consumption [m³]			Wastewater Production [m³]		
	FY 2022/2023	FY 2023/2024	Change	FY 2022/2023	FY 2023/2024	Change
thyssenkrupp Marine Systems GmbH	100,568	154,659	54%	55,983	59,983	7%
ATLAS ELEKTRONIK GmbH	35,950	28,927	-20%	35,950	28,927	-20%
thyssenkrupp Estaleiro Brasil Sul Ltda.	35,514	27,388	-23%	9,144	15,504	70%
ATLAS ELEKTRONIK UK Ltd.	6,969	6,969	0%	6,969	6,969	0%
Other sites	1,386	7,676	454%	1,386	7,676	454%
Business Unit thyssenkrupp Marine Systems	179,387	219,346	22%	108,432	112,786	4%

Table 3.8

Resource Use, Waste Management and Circular Economy

Conservation of resources and thereby the protection of the people and environment, is executed by avoiding waste. Therefore, the first priority is to minimize the waste production as much as possible. The second priority is to recycle waste instead of removing it.

Precise working methods, optimised processes for obtaining components from a raw material or the conscious use of commodities such as paper or packaging materials help to avoid waste from the very beginning. Yet, for a shipbuilding company, avoiding waste remains a major challenge. Finding the right balance between avoiding waste and the expense of quality, products or occupational health and safety is key and cannot be neglected. thyssenkrupp Marine Systems' products are designed and developed for a long life cycle. Furthermore, the company provides services for refit and the modernization of existing vessels to extend the products' life cycles. These are important measures in terms of avoiding waste.

The separation of waste determines the further procedure and the life cycle of the waste. thyssenkrupp Marine Systems and ATLAS ELEKTRONIK focus on proper separation and delivery of waste materials to the disposal companies. Measures to achieve this include:

- Continuous employee training to properly dispose waste
- Providing different types of waste containers
- Inspecting waste containers
- Monitoring waste types
- Documenting the waste containers which leave the shipyard, identifying the transporter, receiver, waste type, weight, and final destination technology

Several measures are on-going in all sites in order to reduce waste in daily routines such as the canteen or the offices.

In total, 93% of the waste produced within the business unit is recovered and recycled (see figure 3.18). The following table 3.9 shows the waste generation and recycling rates for the whole business unit as well as the main production units.

"93% of the waste is reovered or recycled. And we are still improving our waste separation at our locations to enable a higher recycling rate."

Waste Manager

Total Waste [t] and Recycling Rate [%] FY 2023/2024

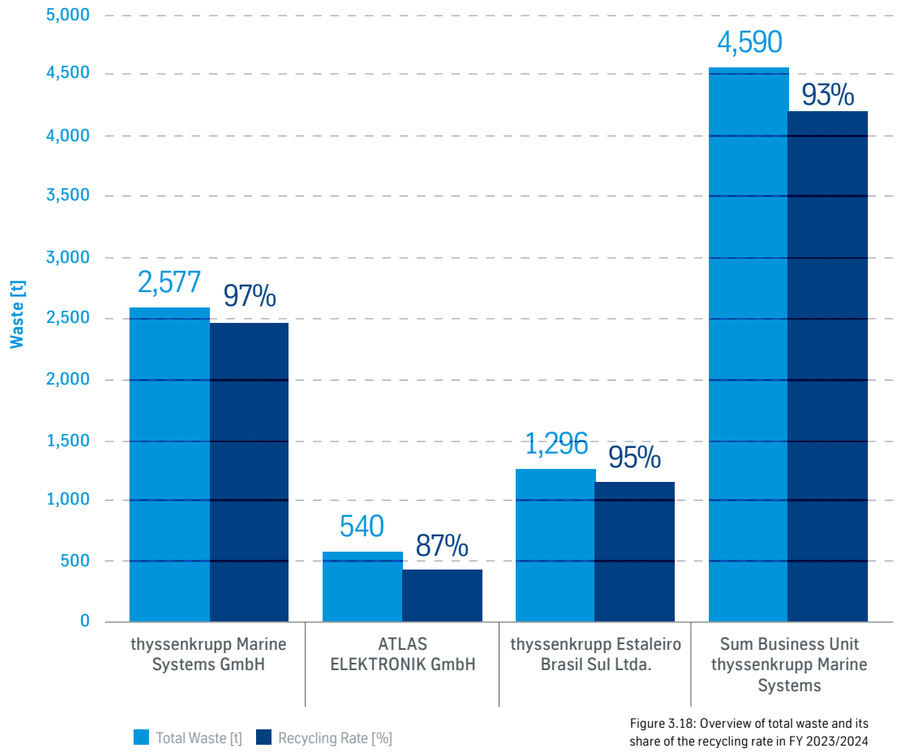


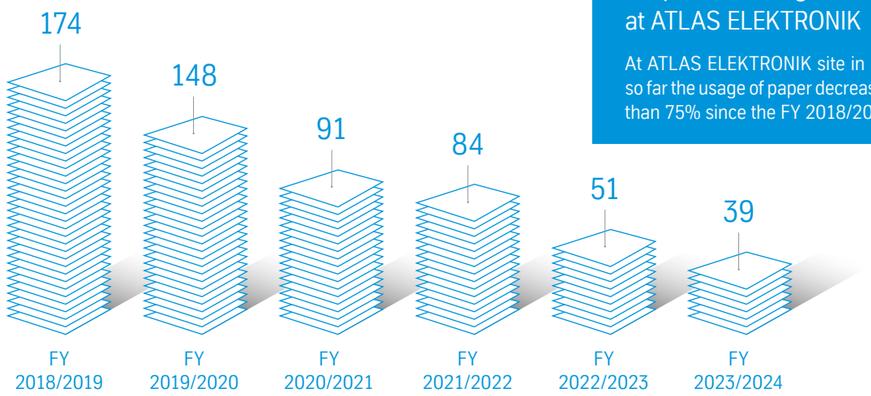
Figure 3.18: Overview of total waste and its share of the recycling rate in FY 2023/2024

	Unit	thyssenkrupp Marine Systems GmbH	ATLAS ELEKTRONIK GmbH	thyssenkrupp Estaleiro Brasil Sul Ltda.	Business Unit thyssenkrupp Marine Systems
Total waste	t	2,577	540	1,296	4,590
Total waste FY 2022/2023	t	3,451	401	638	4,709
Total waste for recycling*	t	2,494	469	1,226	4,281
- Non-hazardous waste for recycling*	t	1,754	438	1,177	3,460
- Hazardous waste for recycling*	t	740	31	49	821
Total waste for disposal	t	82	71	70	309
- Non-hazardous waste for disposal	t	25	33	70	208
- Hazardous waste for disposal	t	57	38	0	101
Share of recycled waste*	%	97%	87%	95%	93%

Table 3.9

*including thermal recycling

Paper m²/Employee



Responsible Usage of Paper at ATLAS ELEKTRONIK

At ATLAS ELEKTRONIK site in Bremen, so far the usage of paper decreased more than 75% since the FY 2018/2019.

Improving Solid Waste Management at thyssenkrupp Estaleiro Brasil Sul Ltda.

The introduction of a bio digester treats waste generated in the cafeteria. The bio digester works by breaking down organic compounds from food, transforming them into liquid effluent, which is then sent to the on-site effluent treatment plant. The benefits of using a bio digester include:

- Reducing landfill use
- Reducing costs
- Reducing GHG emissions
- Reducing pest attraction
- Providing a clean and ecological solution

Results for the year:

29,244.49
Total digested
Organic waste processed by the equipment.

203.09
Digestion Average/day
Organic waste processed by the Bioconverter.

20,506.24
Litres of diesel oil Equivalent reduction in consumption of barrels of oil.

10.65
Vehicles Equivalence of urban vehicles taken out of circulation.

20,489.18
Liters Equivalent reduction in gasoline consumption.

46,390.54
$KgCO_2v$ equivalent Equivalent elimination of CO_2 emissions into the atmosphere.

52.64
m^3 Organic waste Reduction in organic waste sent to landfill.

It is not only about doing good on your own, it is about doing better together.

Environmental Education Program at thyssenkrupp Estaleiro Brasil Sul Ltda.

This Environmental Education Program raises awareness for environmental protection within the local community. Each month, different topics related to environmental protection are addressed, and in 2024, the program was extended to schools near the shipyard. Currently, three schools are involved, receiving talks on environmental protection. In the future, further projects with schools are planned, such as the implementation of a vegetable garden and a waste management program.

Digitalisation in production enables further reduction of waste. At the shipyard in Brazil, vessels are already being produced paperless.

Noise Management

In the harbour of Kiel, the shipyard is located centrally in a well-populated area and therefore, business activities can be challenging with a neighbourhood of residential area. Activities such as shipbuilding works, material transportation, machinery, sand blasting create ambient noise. The attempt is to keep ambient noise at a minimum stage and in recent years, no neighbourhood complaints arose.

The measures involve the prevention of noise during construction of new factory buildings. The same applies for major alternation of existing installations or factory plants. Therefore, the close cooperation with local authorities in accordance with the German Federal Immission Control Act is mandatory. Additionally, minimizing noise is important in order to offer employees a safe workplace in terms of occupational safety and health.

