



**Powering**  
Economies.  
Societies.  
Environment.  
Governance.  
Sustainability.  
**Tomorrow**

# Powering

2022 was the year that we intensified our efforts in strengthening our fundamentals, as we continue to focus on project delivery and execution excellence.

These efforts are critical to powering our resilience and expanding our capabilities and capacity for new growth areas to grow sustainably and create value in the long term.

This includes investing in the development of our talents at sea and shore, strengthening our leadership bench strength, and harnessing digital transformation that will enable us to be future-focused.

We will continue fostering strategic collaborations with our stakeholders, to deliver positive business outcomes and drive value creation across the ecosystem as we continue to build a sustainable future together.

# Tomorrow

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# ABOUT THIS REPORT



Welcome to MISC Berhad's (MISC) Sustainability Report 2022. This Sustainability Report provides details on the Group's sustainability performance for the year 2022 and our forward-looking commitments, initiatives, and strategies on sustainability. We prioritise subject matters that have been deemed most material to the business and stakeholders according to our materiality analysis.

The relevant contents within this Sustainability Report 2022 refer to more detailed disclosures in the MISC's Integrated Annual Report (IAR) 2022 and vice versa. While our IAR delivers a clear and concise story, this Sustainability Report supplements the IAR by providing more details on the company's sustainability disclosures.

This Sustainability Report also incorporates our Task Force on Climate-related Financial Disclosures (TCFD) report 2022.

## REPORTING SCOPE, BOUNDARY AND PERIOD

The information and data presented in this report covers the entire MISC Group's business activities and operations including Gas Assets & Solutions, Petroleum & Product Shipping, Offshore Business, Marine & Heavy Engineering, Integrated Marine Services, Port Management & Maritime Services, and Maritime Education & Training. It also covers the material business activities of our joint ventures and associates.

The publication of this Sustainability Report occurs annually and covers information for the period of 1 January 2022 till 31 December 2022, as well as any material events that occurred after this date up to the date of publication of this report.

Please refer to the Sustainability Reporting Standards section for a full list of disclosures on Global Reporting Initiatives (GRI), Sustainability Accounting Standards Board (SASB) and Task Force on Climate-related Financial Disclosure (TCFD). The reporting approach and framework are also detailed out in the Reporting Principles and Data Assumptions section in this report.

## INDEPENDENT ASSURANCE

Each of our vessel's fuel consumption and relevant activity data has been verified by a third party. DNV has confirmed that all data collected and reported is in accordance with the methodology and processes set out in the Ship Energy Efficiency Management Plan (SEEMP) as required by Regulation 22A of Annex VI of MARPOL Convention.

Our internal team has been constantly monitoring the reporting processes and any changes or updates required are made promptly to maintain continuous veracity.

## DATA MEASUREMENT TECHNIQUES AND ASSUMPTIONS

Our statements on future developments and past occurrences are based on information and assumption available at the time of publication. Certain information in this Sustainability Report comes from third-party sources and operations outside of our control. Nevertheless, internal due diligence has been carried out to guarantee that the information gathered is accurate and published using a reliable methodology. Please refer to the Reporting Principles and Data Assumptions section for our data accounting principles, measurement techniques and assumptions.

## ENGAGING WITH STAKEHOLDERS FOR A GREATER IMPACT

Consulting with stakeholders throughout the preparation of this sustainability report has deepened our understanding of important societal issues to produce a holistic report.

To depict a holistic 2022 sustainability performance, we have also incorporated the perspectives of our internal stakeholders, which comprise all business segments, subsidiaries, and key internal departments. Feedback from external stakeholders were also compiled during engagement sessions in the recent year.

## RESPONSIBILITY STATEMENT

MISC's Board of Directors acknowledges its responsibility in ensuring the integrity of this Sustainability Report. The Board, via the Board Sustainability and Risk Committee also resolves risk management and sustainability-related matters such as establishing a sustainability strategy; target setting; reviewing the adequacy of sustainability processes; effectively identifying, managing and reporting the Group's material sustainability matters; and monitoring and overseeing all sustainability performance and initiatives of the Group.


The Board will continue to ensure that the Group's sustainability strategies, priorities and targets, as well as performance against these targets, are communicated to both internal and external stakeholders.

**DATUK ABU HURAIRA ABU YAZID**  
Chairman

**CAPTAIN RAJALINGAM SUBRAMANIAM**  
President/Group Chief Executive Officer

## FEEDBACK

We are fully committed to listening to our stakeholders and we welcome feedback on our sustainability disclosures. Please send your comments to:

 **Corporate Sustainability**  
Group HSSE Division  
MISC Berhad  
Level 27, Menara Dayabumi  
Jalan Sultan Hishamuddin  
50050 Kuala Lumpur  
[misc.sustainability@miscbhd.com](mailto:misc.sustainability@miscbhd.com)

# ABOUT MISC

MISC Berhad is a world leading provider of international energy-related maritime solutions and services. The Group's principal businesses comprise energy shipping and its related activities, owning and operating offshore floating solutions, marine repair and conversion, engineering and construction works, integrated marine services, port management and maritime services, as well as maritime education and training.

Operating a modern and diversified fleet and powered by a multi-national workforce, MISC is firmly committed to creating value for our stakeholders and contributing to the sustainable development of the maritime industry.



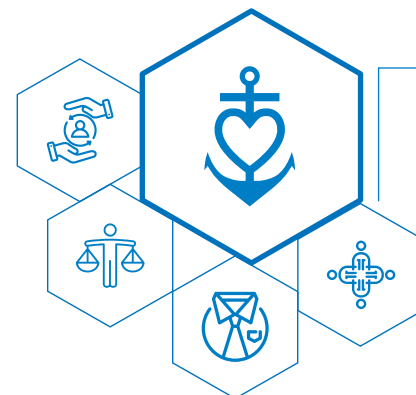
## VISION

To consistently provide better energy related maritime solutions and services

## MISSION

To be consistently better, we strive to:

- Exceed the expectations of our customers
- Promote individual and team excellence of our employees
- Create a positive difference to the lives of communities
- Care for the environment and operate responsibly
- Drive sustainable value for our shareholders



## SHARED VALUES

**Loyalty**  
Loyal to corporation

**Integrity**  
Honest and upright

**Professionalism**  
Strive for excellence

**Cohesiveness**  
United, trust and respect for each other

**54** years of sterling track record in delivering energy-related maritime solutions and services

Among the world's **LEADING** shipping conglomerates with a market capitalisation of **USD7.6 billion**