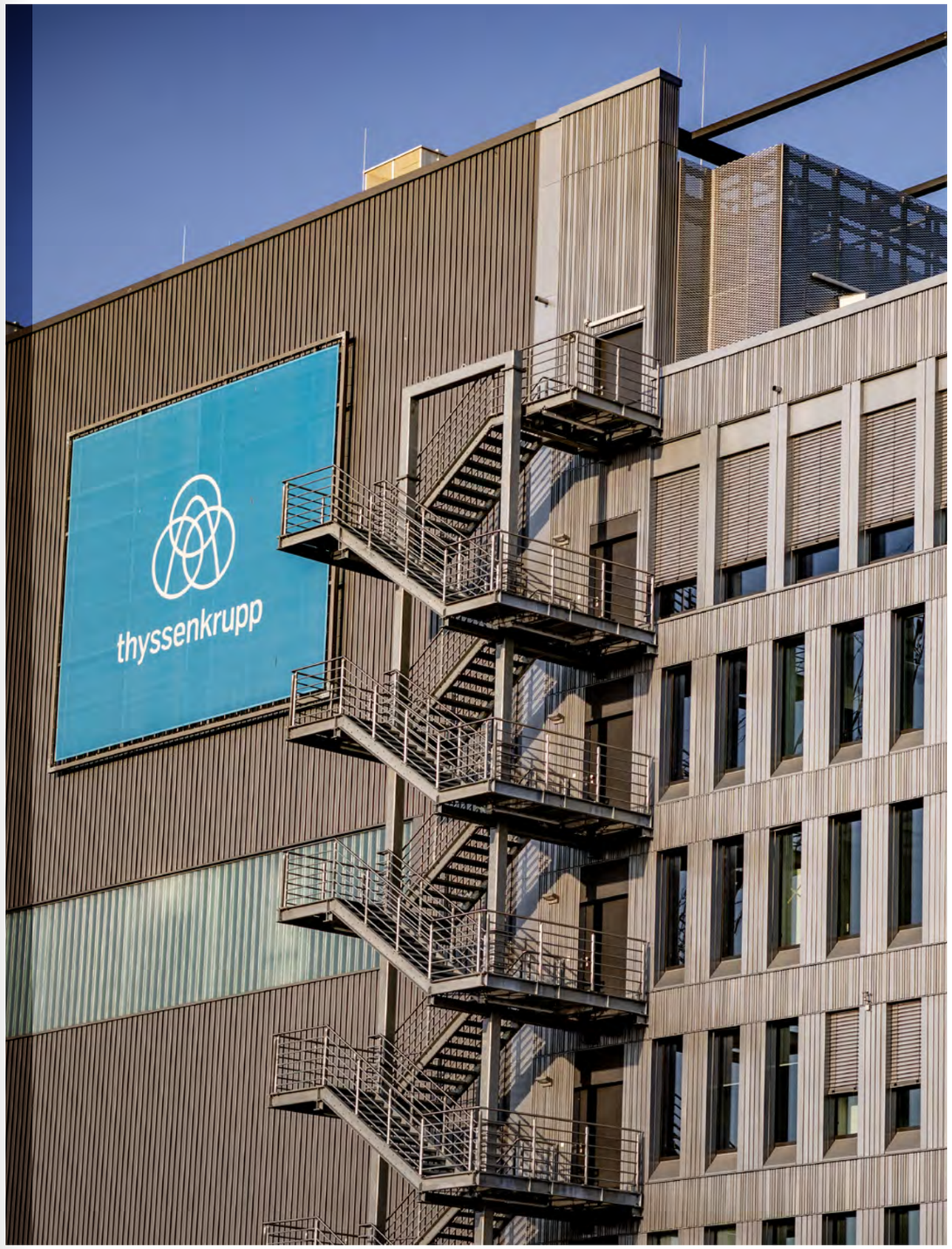
As stated already above, the material assessment did not conclude that biodiversity is material for thyssenkrupp Marine Systems. Nevertheless, the company's aim is to interfere the least as possible with the environment in order to protect biodiversity. Noise management is a key parameter to preserve biodiversity and avoid disturbing any living beings. While the shipyard itself tries to keep its noise at a minimum, also the products themselves are built to be as silent as possible. It is in the nature of military vessels (surface and under water vessels) to be silent in order to increase the difficulty of detection by hostile encounters. This essential property helps to prevent disturbing the marine living beings such as porpoises, which live in the Kiel Bay.

Further measures to improve noise emissions:

- Reducing activities during night time to a minimum
- Consideration of potential noise emissions in the technical design phase of factory building
- Demand-based noise impact assessment and noise measurements

"Operating in densly populated areas requires considerateness. Our shipyards are called upon keeping a low level noise as well as our products aim to be nearly inaudible."

Head of Production Infrastructure



People and Values

4

thyssenkrupp Marine Systems is part of society and its social environment. Actions have an impact on their own employees, the people who are working in the value chain, the partner organizations and not to forget national and international customers. The company's target is to live up to this manifold responsibility as a reliable partner. Through a value-oriented approach, a contribution to the positive development of the society shall be made with the overall aim to create a future worth living.

Employees, whether in the own company or along the value chain, are the most important asset. Without their contribution, no submarines and naval vessels would be build or developed, nor would innovative sonar technologies and sustainable products be produced to enter the market. Offering long-term, secure employment as one of Europe's largest employers in the maritime industry is part of the value-based approach. This includes in particular the commitment of suppliers and partners to comply with the Supplier Code of Conduct.

Learn more about the many initiatives to promote fair working conditions, occupational health and safety, diversity and inclusion within thyssenkrupp Marine Systems in this chapter.

"The driving forces behind our innovative energy are the employees, who shape the future of the company with passion and commitment."

CHRO

Own Workforce

Value creation is built on people being able to do their dedicated work in a safe and secure environment. The policy framework covers a variety of aspects to actively promote fair working conditions. The thyssenkrupp Marine Systems group offers secure employment with a high coverage by collective agreements. Working time is limited at 35 hours a week and collective agreements take into account a compensation for overtime. By the implementation of an internal wage control committee the company secures adequate wages. Work councils are established at all German locations and consultation and participation are important values in the democratic company culture. Company agreements for the topics working hours, shift working, prevention of addictions and more are in place.

"We are trusting in our employees, and with our binding policies and active promotion of fair working conditions we want to create a safe and secure working environment for each and every person that creates the value of our company."

Head of People & Culture

Accident Frequency Rate

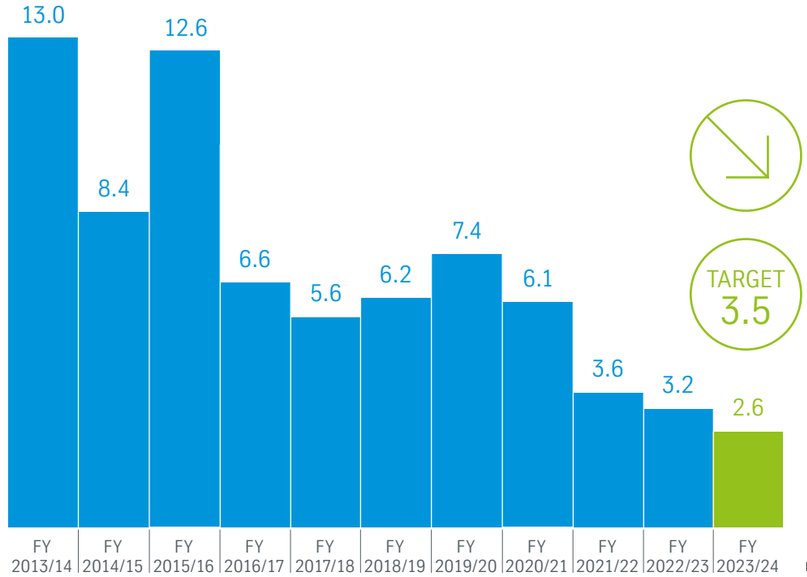


Figure 4.1

The target of an accident frequency rate of 3.5 was clearly exceeded at 2.6. This is the lowest value since being part of thyssenkrupp AG.

Health and Safety in Workplace and Workers' Rights

Every accident is one too many – the zero accident policy has been followed for numerous years now and it is based on the preventability of accidents. Good health and safety performance supports efficient production and a healthy working environment. thyssenkrupp Marine Systems achieved further reduction of the accident frequency rate to 2.6 in FY 2023/2024 (FY 2022/2023: 3.2). The target for FY 2024/2025 is set to 2.7. The accident frequency rate is the rolling average of lost time in accidents rate (accidents with at least one lost working day per 1,000,000 working hours completed).

Reactive occupational health and safety (OSH) response

The organization is learning with every accident and incident providing insights into areas and processes that can be enhanced. Behavioural patterns, environmental influences and hazards to people are documented in a mandatory comprehensive accident analysis during every incident. The results are taken into account to achieve response effectiveness. This way, teams are enabled to focus prerequisites for health and safety in the workplace.

Preventive occupational health and safety (OSH)

Preventive OSH is linked to company culture and to changing attitudes and behaviour. The occupational safety specialists and managers are required to pay particular attention to the topic in all of their activities. From daily 15-minute- awareness trainings in the production area to the continuous detection of unsafe actions and conditions during inspection rounds, this topic is deeply integrated into the daily rhythm of each employee.

Managers, employees, specialist and works councils, management and skilled workers form a community of responsibility in the area of OSH, sharing the goal of injury-free and healthy workplaces on the premises and on board of the product. Through cooperation in selection, instruction and inspection as well as by the joint definition of standards and procedures in the contractor management system, the risk of serious or fatal accidents is comprehensively minimized. thyssenkrupp Marine Systems is proud to have completed the FY 2023/2024 without any serious or fatal accidents. 33 accidents with following absence have been listed for the reporting period.