**STRONG** credit rating in the marine transport sector



S&P Global Ratings

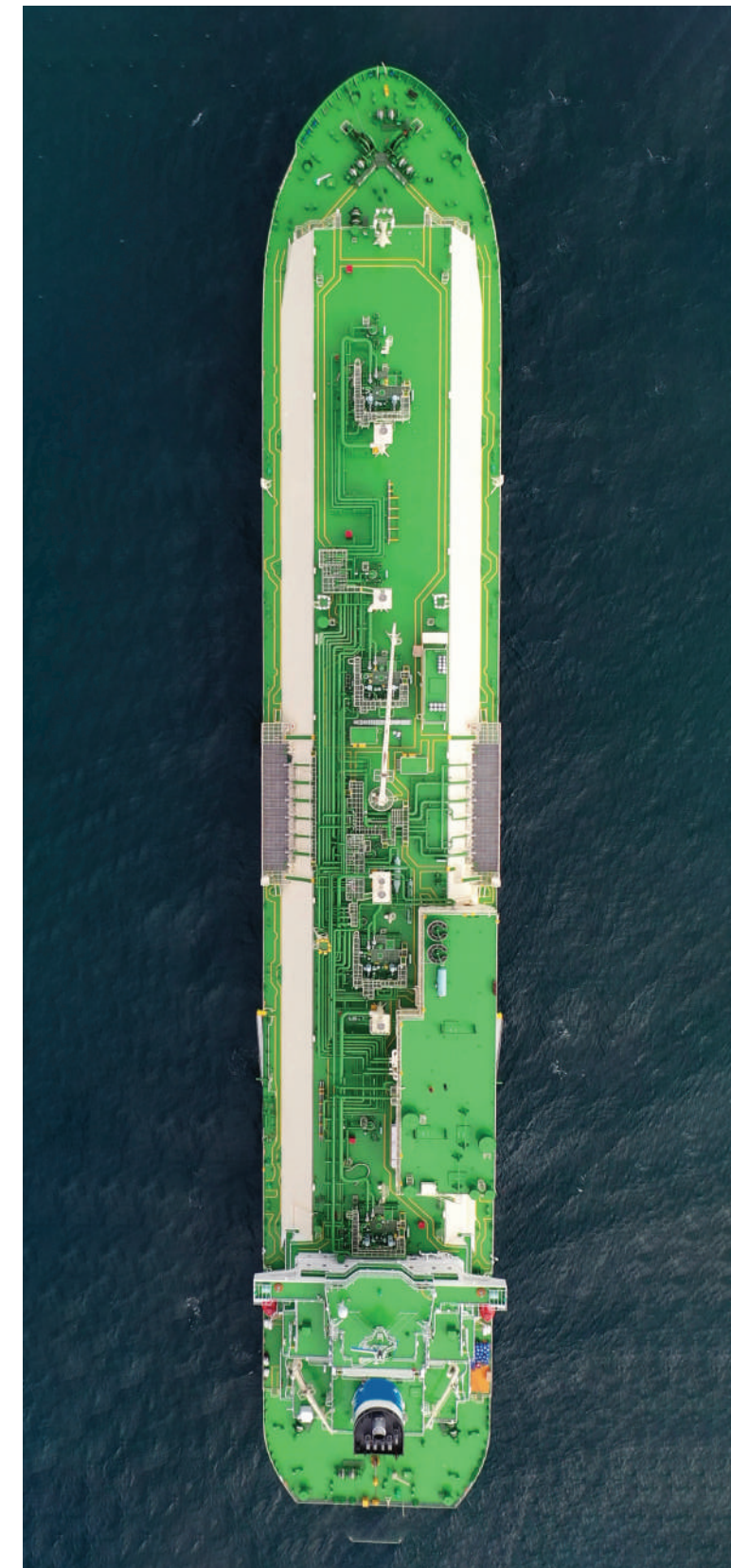


Moody's Investors Service

Modern fleet of **107** LNG, Petroleum and Product vessels

Reputable FPS owner-operator with **12** assets

A diverse and inclusive workforce of **9,355** employees from over 44 nationalities



# WHAT WE DO

## GAS ASSETS & SOLUTIONS

LNG carriers (LNGCs) transport natural gas in a liquid state, allowing it to be moved across oceans without pipelines. The containment systems on board the vessels are capable of storing natural gas at below its boiling point of -162° Celsius. At this temperature, the gas turns to liquid, thus reducing volume by 600 times. MISC's fleet of LNGCs utilise two types of containment systems, known as membrane and Moss types.



### Physical Capital

- 39 vessels
- 16 vessels under construction



### Services Performed

- Transportation of LNG and ethane
- New LNG asset-based solutions
- Technological solutions for FSU



### Competitive Advantage

- Sterling reputation for operational excellence
- Consistent track record of reliable and on-time cargo deliveries
- Leveraging on our proven industry experience to successfully expand into the emerging sectors of LNG bunkering vessels and very large ethane carriers

### MEMBRANE-TYPE LNGC

The membrane-type system is more space efficient and has a higher capacity than a Moss-type vessel of the same dimension.



25 VESSELS



6 VESSELS

### VERY LARGE ETHANE CARRIER (VLEC)

A specialised gas carrier which transports very large quantities of liquified ethane for trading over long distances, for example between North America and the Far East. The vessel transports ethane at -94° Celsius in membrane tanks and is equipped with dual-fuel propulsion and reliquefaction systems.

### LNG BUNKER VESSEL (LBV)

An LBV is a small-scale LNG vessel used to supply LNG as marine fuel (bunker) to LNG-fuelled vessels via ship-to-ship transfer operations. This vessel can also be utilised for small-scale LNG transportation, and for Gas Up Cool Down (GUCD) operations for conventional LNG vessels.

### MOSS-TYPE LNGC

A Moss-type vessel has self-supporting spherical tanks making it more robust and resistant to sloshing. It possesses a higher degree of operational flexibility for worldwide trading capability including the ability to load cargos at a floating liquefied natural gas (FLNG) unit.



5 VESSELS



1 VESSEL

### FLOATING STORAGE UNIT (FSU)

An FSU is a flexible LNG storage solution and provides an alternative to land-based facilities.