Safety GEMBA Walk

The term "GEMBA" is derived from Japanese and refers to a place where things happen. In a company, it refers to the central place where value is created – i.e. the workplace.
Safety GEMBA Walks at thyssenkrupp Marine Systems are visits by top managers aimed at engaging in an informal dialogue with employees and raising awareness for safety issues. Besides OSH, employees may address any topics of concern in relation to their work and workplace.
These walks are not only about safety checks, but are also an opportunity to understand employees' perspectives and to show appreciation. They are crucial to the sustainable development of corporate culture at thyssenkrupp Marine Systems.

"Three years in a row we were able to reduce the accident frequency rate to the lowest rates ever. This shows the effectiveness of our OSH management."

Head of OSH

Quality of life at work

The health rate of an organization is an indicator for a healthy working environment. thyssenkrupp Marine Systems continuously achieves highest health rates with a sustainable and strategic health management. The number of absences decreased and the health rate in FY 2023/2024 is on average 95,2 %. Among the company's information and prevention policy, a variety of health promotion measures took place on sites all over the world. The measures focused on healthy exercise, nutrition, addiction, stress management as well as the topic of "healthy leadership" on site. Very popular by the employees were the medical screenings for skin or colon cancer prevention and the "Hansefit" exercise programme. 400 employees participated in the skin cancer screening and 1,708 did a preventive screening for colon cancer.
Mental health is of equal importance as the physical health. 98% of the workforce has had and still has access to an Employee Assistance Programme, a confidential counselling service provided by external psychologists, physicians and educators. The resilience of the individual is yet considered the most important factor in being able to deal with external stress. In cooperation with numerous health insurance companies, thyssenkrupp Marine Systems has developed a comprehensive resilience offering to support employees at all levels and across all units. Furthermore, a dedicated program for healthy leadership has been started in September 2024 to upskill leaders.

Health Days at ATLAS ELEKTRONIK in Bremen

In May 2024, employees in Bremen had the opportunity to undergo a cardiovascular risk assessment with the occupational physician. After completing a general risk questionnaire, health indicators like blood glucose, blood pressure and body mass index were measured. The results were then analysed with a doctor and recommendations for individual improvements were identified.

Sports at thyssenkrupp Marine Systems

Doing sports together not only boosts health but also strengthens team cohesion. Many activities followed this spirit in FY 2023/2024 with a great number of employees taking part in sport events, including a dragon boat race, activity challenges, business runs, and beach volleyball.

Achievements included:
- 2nd place in the dragon boat race in Kiel
- 234 employees running in Bremen's B2Run
- 81,064,777 steps during the activity challenge

Health Rate at Business Unit Marine Systems

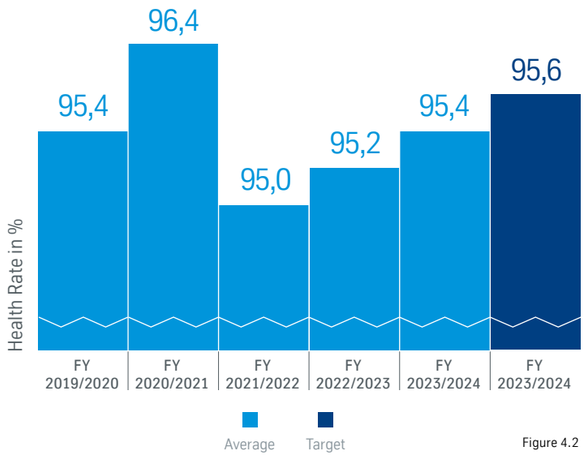


Figure 4.2

Diversity, Inclusion and Equity

The hashtag #greyiscolorful (#grauistbunt) illustrates the aim to promote diversity in age, origin, sexual orientation and inclusion across all sites. A holistic view of diversity is shown in an action plan that engages leadership and employees on all levels by e.g. events and awareness trainings.

Gender equity

Attracting more women to take over leadership positions is one of the main targets to achieve gender equity. In 2025 the company wants to achieve: 16% of management positions shall be held by women and 20% of all employees shall be female. In FY 2023/2024, the overall share of women was 17%, and 9.2% of the leadership positions were held by women.

The establishment of the company-wide women's network to empower women in the organization resulted in many networking opportunities and joined lunch breaks to strengthen women and motivate each other.

Further activities during FY 2023/2024 were:

- Empowering Network: first implementation of measures like shared leadership by the company-wide women's network to empower women in the organization
- Women's profiles in regional media: the profile focus on the different career paths of women in the company, which should inspire more external women to pursue a career path with thyssenkrupp Marine Systems
- Awareness training as e-learning for all employees

Cultural, social, and age diversity

Diversity is seen as a key to success. To promote diversity in age, origin, social background and gender, various activities activities shaped the FY 2023/2024:

Race or Ethnicity: International Day for the Elimination of Racial Discrimination
Signs against racism have been installed at the entrances of every location for many years. This year's international day against racism has been used to gain awareness with photographs of employees in front of these signs. Accompanied with an internal news on the company's values, thyssenkrupp Marine Systems marked a sign against racism. Benches designed to raise awareness have been built by apprentices, read more on this on the next page.

Gender Diversity: German Diversity Day
Employees were offered experiences for all five senses (smell, see, hear, taste, and feel) as a show case for variety.

Age Diversity: International Day of Tolerance
Employees have been informed on the Implicit Association Test (IAT) to test one's own tolerance towards other generations and the meaning of age diversity.

Inclusion: International Day of People with Disabilities
Special education students from schools in Kiel had the opportunity to visit the shipyard and to get to know the training department. Furthermore, additional events with special needs schools have been planned, as an example the coffee tasting organised together with the Ellerbeker School (see next page).

"Diversity and inclusion, which are the real grounds for creativity, must remain at the center of what we do."

Marco Bizzarri

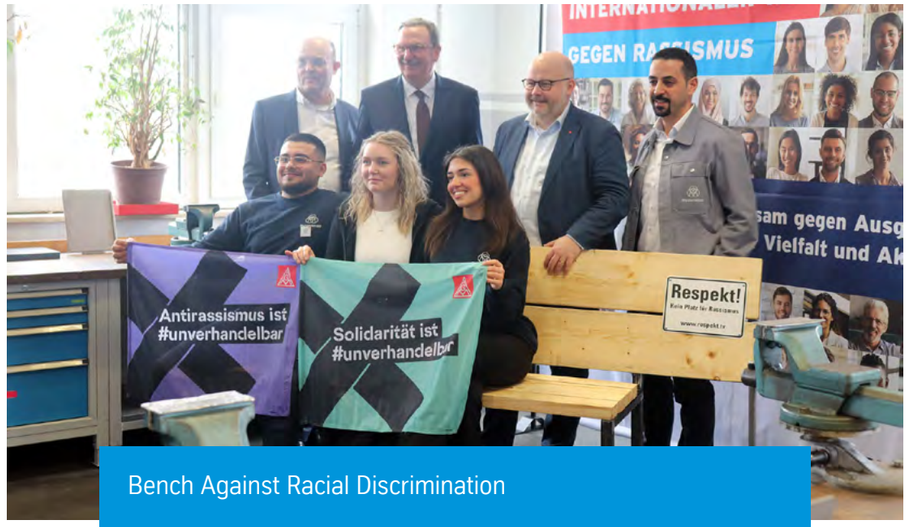
	Employees with disabilities in Germany
Male	226
Female	60
Sum	286
%	4.50%

Age	Employees
< 30	1,558
30-50	3,884
> 50	2,599

Table 4.1

Cooperation with the School of Ellerbek - Support Center for Intellectual Development

During Kiel Week 2024, one of the largest sailing events in the world, a representative of thyssenkrupp Marine Systems met with the coordinator of Ellerbeker Schule – Förderzentrum geistiger Entwicklung, a nearby school for children and young people with intellectual disabilities. In 2023, a class from the school visited the vocational training workshop of thyssenkrupp Marine Systems.
The school runs a coffee tasting group where pupils with mental disabilities offer coffee tastings and sell coffee beans roasted in Kiel. To help pupils develop their skills and promote interaction with thyssenkrupp Marine Systems employees, the group was invited to the shipyard for a coffee tasting event. It was a great success and it will be run three to four times a year. thyssenkrupp Marine Systems will cooperate with the school and aims to provide external workplaces, internships and vocational training.



Bench Against Racial Discrimination

On the International Day for the Elimination of Racial Discrimination, NORDMETALL, IG Metall, and thyssenkrupp Marine Systems launched a joint project to demonstrate their commitment to combat racism. At the shipyard in Kiel, a group of apprentices built a bench with a backrest longer on one side than the seat, making it impossible to sit on it. Instead, there is a sign on the backrest calling for respect and stating that there is no place for racism.

To further raise awareness and to show that there is no place for racism at thyssenkrupp Marine Systems, more of these benches will be built as part of an apprentice and dual study project, with around 30 additional benches to be built and placed at the shipyard in Kiel.

Recruitment and Human Resources Management

Highly trained and skilled employees are a cornerstone to the maritime powerhouse of thyssenkrupp Marine Systems. Becoming the leading partner for maritime security and the provision of complex integrated systems solutions requires a long-term human resources strategy. The competences required to fulfil future programs need to be addressed clearly and a planning of recruitment, training, engagement and career development has to be derived accordingly. Therefore, the necessary skills for a successful business and growth worldwide are ensured.

Human Resources in a growing business environment

Showing continuous growth in FY 2023/2024, the own workforce increased by 296 people, which represents a growth rate of 3.8%. Attracting more young talents helped to decrease average age to 42.9 years (-0.5%) compared to the previous year (FY 2022/2023: 43.1 years). Promoting diversity shows first successes with 368 additional women hired worldwide in FY 2023/2024.

Region	Average age
International	40.3
Germany	43.6
Business Unit Marine Systems	42.9

Table 4.2

Education and science as a driver to attract young talents

With authenticity, understanding of target groups and digital strategies in today's recruiting environment, thyssenkrupp Marine Systems' recruiter attract the best talents for the growing company. The recruiting team uses university marketing amongst others to stand out from the crowd in a tough competition for skilled talents. The recruiting team visits around 70 trade fairs, schools and universities every year. Employed engineers and technology managers engage with the recruiters to adapt degree programs together with universities in order to meet future needs of the maritime industry. They address new requirements in an evolving industry and help the universities to develop strong, purpose-oriented study programs for future professionals. 33 dual students started their journey at thyssenkrupp Marine Systems in the reporting period, increasing the number of dual students to 107 at the end of FY 2023/2024. In total, 250 apprentices, dual students and working students joined thyssenkrupp Marine Systems in FY 2023/2024.

53 FEMALE APPRENTICES IN GERMANY 18.3%

250 HIRINGS IN 2024
(147 APPRENTICES AND DUAL STUDENTS / 103 WORKING STUDENTS AND INTERNS)

Involvement and Upskilling of Employees

The modern working environment is heavily influenced by digitalisation, new ways of working, and an increasing demand for agility and flexibility. Evolving customer needs drive necessary transformations, making the strengthening of management and leadership skills essential to meeting both company and customer expectations. Effective leadership also considers individual development paths, achieved through on-the-job experience, as well as internal and external training programmes.

The Learning & Development Department, with its state-of-the-art facilities known as the "Learning Factory," offers a diverse range of digital and on-site training options. These include modern working methods such as augmented reality in production, and coaching for managers, suppliers, and external craftsmen. The department also provides modular, practical stations for training in digitisation and lean management, continuously evolving its offerings to prepare employees for future demands.

In addition to an established mentoring programme that facilitates knowledge transfer and personal development, a comprehensive programme for new leaders was introduced last fiscal year. This initiative supports emerging leaders in tackling the challenges of modern leadership while strengthening their teams.

The company also successfully concluded its recently launched talent programme, initiated two years ago to identify and develop high-potential employees across various departments. This programme has provided participants with targeted training and development opportunities, enabling them to assume greater responsibilities and advance their careers within the organisation. The 2023 cohort of talent programme participants are entering the final year of their journey and have received certificates for completing the first phase.

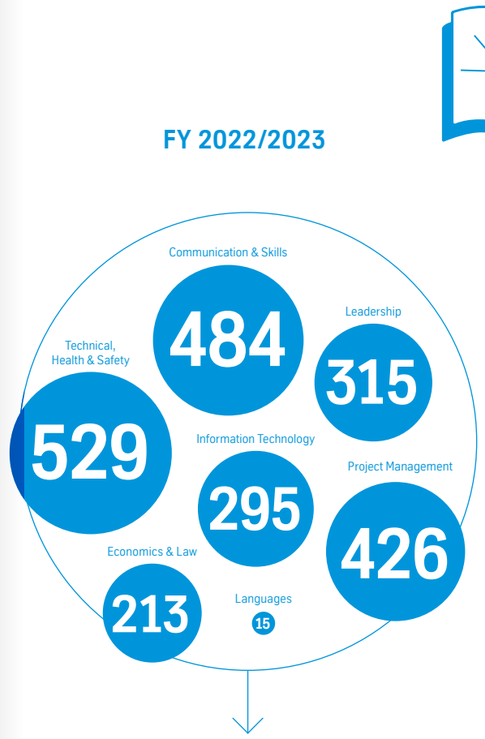
A comprehensive feedback campaign was introduced to motivate employees to actively and constructively integrate feedback into their daily work. This initiative aims to foster an open feedback culture, encouraging employees to view feedback as a valuable tool for personal and collective growth. Feedback is increasingly recognised as a resource that drives continuous improvement in workplace relationships and processes.

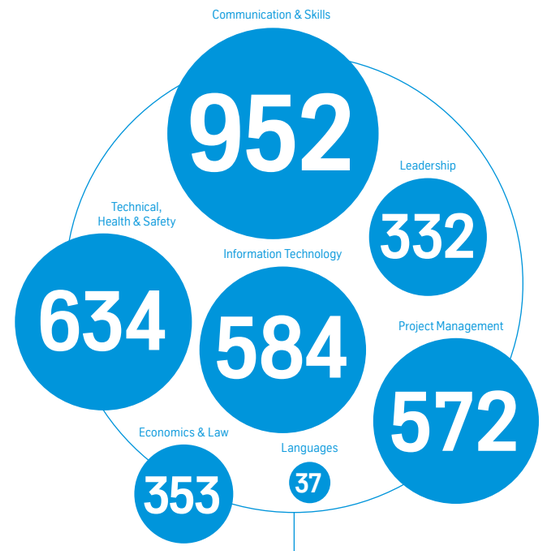
> "In a rapid evolving environment, we need highly trained and skilled people. With various offers we shape individual career paths."
>
> Head of People Development

The company has also made significant advancements in digitalisation. The Learning Management System (LMS) has played a pivotal role in upskilling efforts, allowing employees to flexibly access internal and external training sessions, language courses, and other development opportunities. Digitalisation has also enhanced the analysis of performance indicators for training programmes and facilitated the evaluation of their popularity. Between FY 2022/2023 and FY 2023/2024, the number of participants increased from 2,277 to 3,520, representing a 26% growth rate. Registrations for training sessions represent the average gender share in the company, around 20% are female participants.

An employee dialogue system, achieving a completion rate of 95%, focused on enhancing collaboration. These discussions encouraged exchanges between employees and leaders to reflect on past achievements and set collaborative goals for the future.

Conducted Trainings in Germany





The amount of conducted trainings increased by

26%

Workers in the Value Chain

An extensive supplier management protects workers in the value chain. Please find more details in chapter Responsible Procurement.

Affected Communities

photo: Peter Burdon/unsplash

Stakeholder engagement is of major importance at thyssenkrupp Marine Systems. Affected communities are taken into account as part of the upstream value chain. Compliance with the supply chain act and other regulations ensure that communities are not harmed. The Supplier Code of Conduct (SCoC) covers obligations to safeguard the economic, social and cultural rights of communities, as well as the civil and political rights and the rights of indigenous peoples.

Due to the nature of the product and services, the perspective is primarily focused on the upstream value chain.

photo: Pexels/pixabay

Consumers and End-Users

The core business of thyssenkrupp Marine Systems primarily involves business-to-government transactions, making typical consumer and end-user topics less relevant. Health & safety and security are ensured by product quality processes as well as contractual requirements.

Social Corporate Engagement - Putting the Needs of Citizens First

Stakeholders today are taking an intense look at industry's impact on society, and expectations for good corporate citizenship are rising. thyssenkrupp Marine Systems demonstrates its commitment to being a good neighbour through active participation in local and regional communities all over the world. Through selected social engagement activities, memberships, and donations, the company contributes positively to society. In FY 2023/2024, thyssenkrupp Marine Systems and ATLAS ELEKTRONIK were actively involved in 63 memberships and collaborations with different unions and associations. Examples of the company's commitment to social responsibility are illustrated in this chapter. Furthermore, in FY 2023/2024, the policy on social engagement, memberships and donations has been updated to enhance transparency.

"The whole world is one neighbourhood."

Franklin D. Roosevelt

photo: chaiyanansuwatmongkolcharjaxabay

DONATIONS IN FY 2023/2024:
AROUND €40,000

Highlights

CAPTN	CAPTN e. V.		Business Association for the Maritime Technology Transfer Centre
FREUNDESKREIS YAD VASHEM E.V.	Membership of the Friends of Yad Vashem	UMWELT UNTERNEHMEN	Partnership with Umwelt Unternehmen Bremen
CAU Christian-Albrechts-Universität zu Kiel Technische Fakultät	Friends of the Faculty of Engineering		Friends of Gaarden

SUM OF CURRENT MEMBERSHIPS IN ORGANIZATIONS & ASSOCIATIONS: 63

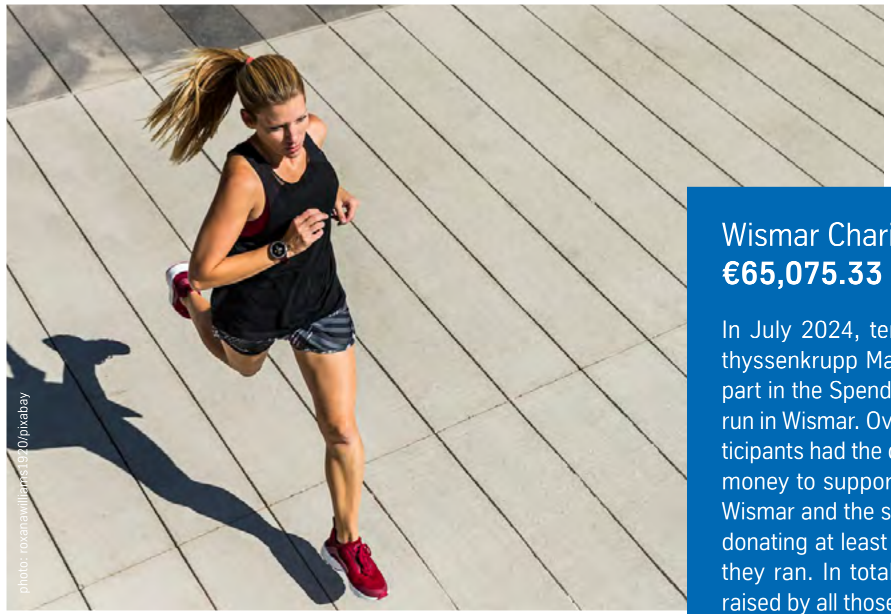
European Elections 2024 – Together for Respect, Tolerance and Diversity

thyssenkrupp stands up for democracy and believes in a united, open and democratic Europe. A business alliance of more than 30 reputable German companies, including thyssenkrupp, was founded under the name “We Stand for Values” to encourage 1.7 million people to vote in the 2024 European elections. Numerous activities emphasized the importance of European integration for wealth, growth and jobs. The alliance highlights the values that enable peaceful coexistence and stress that diversity and cross-cultural partnership is the cornerstone of economic success.