2 VESSELS

## PETROLEUM & PRODUCT SHIPPING

We own and operate a diversified fleet of specialised assets and conventional tankers in all key geographies to deliver services to the global energy companies, refiners and traders. Our product fleet transports a wide range of petroleum products, chemicals and vegetable oils. Our specialised assets provide critical support to the oil and gas industry.



### Physical Capital

- 68 vessels
- 3 vessels under construction



### Services Performed

- Conventional Services
  - Transportation of crude oil, petroleum products and chemicals
- Specialised Services
  - Owner and operator of DPSTs in the North Sea and Brazil
  - Provision of lightering services in the US Gulf and Latin America



### Competitive Advantage

- Advancing green shipping solutions with modern and technologically advanced fuel-efficient vessels
- Industry pioneers in the fields of modular capture vessels and LNG dual-fuel vessels
- Focused people investments to expand their sea and onshore skills and capabilities

### SUEZMAX TANKER

Tanker vessel with a capacity of shipping approximately one million barrels of crude oil, with the flexibility to do longer-haul cargo as well as shorter regional trades.



6 VESSELS

### VERY LARGE CRUDE CARRIER (VLCC)

A VLCC has the capacity to transport approximately two million barrels of crude oil over long distances to facilitate inter-regional trade.



10 VESSELS

### AFRAMAX TANKER

An Aframax tanker has the capacity to transport approximately 0.7 million barrels of crude oil. Used to carry crude oil or dirty products such as fuel oil in mainly regional trades.



18 VESSELS

### DYNAMIC POSITIONING SHUTTLE TANKER (DPST)

A DPST utilises dynamic positioning technology to load crude from remote offshore production facilities and transports it to the shore for storage or distribution.



17 VESSELS



2 VESSELS

### MODULAR CAPTURE VESSEL (MCV)

A modular Aframax-sized vessel that combines FPSO and dynamic positioning technology in a single hull to enable safe capture of hydrocarbons. The MCV is part of an innovative marine system solution designed to respond to a subsea well control incident.



10 VESSELS

### LIGHTERING SUPPORT VESSEL (LSV)

Transports equipment and crew to conduct ship-to-ship cargo transfer operations.



3 VESSELS

### CHEMICAL TANKER

Transports a variety of chemicals and vegetable oils in both inter and intra-regional trades.



2 VESSELS

### LR2 TANKER

Coated tanker with the capacity to transport approximately 0.7 million barrels and able to carry both clean and dirty products in regional trades.

# WHAT WE DO



FPSOs and FSOs have become an effective way of extracting hydrocarbons in many offshore oil and gas producing regions around the world. Vessel sizes depend on the oil and condensed storage capacity requirements and the vessels are secured to the seabed via mooring systems which are determined by the environment in which they operate.



### Physical Capital

- 12 offshore floating solutions
- 1 FPSO under construction



### Services Performed

- Engineering, procurement, construction, installation, commissioning, operations and maintenance, decommissioning and demobilisation (EPCICODD) solutions
- Own, operate and maintain offshore floating assets to extract, store and offload hydrocarbons to shuttle tankers



### Competitive Advantage

- Highly skilled workforce
- Strong relationships of mutual trust with key Asia-based partners, subcontractors and suppliers
- Outstanding contractual deliveries



**SEMI-SUBMERSIBLE FLOATING PRODUCTION SYSTEM (SEMI-FPS)**

A large pontoon-like structure submerged below the sea surface at a predetermined depth with an FPS that receives fluids such as crude oil, water and others from a subsea reservoir through risers. Topside production facilities separate the fluids into crude oil, natural gas, water and impurities. Our Semi-FPS operates at a depth of 1,400 metres. The oil is exported via a 200-kilometre long pipeline to an oil and gas terminal in Kimanis, Sabah.



**FLOATING PRODUCTION, STORAGE AND OFFLOADING (FPSO)**

A vessel-type production system that receives full well stream fluids such as crude oil, water and others from a subsea reservoir through risers. It has topside production facilities that separate the fluids into crude oil, natural gas, water and impurities. It also has storage tanks where processed crude oil is stored. Crude oil is offloaded onto tankers for further refining onshore. It can be designed with the capability of staying on location for continuous operations for 20 years or longer.

**FLOATING STORAGE AND OFFLOADING (FSO)**

Simpler than an FPSO, an FSO unit does not have production processing capabilities. It is normally integrated with other production systems such as fixed platforms, mobile offshore production units and tension leg platforms. An FSO is also equipped to store and offload crude oil to a tanker.



The assets we own and operate are those which enable us to provide comprehensive marine services for a wide range of offshore facilities and vessels within our six major solutions of offshore, onshore, conversion, marine repair and refurbishment, plant maintenance and turnaround and other services.



### Physical Capital

- Dry Dock 1,2 and 3
- Fabrication yards
- Land berth cranes



### Services Performed

- Heavy Engineering Segment
  - Wide range of EPCIC services for offshore facilities
  - Fabrication services for onshore modules and facilities
- Marine Segment
  - Conversion of offshore facilities in one location
  - Repair and refurbishment for various types of vessels, rigs and marine facilities
- Plant Maintenance and Turnaround
  - Plant shutdown and maintenance
  - Routine maintenance and upgrading works



### Competitive Advantage

- Own and operate one of the region's largest marine and heavy engineering facilities
- The only Malaysian yard with the capacity and skills to undertake complex offshore mega structures and marine facilities projects



**HEAVY ENGINEERING ASSETS**

We have the largest fabrication area by tonnage capacity in Malaysia, to provide EPCIC of complex structures for offshore and onshore facilities.



**MARINE BUSINESS ASSETS**

Our well-equipped yard includes three dry docks, land berths, quays and a shiplift. These facilities enable us to perform repair works, maintenance, marine conversion and refurbishment of a wide range of vessels.

# WHAT WE DO



### Services Performed

- Shipmanagement, engineering and procurement
- Project management - supervision and consultancy service for dry docking and new building of vessels



### Competitive Advantage

- Specialised experience in niche areas of LNG bunkering vessels, very large ethane carriers, floating storage and regasification, dynamic positioning shuttle tankers, dual-fuel crude tankers and modular capture vessel
- Deep knowledge of regional shuttle tanker trade in the Brazilian basin and Northern Europe
- Globally renowned shipmanagement company, with stellar track record for the highest quality and standards of delivery



### Services Performed

- Operator of ports and terminals
- Pilotage, mooring master, loading master and marine controller services
- Jetty maintenance services
- Single Point Mooring maintenance services
- Logistic support services
- Ship vetting services
- Offshore vessel inspection services
- Marine assurance and consultancy services which includes ship screening, TMSA, OVMSA and RMMS



### Competitive Advantage

- Strong industry reputation, with more than two decades of experience in port and terminal operations, and maritime services
- Own proprietary digital applications for VIS and OSVIS
- The acknowledged and preferred operator for the Terengganu Crude Oil Terminal, Miri Crude Oil Terminal, Bintulu Crude Oil Terminal and Sabah Oil and Gas Terminal



### Services Performed

- Conducts Pre-Sea Diploma, Post-Sea, Ratings and Modular Programme
- Research and consultancy services



### Competitive Advantage

- Providing a broad spectrum of maritime education and training, beyond STCW
- Research and consultancy expert, providing flexible solutions encompassing the total lifecycle of port development





# HOW WE MOVE ENERGY

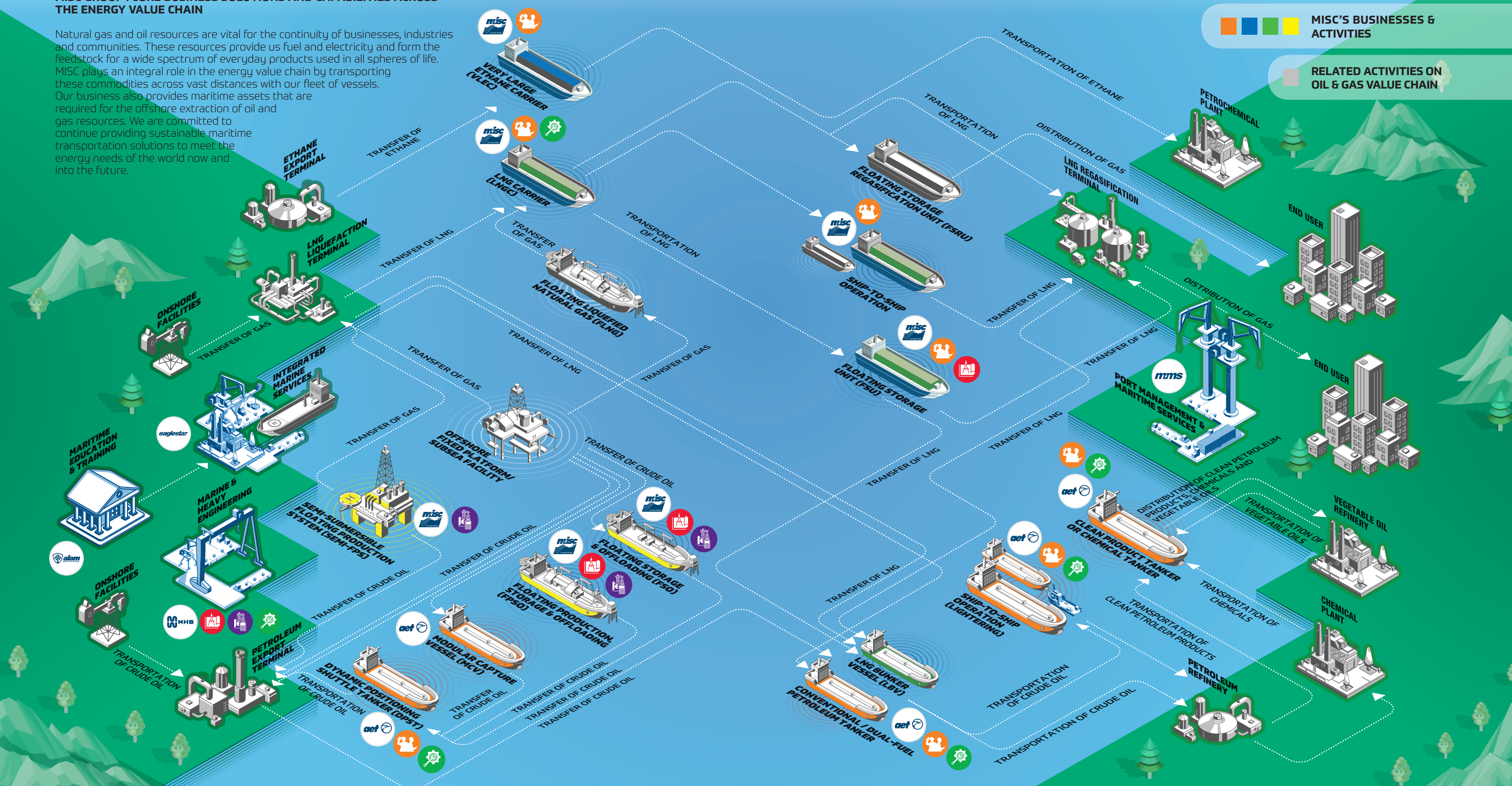
## MISC GROUP : CORE BUSINESS SOLUTIONS AND CAPABILITIES ACROSS THE ENERGY VALUE CHAIN

Natural gas and oil resources are vital for the continuity of businesses, industries and communities. These resources provide us fuel and electricity and form the feedstock for a wide spectrum of everyday products used in all spheres of life. MISC plays an integral role in the energy value chain by transporting these commodities across vast distances with our fleet of vessels. Our business also provides maritime assets that are required for the offshore extraction of oil and gas resources. We are committed to continue providing sustainable maritime transportation solutions to meet the energy needs of the world now and into the future.