ATLAS ELEKTRONIK Supports Music Therapy at the Prof. Hess Parents & Children Centre in Bremen with a Donation of €9,000

On 4 September 2024, Felix Jenckel, CFO of ATLAS ELEKTRONIK GmbH, presented a cheque for €9,000 to the Prof. Hess Parents & Children Centre in Bremen. Prof. Dr. Melchior Lauten, director of the clinic, gratefully received the donation. The ongoing support of ATLAS ELEKTRONIK ensures the continuation of music therapy, which helps young patients handle their emotions while battling against life-threatening illnesses. The therapy is used in premature infant unit and supports their development in a world they entered way too early.

The Prof Hess Parents & Children Centre at the Clincal Centre Bremen-Mitte is one of the most modern children’s hospitals in Germany. With more than 5,500 square metres, the hospital is also one of the biggest facilities of this kind in the country.



Wismar Charity Run raised **€65,075.33**

In July 2024, ten employees from thyssenkrupp Marine Systems took part in the Spendenlauf 24/7 charity run in Wismar. Over seven days, participants had the opportunity to raise money to support social projects in Wismar and the surrounding area by donating at least €0.50 for each lap they ran. In total, €65,074.33 was raised by all those who took part.

“Zukunftstag” - A Day for the Future

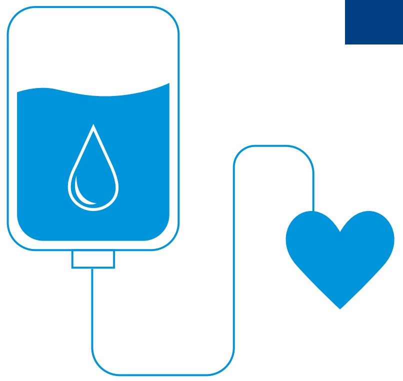
Each year, teenagers aged 14–16 have the chance to visit various thyssenkrupp Marine Systems and ATLAS ELEKTRONIK sites to explore future career opportunities. At the Bremen location, around 100 teenagers were welcomed to learn about the company, rotating through various departments. In Bremen, employees could also bring their children to show them their workplace.

In Kiel, the 'Day for the Future' was specifically designed to inspire girls and challenge stereotypes. Activities included a shipyard tour, practical exercises, and discussions with female apprentices about training opportunities in Kiel. Additional activities were hosted at the Emden, Wismar, Hamburg, and Wedel locations. Many young participants had their first experience with the industry and left inspired for their future career paths.

> “We are looking forward to many joyful events in the future and we are happy to motivate our youngest employees to engage.”
>
> Head of HR Vocational Training

Blood Donation Drive by Deutsches Rotes Kreuz

As part of the “We Care” days, the German Red Cross (Deutsches Rotes Kreuz) visited the Bremen site with its blood donation vehicle. In Germany, 15,000 blood donations are needed every day – a vital necessity that can save up to three lives with every donation. Employees at the Bremen site generously donated blood to help meet the crucial need of donations.



Social Days for Apprentices and Dual Students

Starting in 2024, apprentices and dual students have the opportunity to take two days paid leave for the purpose of social activities. In a pilot event, four apprentices visited the project “Sprottenhausen” of the AWO Kinder- & Jugendtreff “KiCK” in Kiel. They helped to set up the children’s town and took care of the children during the project. Sprottenhausen is a simulated city, where children can learn how democracy works and get in contact with first economic questions. Participating children get to know different fields of work supported by volunteers.

Sustainable Business Conduct

5

Sustainable business conduct means ensuring that business activities align with the needs of society while maintaining the highest standards on ethics and integrity. The policy framework outlines and integrates the company's responsibility to respect human rights, the environment and anti-corruption principles. Data security, cybersecurity and privacy are also essential elements.

Business Ethics and Integrity

thyssenkrupp Marine System incorporates the highest standards in ethics and integrity, supported by a strong compliance system. The values of respect, cooperation and social responsibility form the foundation for good governance. More information on these activities is available in the Sustainability Brochure published in March 2023.

Human Rights

The Mission Statement, Compliance Commitment and Code of Conduct form the principal framework for the Executive Board as well as for all thyssenkrupp leaders and employees. The Code of Conduct outlines the fundamental principles and rules for responsible and ethical behavior towards people inside and outside the company. This naturally includes respect for human rights as a core value.

thyssenkrupp Marine Systems is committed to the United Nations International Bill of Human Rights and its implementation throughout the group. This commitment is also demonstrated by signing the ten principles of the United Nations Global Compact. An extensive supplier management system ensures that direct suppliers respect human rights and are committed to ensuring that indirect suppliers do the same.

thyssenkrupp Marine Systems is committed to the highest sustainability standards, which include good corporate governance as well as environmental and social responsibility. To secure the sustainable success for its customers with innovative product and service solutions, the necessary raw materials, goods and services are sourced worldwide. This is supported by responsible corporate management geared towards long-term value creation. In addition, thyssenkrupp AG has established an international committee with the participation of the group's Works Council, the European Works Council, and trade unions to intervene in cases of violations or disputes that cannot be resolved locally. As agreed, incoming reports are processed in consultation between the International Committee and thyssenkrupp.

Whistleblowing System

Several communication channels have been set up to report infringements anonymously, helping to support a functioning compliance system. The aim is to counteract violations at an early stage and limit damage to the company, employees and partners. Everyone is encouraged to speak openly and above all, in good time. Employees may contact their supervisor first, while non-employees can reach out to their business partner. In other cases, the compliance department is available via

whistleblowing@thyssenkrupp.com
+ 49 201 844 505050

Whistleblowing System

whistleblowing@thyssenkrupp.com
Telephone: +49 201 844 505050

→ The electronic whistleblowing system can be reached via internet.

→ In North America and Canada, the TKNA Ethics Hotline can be contacted.

"Everyone is encouraged to speak openly and above all, in good time."

Human Rights Officer


photo: geralt/pixabay

The company's electronic Whistleblowing System is online in 34 languages and is open to all thyssenkrupp employees as well as customers, suppliers and other third parties.

Reports are reviewed and handled by the Compliance Officers of thyssenkrupp AG (with an exception for North America/Canada, which is handled by NAVEX Global). Follow-up communication between the Compliance Officer/NAVEX Global and the whistleblower is possible, anonymously if desired, through the setting up of a secure mailbox.

thyssenkrupp safeguards the interests of whistleblowers by providing assurances that all information received by Group Function Legal & Compliance at thyssenkrupp AG remains confidential. All necessary means are used to protect whistleblowers acting in good faith from any disadvantages as a result of their disclosures.

During investigations, thyssenkrupp also strives to protect the legitimate interests of other people affected by a disclosure.

Embedding Compliance in International Business Relationships and Export

thyssenkrupp Marine Systems does not produce weapons of mass destruction (nuclear, chemical and biological weapons) nor is it involved in the production or use of such weapons.

Exports of military equipment differ from general exports, which are usually an instrument of economic policy. For this reason, the German government has imposed particularly strict rules in this sensitive area and pursues an extremely restrictive licensing policy.

There are no simple solutions or clear-cut decisions for exports of military equipment. Beyond governmental restrictions, thyssenkrupp Marine Systems pays particular attention to ensuring that goods sold are not misused to violate human rights or to exacerbate a crisis. Good Governance strongly supports compliance with highest ethical standards. Extensive internal due diligence is carried out prior to all business activities.

Good Governance strongly supports compliance with highest ethical standards.

Cybersecurity, Information Security and Privacy

Balancing new security threats with new solutions is a key focus at thyssenkrupp Marine Systems, as enhanced security systems continue to be developed. The company takes into account both customer needs and the requirements of its own operations.

Information Security and Privacy

Knowledge is one of the most valuable assets in business. thyssenkrupp Marine Systems has successfully implemented an information security management system (ISMS) in accordance with ISO 27001. By undergoing independent auditing of the ISMS by an accredited certification authority, thyssenkrupp Marine Systems demonstrates its competence in information and IT security, strengthens its position as a trusted partner for its customers and business partners, and fulfils customer requirements while securing a competitive advantage.
Ensuring the availability, integrity, confidentiality and authenticity of information are critical to achieving business success. On a daily basis, it is necessary to handle personal data of employees, customers, subcontractors and other third parties. Protecting this sensitive data and the individual right to informational self-determination is a primary concern. The robust data protection management system and the technical and organisational measures are subject to constant monitoring. Senior management demonstrates its commitment to the ISMS by fully supporting information security objectives, the measures derived from them and continual improvement.

IT Security

The threat to private and public sector organisations is continuously growing amid geopolitical conflicts all over the world. thyssenkrupp Marine Systems faces an increasing number of cyberattacks, necessitating effective risk management systems and countermeasures to ensure business continuity.

New sophisticated attack methods and increased efforts by state and non-state actors confirm that the preventive technical cybersecurity measures established and continuously improved at thyssenkrupp Marine Systems are essential to avoid information security threats. These measures are complemented by organisational instructions and appropriate internal awareness education and training to continuously reduce the residual risk of system failures. Training is mandatory for all employees.

Thanks to the consistent implementation of and adherence to the company's cybersecurity strategy, all attacks on the IT infrastructure have been successfully repelled to date.

A fast changing world poses many new threats. thyssenkrupp Marine Systems' security systems are constantly monitored and continuously improved to ensure the best possible cybersecurity.

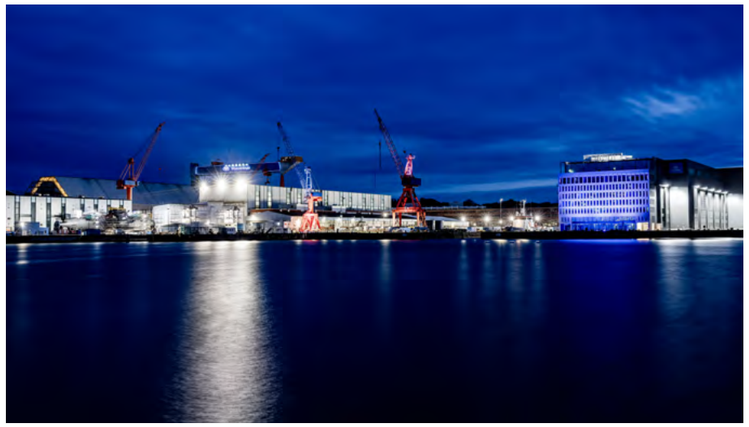
Prevention and Detection of Corruption or Bribery

thyssenkrupp Marine Systems is dedicated to continuously promoting the advancement of a culture of ethical and lawful conduct while delivering safe and reliable products to customers. The company actively prevents and abstains from any situation presenting a conflict of interest and actively discourage any form of corruption at all levels in Germany or abroad. To ensure transparency in the management and control of business, a global compliance program under surveillance of the Chief Compliance Officer has been established (more details to find on https://www.thyssenkrupp.com/en/company/compliance).

It is particularly important to continuously exchange ideas with external experts to further improve. The group-wide Compliance Program and the enhanced internal control system are regularly audited by third parties. Those "soundings" are an important tool to re-evaluate and adapt policies and procedures as well as the whole Compliance Management System.

Main points of the audits are:
- Appropriate internal control system for the prevention of compliance violations
- Implementation of recommendations in the Compliance Management System
- Appropriate investment controlling process for future major investment projects and related information of the Supervisory Board

The systems and processes audited are continuously developed and the concepts and planned measures are target-oriented, particularly in the area of the compliance-relevant internal control system.



Around 80 full-time compliance employees (FTE) and 250 compliance managers play a key role in permanently embedding compliance in the thyssenkrupp Group and are available to employees seeking advice. Additionally, there are over 180 data protection officers and data protection coordinators. At thyssenkrupp Marine Systems, around 10 FTEs are supporting this global program. This program is closely interlinked with risk management and with internal control system. In this way, it is ensured that compliance is an integral component of every single business process. The key areas of the program are anticorruption, antitrust law, data protection, anti-money laundering, and trade compliance.

A groupwide compass is created in the mission statement to guide actions and behavior. The main principles and rules of actions and the standards set in all dealings with business partners and stakeholders are summarized in the thyssenkrupp Code of Conduct. The mission statement and the code of coduct are accompanied by a compliance commitment.

The main principles and rules governing the actions as well as the standards set in dealings with business partners and stakeholders are summarized in the thyssenkrupp Code of Conduct. For employees, managers, and the board, it provides framework guidance on the following issues:

- Compliance with the law
- Avoiding conflicts of interest
- Fair competition
- Preventing money laundering
- Equal treatment and non-discrimination
- Human and labor rights
- Cooperation with employee representatives
- Occupational safety and health
- Sustainability and protection of environment and climate
- Donations
- Political lobbying
- Presentation in public and communications
- Reporting
- Confidential company information/inside information
- Data protection and information security
- Protection of company property

The Board of Directors sets a strong commitment to anti-corruption. Yet Leadership does not just rest with the CEO; middle management bears the challenging responsibility in terms of setting the tone and culture of the organisation for frontline staff. thyssenkrupp Marine Systems supports employees with accessible, tailored controls as well as trainings, across all divisions and areas of operation. The company provides a mandatory training to its at-risk employees in terms of its policy. Details of the trainings conducted in FY 2023/2024 are shown in the table 5.1. The executive boards of the Business Unit Marine Systems participate at regular mandatory trainings as well as all other relevant functions.

	At-risk functions	Managers
Training coverage		
Total	4,870	364
Total receiving training	4,588	363
Delivery method and duration		
Classroom training	–	–
Computer-based training	1 h	1 h
Voluntary computer-based training	–	–
Frequency	triennially*	triennially*
Topics covered		
Definition of corruption	x	x
Policies	x	x
Procedures on suspicion/detection	x	x

Table 5.1

*and in case of major changes and new employees

Responsible Procurement

Responsible procurement at thyssenkrupp Marine Systems incorporates ESG requirements across the supply chain. To uphold these principles, sustainability is prioritized early in supplier management, promoting strong partnerships with suppliers and engaging business partners in human rights, environment protection and fair working conditions. Values such as individual responsibility, openness and transparency, alongside lawful conduct and ethical behaviour are paramount.

By signing the Supplier Code of Conduct, all suppliers agree to fulfil the highest standards in working conditions, human rights, environmental protection and compliance. From the first contact, a clear process of supplier qualification ensures low risks in procurement. Figure 5.1 provides a schematic view of the pre-order process, which supports compliance with the Act on Corporate Due Diligence Obligations in Supply Chains (Supply Chain Act).

Suppliers are categorised across five risk levels, which serve as the basis for key performance indicators, see figure 5.2. One objective is to minimise the number of high-risk suppliers. Specifically, high risk and very high risk suppliers are to be avoided. Three general steps support this objective: voluntary disclosure via the “Integrity Next” tool, the supplier qualification process in the Pronet management system, and dedicated workplace conditions assessments. High-risk suppliers are required to undertake preventive measures that will be tracked and documented with an agile tool.

Detailed risk assessments and development of suppliers are prioritised over ending business partnerships. Suppliers are required to submit self-disclosures answering questions concerning the protection of human rights and the environment. To secure the compliance with the SCoC, supplier visits on premises are conducted randomly. Employees of thyssenkrupp Marine Systems are authorised to audit the conditions on site.

What Happens prior to the Order?

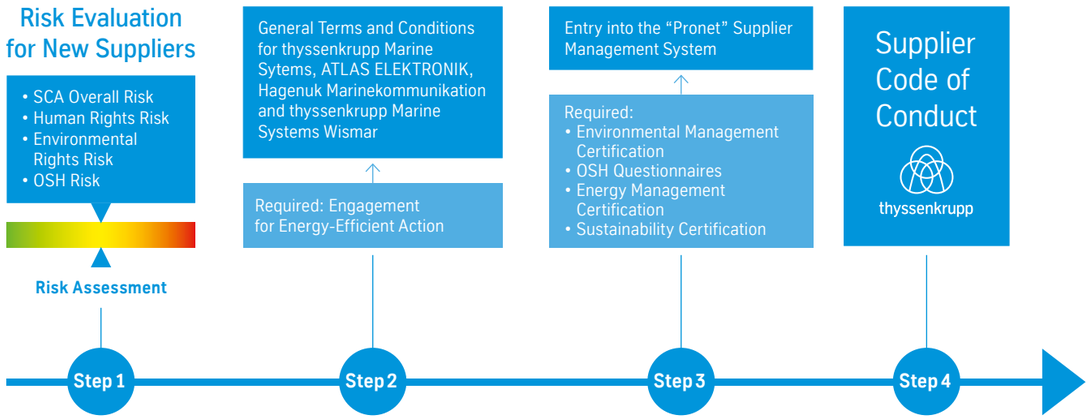


Figure 5.1: Schematic view of supplier qualification process

In FY 2023/2024, a new non-financial target, “High Risk Supplier Reduction (HSR)”, was introduced to reduce the relative proportion of high-risk suppliers based on an initial risk assessment following the supply chain act. In FY 2023/2024, thyssenkrupp Marine Systems achieved 43.4% compared to a target of 68.9%. Targets for upcoming years are 53.9% in FY 2024/2025 and 36.4% in FY 2026/2027. The non-financial target “Sustainability Audits”, conducted by a third party, was exceeded , with seven audits completed against a target of five. These audits help to analyse and improve working conditions at suppliers’ sites, focusing on environmental protection, fair working conditions, health and safety as well as management systems. The effectiveness of corrective measures is tracked by additional visits or documentation.