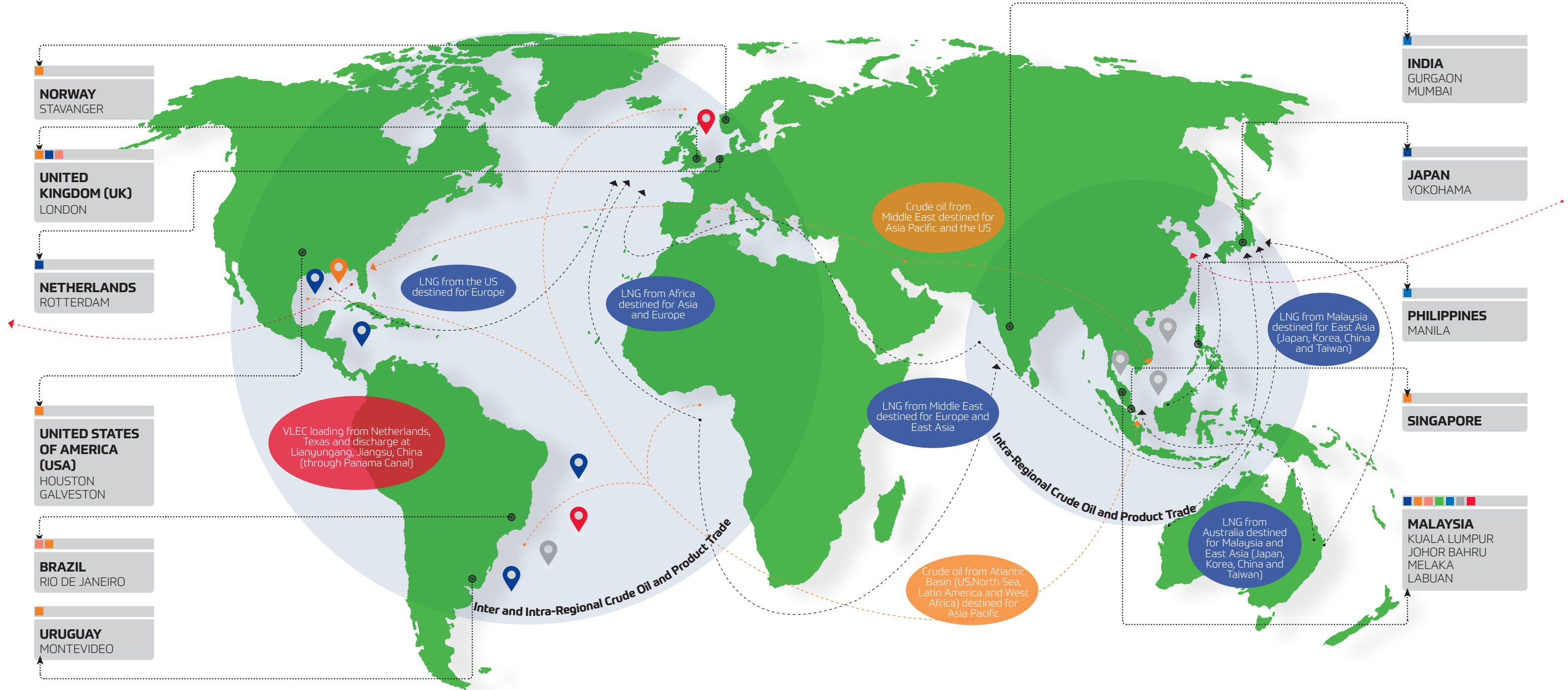
- Complete/Full Range Offshore Platform EPCIC Services for Offshore & Onshore Construction
- Comprehensive Marine Repair & Refurbishment
- Marine Conversion Works
- Shipmanagement

MISC'S BUSINESSES & ACTIVITIES

RELATED ACTIVITIES ON OIL & GAS VALUE CHAIN



# WHERE WE OPERATE



- GAS ASSETS & SOLUTIONS
- PETROLEUM & PRODUCT SHIPPING
- OFFSHORE BUSINESS
- MARINE & HEAVY ENGINEERING
- INTEGRATED MARINE SERVICES
- PORT MANAGEMENT & MARITIME SERVICES
- MARITIME EDUCATION & TRAINING

## MISC GROUP'S GLOBAL BUSINESS NETWORK

## SHIPPING ROUTES AND ASSET LOCATIONS

- KEY LNG TRADE
- KEY VLCC TRADE
- KEY VLEC TRADE
- 📍 LIGHTERING
- 📍 DYNAMIC POSITIONING SHUTTLE TANKERS
- 📍 MODULAR CAPTURE VESSELS
- 📍 OFFSHORE ASSETS

THESE ARE OUR MAIN TRADE ROUTES ONLY AND NOT MEANT TO BE AN EXHAUSTIVE LIST

# CHAIRMAN'S STATEMENT



DATUK ABU HURAIRA  
ABU YAZID  
Chairman

**Our efforts demonstrate how 2022 has been MISC's year of Powering Resilience as we harness our Group's collective capabilities and capitalise on opportunities that will strengthen our position and set us on the right course towards achieving our long-term aspiration of building a Sustainable Future.**

## DEAR STAKEHOLDERS,

At MISC, sustainability remains at the heart of everything that we do. We firmly believe that sustainability is not an optional concern, but a vital necessity that requires everyone to take action and work together to achieve the sustainable future of a net-zero world by 2050.

"Sustainability" is an important agenda in the maritime industry, as it plays a vital role in preserving the environment and natural resources which are essential for the long-term health and prosperity of the industry and community it serves.

2022 was the year that the global maritime industry took progressive steps to accelerate sustainable transformation across the industry guided by the Environmental, Social and Governance (ESG) principles at the core of their strategies and operations. It is important to have the mindset that ESG is a journey, not a quick fix and I am encouraged to see various players in the maritime ecosystem collaborating together to identify issues, develop innovative solutions and drive the changes that are necessary to build a sustainable future.

The maritime industry continues to move away from the perception of being a "traditional industry" as its modernisation efforts go beyond embracing digital technologies and solutions. This includes addressing the issues of gender imbalance and creating a more diverse, inclusive and equitable industry. The year marks the inaugural celebration of the International Day for Women in Maritime on 18 May 2022 which puts the spotlight on the women in the maritime industry, be it at sea and shore and their contribution to the industry's progress and future as part of the larger maritime community.

Most importantly, the year saw the maritime industry's global climate commitment amplified at COP27 with the launch of the Green Shipping Challenge, a global pledge to reduce shipping's emissions. Under the Green Shipping Challenge, governments, ports, and companies are urged to establish their emissions reduction commitments that will help put the shipping sector on a pathway within this decade to align with the goal to limit global temperature rise to 1.5 °C.

As a member of the global maritime industry, MISC is cognisant of the impacts our business has on the environment and we have been proactively working towards reducing environmental impacts and improving stewardship of the marine environment. We are addressing challenges by adopting sustainable practices to preserve the environment, the ocean and natural resources, as our contribution to the overall health and well-being of our planet.

Sustainability is embraced on all fronts across the MISC Group – from governance structures and processes at the Board level to the various changes and fine-tuning we have incorporated within the Group to further embed ESG objectives. We are walking the talk – not greenwashing – by working on solutions and offering low-carbon asset services that will ensure we systematically reduce emissions within the entire value chain.