thyssenkrupp SCA Risk Analysis and SCA Risk Reaction Approach

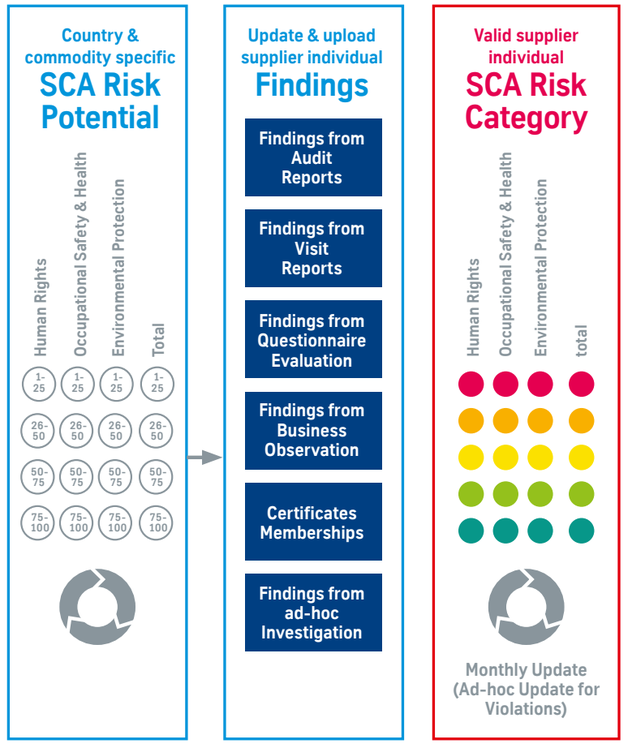


Figure 5.2: Methodology for determining supplier risk

“Responsible procurement creates value for society, the environment, and the economy.”

SCA Officer

How to Handle High Risk Suppliers

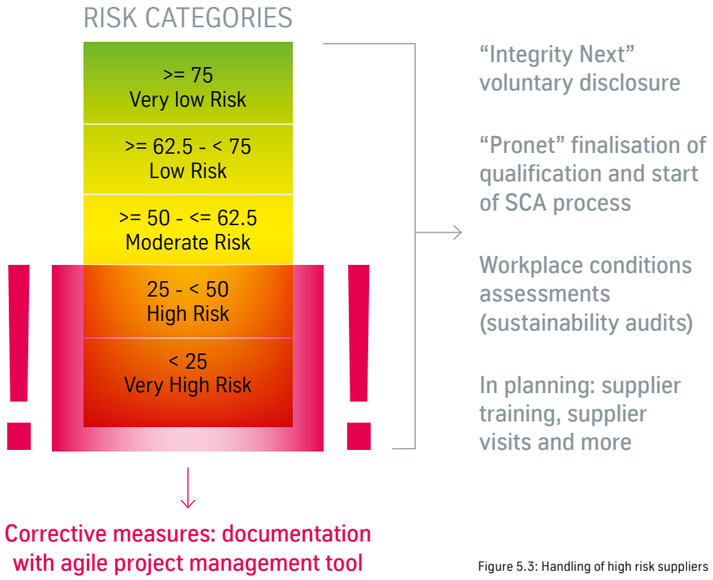


Figure 5.3: Handling of high risk suppliers

Payment Practices

thyssenkrupp Marine Systems' standard contract terms specify payment within 30 days of receiving an invoice. More than half of contracts follow this standard, while others vary between 10 to 90 days or extend to the month after the invoice date.

Putting the Needs of Customers First

The geopolitical importance of the maritime domain is growing, customer requirements are evolving, and the competitive environment is becoming more challenging. With the goal of becoming the leading partner for maritime security, thyssenkrupp Marine Systems focuses on innovation and technology while maintaining the highest level of product safety and adapting to future customer needs, such as reusability and other sustainable circular concepts.

The company's naval products are already known for their exceptional durability, with expected lifespans of 30 years or more. Retrofits of existing products are offered to further extend their lifetimes. thyssenkrupp Marine Systems possesses extensive expertise in addressing the challenges associated with retrofitting, considering not only the propulsion system but also downstream systems such as tanks, vents, and ventilation systems. Given the critical safety and security requirements on board marine vessels, particular attention is paid to security aspects. Strict regulations in the defense industry limit the extent of recycling and reuse concepts, but the sector is driven by resource scarcity and the economic benefits of circular concepts. Investigating opportunities and dedicated technology scouting support the early adaptation of products towards more sustainable solutions.

"Durability, efficiency and retrofitting capabilities are key requirements from our customers, which simultaneously enhance the sustainability of our products."

CTO

Product Quality and Safety

As a global key player in the provision of integrated system solutions for maritime defense technology, thyssenkrupp Marine Systems works with a relatively small number of governmental customers, building strong and lasting relationships. The company significantly contributes to the performance and safety of its customers and their citizens by delivering high-quality products. High standards of quality, a key competitive advantage, require a continuous process throughout every stage of design, manufacturing, and assembly, regularly incorporating customer feedback and insights. Project Quality Managers serve as the customer's contact for all quality-related issues and report regularly to the Quality Management Board. Quality information management ensures that relevant information is available where needed, allowing for quick handling of upcoming challenges.

Quality management involves coordinating and managing all activities aimed at preventing incidents and accidents involving products. The quality management system is defined through clear quality policies and covers the monitoring of quality in processes, projects, and products.

"The safety and physical integrity of customers is a top priority. Safety Managers are an integral part of project teams. They support the dialogue with the customer to fulfil all safety requirements."

Safety Manager

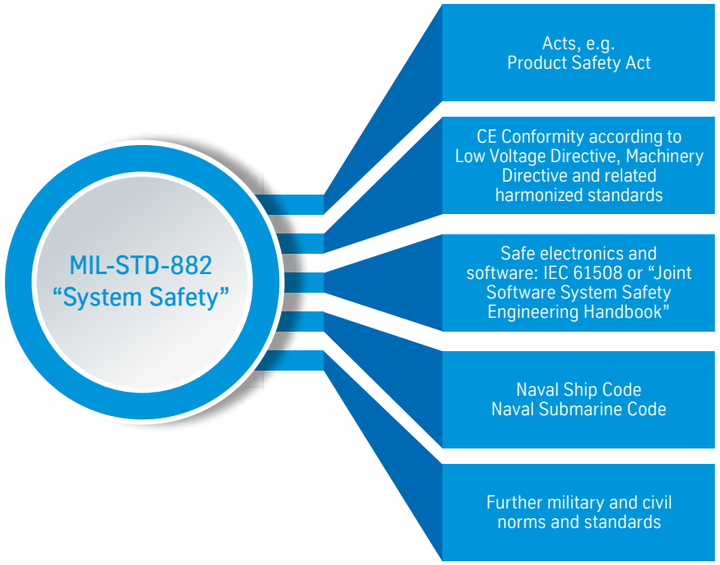


Figure 5.4: Overview of MIL-STD-882 "System Safety"

The overall quality of products is ensured through several levels, anchored in the development and realization stages of the V-model:

- Process-accompanying internal inspections take place to ensure the quality of documents and personnel, e.g. construction document inspections with multi-stage release stages, documented in the ERP tool (SAP), personnel qualification, such as welder inspections as part of the welding workshop approval certificates (e.g. in accordance with DIN 2303, DNV) and more.
- Reviews specified in the QM system conclude the individual process phases in a formalized manner.
- Regular supplier audits in the course of technical supplier management.
- Contractual quality requirements are checked and verified in Factory Acceptance Tests (FAT) on component level, Harbor Acceptance Tests (HAT) on system level and Sea Acceptance Tests (SAT) on boat or ship level for overall performance values. Acceptance Tests are usually performed with participation of the customer.

Internal specifications ensure product safety and the preparation of associated verification measures. Safety standards, such as the internationally recognized US standard "MIL-STD-882," are considered when defining specifications. Safety managers, who plan, coordinate, and evaluate product-related safety, are an integral part of the project organization. In coordination with the respective customer, they ensure compliance with relevant legal requirements, norms, and standards, as illustrated in figure 5.4.

Different project roles maintain continuous dialogue with the customer throughout the long-term cooperation, recording customer satisfaction, for example, by monitoring reactions to fulfilled requirements. At the end of each project, the Safety Manager prepares the Safety Assessment Report without instructions and makes it available to the client upon request. This approach ensures the necessary transparency regarding product safety.

Sustainable Innovation

As a maritime powerhouse, thyssenkrupp Marine Systems is characterized by extensive technological expertise that drives growth through innovation. Innovation is influenced by recent market trends and evolving needs. The new paradigm focusing on integrated system solutions highlights the direction of the maritime domain: uncrewed platforms, connectivity, combat cloud, multi-domain operations, and artificial intelligence. The "future battlefield" and the resulting new capability requirements of customers are beginning to take shape. Rapidly available innovative system solutions and state-of-the-art technologies are in high demand. With a consistent focus on innovation, thyssenkrupp Marine Systems further develops the company's specialized technological capabilities in a targeted manner and reorganizes the unique expertise of its workforce for the benefit of the entire business unit.

With NXTGEN, a central innovation greenhouse will be established to pursue civilian opportunities alongside military innovations. The central principle of the innovation greenhouse is to evaluate the attractiveness of new business areas and models. The same economic targets apply to the pursuit of civilian opportunities as to all other operating units. With the establishment of NXTGEN Engineering and an expanded product range, thyssenkrupp Marine Systems is taking a significant step towards a diversified and sustainable future, further strengthening its position in the maritime industry as an innovation leader. The aim is to bridge the civilian and military worlds by combining longstanding expertise in maritime engineering and construction with current and future market needs. Highly innovative products, including uncrewed underwater vehicles, platforms for ordnance disposal, and offshore converter platforms, are ready to enter the market.