I am heartened to know that the Group is moving beyond the conventional concept and approach of sustainability by integrating our current strategic initiatives with ESG principles to ensure that we execute our business with the goal of generating sustainable value well into the future, or what I would like to term as "SustainabilityPlus". Our approach has enabled the Group to power our resilience and expand our capability and capacity for new growth areas in our bid to grow sustainably and create value in the long term.

MISC's Climate Framework is our whole-of-organization response to addressing climate change imperatives as a responsible maritime player. The Climate Framework is based on the "Task Force on Climate-Related Financial Disclosures ("TCFD") recommendations and consists of four core elements that represent the Group's climate management, namely climate governance, strategy, risk management, and metrics and targets.

The TCFD is an important tool for the maritime sector as climate change is expected to have significant impacts on the industry. Rising sea levels and more frequent extreme weather events could damage ports, infrastructure, and vessels, while changes in global trade patterns could affect the demand for shipping and services. Through our disclosures in the TCFD Report, we are providing transparent accounts of the Group's exposure to climate-related risks and opportunities, as well as our efforts in this space.

We embarked on our TCFD journey in 2021 by analysing climate change-related scenarios and their impacts on our core businesses of Gas Assets and Solutions (GAS), Petroleum & Product Shipping, Offshore Business and Marine & Heavy Engineering. For 2022, we have extended this analysis to the business segments of Maritime Education & Training, Port Management & Maritime Services, and Integrated Marine Services. Additionally, we implemented climate-related risk integration measures into our risk management process and formalised the climate scenario analysis process as part of MISC's annual strategic planning exercise.

On 1 January 2023, two key IMO regulations came into force which are the Energy Efficiency Existing Ships Index (EEXI) and the Carbon Intensity Indicator (CII). The introduction of these new regulations will help regulate GHG emissions from the shipping industry. The dynamically evolving regulatory landscape also features upcoming regulations such as the European Union Emissions Trading System (EU ETS) which is expected to expand to the shipping sector by 2024, the FuelEU Maritime Regulation, which is anticipated to apply to vessels come 2025, and explorations of new and innovative emission reduction mechanisms such as market-based measures (MBMs) to incentivise GHG emission reductions.

The Group is responding to these fast-changing demands through a series of different initiatives. One of the initiatives that are currently in progress is the development of our own internal carbon pricing. By assigning a monetary value to the CO<sub>2</sub> emissions we produce, MISC will be well placed to use this in conjunction with external carbon pricing mechanisms such as carbon taxes or cap-and-trade systems which put a price on CO<sub>2</sub> emissions at the national or international level.

Other notable initiatives that the Group has embarked on include the Petroleum Product & Shipping business segment's exploration of GHG abatement technologies to reduce methane emissions from LNG-fuelled vessels and carbon capture technologies for retrofitting into the existing fleet. MISC has also formed incubation workgroups at the Group level which are reviewing GHG abatement technologies suitable for us to integrate into our fleet.

As we move into 2023, the Board of Directors has made the decision that no future investment will be made in conventional assets, and MISC will instead focus on allocating investments into green assets. By this, we do not just mean eco-friendly vessels but are actively exploring other new green asset classes we can add to our portfolio. For this purpose, we have allocated 38% of our capex as "Green Capex".

I am proud that the Group's efforts in the sustainability sphere have been acknowledged through various awards regionally and globally. MISC was honoured by Alpha Southeast Asia as the proud inaugural recipient of the Strongest Commitment to Energy Transportation Award for Malaysia and was also ranked among the Top 5 Malaysian companies in the Most Organised Investor Relations award category for the third time.

We are proud to once again be recognised as a constituent in the Dow Jones Sustainability Emerging Markets Index for the second consecutive year and FTSE4Good Index for the ninth year in a row.

The Group's commitment to upholding the highest standards of health, safety, security & environment (HSSE) was further recognised at the 40<sup>th</sup> Malaysian Society for Occupational Safety and Health (MSOSH) Awards 2022, winning six awards including one "Grand" award, three "Gold Class 1" awards, one "Gold Class 2" award and one "Gold Merit" award.

I am honoured to present to you the MISC Sustainability Report 2022 which provides details of our sustainability progress, performance and achievements for the year, as well as our plans to propel the momentum to achieve our goals and targets. Our efforts demonstrate how 2022 has been MISC's year of Powering Resilience as we harness our Group's collective capabilities and capitalise on opportunities that will strengthen our position and set us on the right course towards achieving our long-term aspiration of building a Sustainable Future.

On behalf of the Board of Directors, I would like to take this opportunity express our deepest appreciation our stakeholders for your tireless support, commitment and contributions. Thank you for being part of the MISC Group's sustainability journey.

# CHAIRMAN OF BSRC'S STATEMENT



**DATIN NORAZAH MOHAMED RAZALI**  
Chairperson  
Board Sustainability & Risk Committee

**We will continue to review existing and emerging regulatory requirements related to climate change including applicable external carbon prices, potential low-carbon technologies to improve GHG emissions and vessel efficiency, as well as the performance of our assets.**

## DEAR STAKEHOLDERS,

Sustainability issues are becoming increasingly more important for the maritime sector. As a maritime industry player, MISC is committed to play our role in reducing emissions towards achieving the net-zero future of 2050. Besides our environmental contributions, the Group is also championing social rights such as fair treatment of shore and sea workers, and promoting diversity and inclusion within the workforce. At the same time, we are giving back to society through various community-centred initiatives.

Our business activities and operations are backed by strong governance which is critical to ensure transparency and responsible management as we continue to engender trust with our stakeholders to maintain our strong and credible industry reputation. At the same time, sustainability concerns are also informing our strategic business decisions, as we tap into new business opportunities and create competitive advantages.

In 2022, the Board of Directors (Board) approved the change in the name of the Board Governance and Risk Committee to the Board Sustainability and Risk Committee (BSRC) effective 1 January 2023. This name change reflects MISC's commitment to address value creation through the lens of sustainability risks and opportunities.

### ESG AND SUSTAINABILITY INTEGRAL PART OF MISC

The energy transition, which involves a shift away from fossil fuels towards cleaner and more sustainable energy sources, is having a significant impact on the maritime sector. At MISC, we have set our course to achieve the IMO's industry decarbonisation goals by embedding ESG and sustainability within MISC's business model and strategies.

The BSRC's oversight on ESG and sustainability risks and opportunities are an integral part of the Group's overall business strategy, and informs decisions made at the Board and Management levels. Throughout 2022, the BSRC has been focusing on how we can transition the MISC business as a whole by lowering carbon emissions in our current portfolio, as well as exploring investments to enhance the existing portfolio. Following on from the Board decision in 2022 to embed sustainability risks as a key component of BSRC reviews, we have continued to enhance our climate risks and opportunities disclosures in our Sustainability Report.

### COMMITMENT TO CLIMATE TRANSITION AND MITIGATING CLIMATE CHANGE

The Group remains committed to our climate transition plan where we are transitioning our fleet to LNG dual-fuel vessels and low-carbon vessels in the short- to medium-term, before moving on to our longer-term plan to re-fleet to zero-carbon emission vessels. Our efforts to transition to low-carbon operations before moving on towards our long-term commitment of reaching a net-zero state by 2050 are enabling the Group to contribute to the reduction of GHG emissions and reduce our impact on ocean health. As at the end of 2022, we have a total of 11 low-carbon dual-fuel vessels within our existing fleet and have committed to deliver our first two ammonia-fuelled zero-carbon emission vessels in 2025 and 2026 through our partnership in The Castor Initiative.

At the same time, we are cognisant that the rapid onset of energy transition may also reduce the need to transport oil and gas, thus reducing market demand for tankers. To ensure our long-term business viability, MISC 2050 is our long-range strategy to diversify and explore new income streams along the renewable energy and waste-to-value chain that can complement our existing portfolio. At the BSRC, we are performing our oversight function in relation to new investments that MISC is considering within these two value chains, as well reviewing the Group's digital ventures and the way forward.

Having embarked on our commitment to combat climate change since 2016, in 2021 we had stepped up on this through the implementation of climate scenario analysis in line with the Intergovernmental Panel on Climate Change's (IPCC) sixth assessment report. We have reviewed and assessed our business resilience under two global warming scenarios, a low emissions pathway of 1.5 °C and a high emissions pathway of 4 °C. Since becoming a supporter of the Task Force on Climate-Related Financial Disclosures (TCFD) in 2021 and issuing our inaugural TCFD Report in our Sustainability Report 2021, we have stepped up on implementing the TCFD Framework within the Group. In the 2022 TCFD Report, we have expanded the scope of our TCFD initiatives to include our key enablers' business segments. We have also implemented climate-related risk integration measures into the existing risk management process and formalised the climate scenario analysis process into MISC's annual strategic planning exercise. Thus, MISC's approach to adopt the TCFD as a strategic tool enables us to integrate our learnings into our five-year rolling business plans and sustainability strategy, as well as our longer range MISC 2050 strategy.

### SUSTAINABILITY-RELATED CONSIDERATIONS

The rapid advancement of technology in the maritime sector is significantly impacting the workforce, both in terms of the skills that are required and the tasks that are performed by shore and seafaring workers. As automation and digitalisation become more prevalent, some of the existing roles would need to be resized.

As such, MISC constantly reviews the need to re-skill and upskill our talents to use and adapt to new technologies and processes, as well as improve our talent attraction and retention benefits. The Group takes talent development seriously and has designed a comprehensive career management framework that covers recruitment, development and employee participation programmes and employee welfare.

As the maritime industry becomes more connected and reliant on technology, there is also the need for MISC to ensure that we have a robust cybersecurity framework in place to protect against potential threats and breaches to our operations, infrastructure and sensitive information. We have stepped up on our cybersecurity measures to protect the Group against potential cyber-attacks that could cause disruptions to our business.

Another key sustainability consideration the BSRC reviewed during the year was supply chain risks, opportunities, and collaborations. In 2022, MISC embarked on a Responsible Supply Chain Programme to conduct an ESG self-assessment on our critical suppliers. We plan to work collaboratively with our supply chain should any ESG gaps be identified, to further embed ESG into the value chain which will benefit both MISC and the entire ecosystem. We have also implemented a Code of Conduct and Business Ethics for Third Parties which outlines the requirements for good business ethic practices. The Group's investment in supply chain ESG risk management not only ensures compliance with prevailing regulations for all parties concerned, but also helps build a stronger and more resilient maritime sector.

### VALIDATIONS OF OUR SUSTAINABILITY COMMITMENT

The Group's sustainability commitment as demonstrated by our strong ESG practices and performance has enabled us to retain our listing on the Dow Jones Sustainability Index (Emerging Markets) for the second consecutive year and on the Bursa Malaysia FTSE4Good Index for nine years. MISC has also been rated as a "Low Risk" company by Sustainalytics for two consecutive years. We are proud of our achievements on this front and will continue to drive our ESG value creation to maintain our listings on these ESG indices and score good ratings for our ESG risks.

### OUR PLAN FOR 2023

Moving forward into 2023, we will continue to focus on climate risks by enhancing MISC's investment decisions through the lens of the climate-related risks of carbon emissions of new assets before proposing options to mitigate, transfer, accept, or control those risks. We will continue to review existing and emerging regulatory requirements related to climate change including applicable external carbon prices, potential low-carbon technologies to improve GHG emissions and vessel efficiency, as well as the performance of our assets.

MISC has begun making inroads into developing our internal carbon pricing mechanism. By conducting sensitivity assessments using internal carbon pricing, we will be able to evaluate the potential financial impact of different carbon pricing scenarios on MISC's operations and financial performance. We plan to calculate the total GHG emission and intensity rates of new assets to ensure alignment with MISC's climate commitment. Beginning 2023, we will apply our internal carbon pricing in the sensitivity analysis considerations of our projects.

The year ahead also will see us promoting the importance of ESG to our supply chain by engaging with them and influencing them to embrace the ESG journey in the areas of climate action, promoting circular economy, health and safety, business ethics and human rights. I am confident that our proactive and value chain inclusive approach to ESG and sustainability will enable us to effectively address both risks and opportunities in this area, to create a sustainable future for the Group and our stakeholders.



# PRESIDENT/GROUP CEO'S STATEMENT



**CAPTAIN  
RAJALINGAM SUBRAMANIAM**  
President/  
Group Chief Executive Officer

**To focus on the new energy opportunities to drive forward MISC's 2050 vision, we have incubated a new green energy unit under my office. To ensure that our talents are equipped with the skills and knowledge to drive our new green business ventures, we will continue to invest in our people and reskill and upskill their capabilities.**

## DEAR STAKEHOLDERS,

I am pleased to present our MISC Sustainability Report 2022, my first in my capacity as the President & Group CEO.