The adjusted R&D intensity as indirect financial target refers to R&D costs as a proportion of sales, without trading and distribution.
The EU Strategic Compass for Security and Defence sets the goal of increasing energy and resource efficiency within the EU armed forces and reducing their environmental footprint to meet the European Union's climate-neutrality target by 2050, under the European Green Deal, without compromising operational effectiveness. Naval vessels developed by thyssenkrupp Marine Systems have always been designed with the efficient and effective use of resources in mind. Research and development activities aim to further increase energy efficiency in support of European strategies.

> “Like our competitors, we also have to constantly develop and improve!”
>
> Head of Research & Technology

Indirect Financial Target	FY 2022/2023	FY 2023/2024	FY 2023/2024 Target	FY 2024/2025 Target
R&D Intensity	**6.9%**	**6.6%**	**6.7%**	**7.0%**

Furthermore, experts at thyssenkrupp Marine Systems continuously explore sustainable improvements through additive manufacturing at their own additive manufacturing center at the shipyard in Kiel. The focus is on reducing the logistical footprint, for example, by providing on-site maintenance solutions and meeting military requirements for deployable solutions.

The benefits of additive manufacturing include:
- Production of complex geometries in short production times
- Leight weight construction with finite element methods
- Future spare parts management – local printing possibility avoids storage, delivery times and obsolescence management
- Fast and easy functional prototyping
- Merging of assembly groups to avoid critical joining technologies

Modern manufacturing processes plays a major role in terms of emissions reduction as well as performance increase for products by:
- Reduction of energy consumption
- Reduction of material usage
- Reduction of production time
- Better working conditions
- Reduction of greenhouse gas emissions

Therefore, production processes are constantly being optimised. This also includes the implementation of environmentally friendly energy and heat supply.

Using Robotics to Support Sustainable Manufacturing

Robotics supports sustainable manufacturing by reducing the resources and time needed, minimising the wear and tear of tools, and optimising transport. This approach also offers social benefits, such as reducing safety risks for employees and improving working conditions.

thyssenkrupp Marine Systems has implemented the use of robotics in the production of pressure hulls for submarines. The quality of the weld seams of the submarine hull is crucial to withstand pressure during underwater operations. Quality inspections using X-ray technology are normally carried out by an employee, who applies X-ray film in given intervals on the weld seam. This is tedious and dangerous, as the employee has to enter and exit the pressure hull for each individual X-ray procedure.
The task is now performed by a robot with integrated X-ray technology, which is controlled remotely, and needs to be positioned inside the pressure hull only once. In addition, the analogue X-ray system is being replaced by a digital version. This use of robotics saves around 2,700 working hours per pressure hull and reduces safety risks for employees.

Annexes

6

Terms

CSRD – Corporate Sustainability Reporting Directive
The Corporate Sustainability Reporting Directive (CSRD) is the new EU legislation requiring all large companies to disclose in their management reports information on their environmental impact and social activities. The new rules and standards (ESRS) aims at helping investors, consumers, policymakers, and other stakeholders evaluate large companies' non-financial performance, and serves as a minimum set of (standardized) requirements across the EU.

ESRS – European Sustainability Reporting Standards
The EU Sustainability Reporting Standards (ESRS) are a set of standards that outlines the mandatory concepts and principles to which companies reporting under the Corporate Sustainability Reporting Directive (CSRD) must align their sustainability statements with.

Principle of Materiality
Materiality is an accounting principle which states that all items that are reasonably likely to impact investors' decision-making must be recorded or reported in detail in a business's financial statements using GAAP standards. Essentially, materiality is related to the significance of information within a company's financial statements. If a transaction or business decision is significant enough to warrant reporting to investors or other users of the financial statements, that information is "material" to the business and cannot be omitted.

DMM – Double Materiality Matrix
Financial materiality and impact materiality together under the umbrella of 'double materiality' are the only relevant forms of materiality, with both perspectives needed in a two-pillar structure - for financial and sustainability reporting - with a core set of common disclosures and each pillar on an equal footing. The DMM is a visualisation of the assesses double materiality.

- Financial materiality: "A sustainability impact may be financially material from inception or become financially material when it becomes investor relevant, including due to its present or likely effects on cash-flows, development, performance and position in the short-, medium- and long-term time horizons. Irrespective of their being financially material, impacts are captured by the impact materiality perspective." (ESRS 1)
- Impact materiality: "A sustainability matter is material from an impact perspective when it pertains to the undertaking's material actual or potential, positive or negative impacts on people or the environment over the short-, medium- and long-term time horizons. Impacts include those caused or contributed to by the undertaking and those which are directly linked to the undertaking's own operations, products, or services through its business relationships. Business relationships include the undertaking's upstream and downstream value chain and are not limited to direct contractual relationships." (ESRS 1)

Climate Change[4]
Climate change refers to any change in climate over time, whether due to natural variability or as a result of human activity. This usage differs from that in the United Nations Framework Convention on Climate Change (UNFCCC), which defines "climate change" as: "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.

Uncertainty[5]
An expression of the degree to which a value (e.g., the future state of the climate system) is unknown. Uncertainty can result from lack of information or from disagreement about what is known or even knowable. It may have many types of sources, from quantifiable errors in the data to ambiguously defined

[4] IPPC Glossary - https://www.ipcc.ch/site/assets/uploads/2018/03/wg2TARannexB.pdf
[5] IPCC Glossary - https://www.ipcc.ch/site/assets/uploads/2018/03/wg2TARannexB.pdf

concepts or terminology, or uncertain projections of human behavior. Uncertainty can therefore be represented by quantitative measures (e.g., a range of values calculated by various models) or by qualitative statements (e.g., reflecting the judgment of a team of experts).

Science Based Targets Initiative[6]
Science-based targets provide a clearly-defined pathway for companies to reduce greenhouse gas (GHG) emissions, helping prevent the worst impacts of climate change and future-proof business growth. More than 4,000 businesses around the world are already working with the Science Based Targets initiative (SBTi)

Climate Neutral(ity) or Net zero CO_2 emissions:
Net zero carbon dioxide (CO_2) emissions are achieved when anthropogenic CO_2 emissions are balanced globally by anthropogenic CO_2 removals over a specified period. In other words it consists of (1) reducing scope 1, 2, and 3 emissions to zero or to a residual level that is consistent with reaching net-zero emissions at the global or sector level in eligible 1.5 °C-aligned pathways as well as (2) neutralizing any residual emissions at the net-zero target year and any GHG emissions released into the atmosphere thereafter[7].

GHG - Greenhouse gases[8]
GHG are gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth's surface, the atmosphere, and clouds. This property causes the greenhouse effect. Water vapor (H_2O), carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), and ozone (O_3) are the primary greenhouse gases in the Earth's atmosphere. Moreover, there are several entirely human-made greenhouse gases in the atmosphere, such as the halocarbons and other chlorine- and bromine-containing substances which are dealt with under the Montreal Protocol. Beside CO_2, N_2O, and CH_4, the Kyoto Protocol deals with the greenhouse gases sulfur hexaflouride (SF6), hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs).

Addition of greenhouse gases (GHGs) to the atmosphere by deliberate human activities, i.e., in addition to the removal that would occur via natural carbon cycle processes. GHG emissions can be accounted in the direct emissions of a company when they physically occur within the operational scope of the company (scope 1). They can also be accounted in the indirect emissions of the company, whether they arise from the emissions occurring at the site of the production of the energy purchased by the company (scope 2), or they arise from other upstream and downstream value chain activities (scope 3).

Method for scope 2 accounting :
- Location-based: A method to quantify scope 2 GHG emissions based on average energy generation emission factors for defined locations, including local, subnational, or national boundaries.
- Market-based: A method to quantify scope 2 GHG emissions based on GHG emissions emitted by the generators from which the reporter contractually purchases electricity bundled with instruments, or unbundled instruments on their own.

SDGs – Sustainable Development Goals
The Sustainable Development Goals (SDGs) are a set of 17 global goals adopted by the United Nations General Assembly in 2015. The SDGs aim to address crucial global challenges such as poverty, inequality, climate change and environmental degradation. The over-arching goal of the SDGs is to provide a blueprint to achieve a better and more sustainable future for all.

[6] SBTi Website
[7] https://sciencebasedtargets.org/resources/files/Net-Zero-Standard.pdf
[8] IPPC Glossary - https://www.ipcc.ch/site/assets/uploads/2018/03/wg2TARannexB.pdf

Abbreviations

Abbreviation	Description
CAPS	Climate Action Program for Sustainability
CSRD	Corporate Sustainability Reporting Directive
DCGK	German Corporate Governance Code
ESG	Environment, Social and Governance
ESRS	European Sustainability Reporting Standards
FY	Fiscal Year
GEEP	Group-wide Energy Efficiency Program
GHG	Greenhouse Gases
IG Metall	Industriegewerktschaft Metall
IPCC	Intergovernmental Panel on Climate Change
IRO	Impacts, Risk, Opportunities
LkSG	Lieferkettensorgfaltspflichtengesetz – Act on Corporate Due Diligence Obligations for the Prevention of Human Rights Violations in Supply Chains
R&D	Research and Development
RCP	Representative Concentration Pathways
SBTi	Science Based Targets Initiative
SDG	Sustainable Development Goals
UN	United Nations
UxV	Uncrewed Vehicles

Table 6.1

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“From now on, we must have a common understanding of what it means to think ahead, learn and act together. We are already stronger than ever and ready to take the next steps!”

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