As I've stated previously, I would like to reaffirm MISC's commitment to all our stakeholders on our ESG and sustainability targets, particularly to reduce GHG intensity by 50% by 2030 and achieve net-zero GHG emissions by 2050.

MISC as a Group has shown significant progress during the year, as evidenced by numerous MOU signings with like-minded partners across industries to accelerate the pace of the energy transition. During the year, we also focused on the execution of meaningful programmes and initiatives to deliver our sustainability commitment in line with MISC's Sustainability Strategy.

### COMMITTING TO NET-ZERO BY 2050

MISC's net-zero commitment is anchored to our dual growth strategy to keep moving the much-needed energy of the world responsibly and, at the same time, progress on the pathway to thrive in the net-zero and circular economy of 2050. Our dual growth strategy is evolving the Group's existing business model in two ways.

First, through the decarbonisation of our existing operations, by progressively converting our fleet and ensuring all newbuilds from 2031, or sooner, are zero-carbon emission vessels. Additionally, we are continuously deploying energy-efficient technologies within our assets and operations to increase operational efficiencies.

Second, we are exploring new business income streams in line with the MISC 2050 strategy. In 2022, we established a task force to evaluate innovative solutions in CCUS. The task force pooled knowledge and expertise across the Group to create a team that is tactically focused, strategically integrated, and ready to face the transition ahead.

To incorporate climate-related risks and opportunities within our strategic function, we included climate-related strategic initiatives and annual GHG emission intensity targets as part of our existing ESG-related Key Performance Indicators (KPI) in the 2022 Group Balanced Scorecard.

### COLLABORATION – MOVING FORWARD TOGETHER

Throughout the year, we continued our collaboration with other key players in the maritime ecosystem.

Through MHB, we secured both the FEED and EPCIC services contracts from PETRONAS Carigali Sdn. Bhd. (PCSB) for their Kasawari CCS project off Sarawak, Malaysia. This milestone project will be Malaysia's first CCS project as well as the world's largest offshore CCS project by volume of carbon dioxide (CO<sub>2</sub>) captured and has the ability to capture up to 3.3 million tonnes of CO<sub>2</sub> equivalent annually.

We also entered into MOUs with Mitsui & Co. Ltd, Samsung Heavy Industries and Andritz AG in January 2023 to tap into opportunities for CCS solutions in the maritime value chain, including identifying storage hubs, development of floating solutions as well as carbon capture parts and equipment. We believe carbon capture and storage technologies, and other related infrastructure are pivotal measures to support and accelerate the transition towards a low-carbon future.

To realise the adoption of ammonia as a propulsion fuel, our Petroleum arm, AET, signed two MOUs with like-minded industry players to take the lead in developing and constructing zero emission tankers. We also welcomed TotalEnergies into the Castor Initiative, adding to the multinational coalition of diverse maritime experts committed to making zero-emission ammonia-fuelled vessels a reality.

Furthering our decarbonisation agenda, MHB entered into an MOU with Silverstream Technologies, a provider of air lubrication systems which reduces vessel fuel consumption. MHB also signed an MOU with Bureau Veritas Solutions to provide technical and consultation services on vessel efficiency improvement as well as retrofit strategies. MHB will provide retrofit works on both existing and newbuild vessels to comply with EEXI and CII requirements.

Our journey towards a decarbonised future will also require us to build the capabilities of youth to be industry ready as the workforce of the future. In 2022, we partnered with Universiti Tun Hussein Onn Malaysia (UTHM) to provide undergraduates with hands-on industrial training and learning experience for a year at MHB.

### SUSTAINABILITY STRATEGY – 2022 IN REVIEW

The five pillars of MISC's 2021 – 2025 Sustainability Strategy form the mainstay of delivering our sustainability commitments to our key groups of stakeholders. During the year, our focused execution of initiatives and programmes continued to generate meaningful outcomes for our stakeholders.

Within the Finance Pillar, MISC's strong market credibility enabled us to secure a syndicated USD527 million Sustainability Linked Loan (SLL). The SLL includes two Key Performance Indicators (KPIs) featuring targets for GHG and governance. We will continue to explore SLL solutions to support our sustainability ambitions.

We also expanded the scope of our Task Force on Climate-Related Financial Disclosures (TCFD) Report 2022 to include our key enablers' business segments of Integrated Marine Services, Port Management & Maritime Services and Maritime Education & Training. Furthermore, we implemented climate-related risk integration measures into the existing risk management process and formalised the climate scenario analysis process into MISC's annual strategic planning exercise.

A key advancement of our Environment Pillar in 2022 was driven by the development of our material Scope 3 inventory and the exploration of the use of shadow pricing in our business investments. Our commitment to make a positive impact on ocean biodiversity is reflected through the Group's signature Heart of the Ocean (HOTO) marine biodiversity conservation programme which encompasses reef, sea-turtles and mangrove conservation.

Within the Social Pillar, we progressed with our commitment to Diversity and Inclusion (D&I) with the Board approval of our D&I Policy and the subsequent establishment of our overall D&I Journey Map and Aspirational Target.

We remain committed to nurturing future leaders for the industry and providing equitable opportunities to young people. We sponsored over 700 students through the ALAM cadet sponsorship programme, and provided sponsorships and internships in the various localities in which we operate around the world, focussing on those coming from less advantaged backgrounds.

With communities still recovering from the pandemic, we continued to work with local partners around the world to make a positive impact by funding over a million meals in 2022. Many of our employees also volunteered their time in support of these meaningful initiatives.

We also launched our Employee Participation Programme as part of our HOTO initiative which empowers our people to contribute and give back to our planet and society by engaging with local communities.

Further, we developed the MISC Ship Recycling Policy and Guidelines to ensure our ships can be recycled in a responsible and sustainable manner, and in accordance with the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships (The Hong Kong Convention). In 2022, we conducted a ship recycling yard pre-assessment programme to assess the conditions and suitability of the yards and shortlisted a list of preferred ship recycling yards which will enable us to deliver on our commitment.

Initiatives under the Governance Pillar enabled the Group to further strengthen our corporate governance. In 2022, we implemented company-wide and management compliance scorecards to measure the compliance levels within MISC, covering both management and employees.

To drive a robust culture of ethics and compliance, we use the Compliance and Ethics Survey to measure the effectiveness of the Compliance and Ethics Programme's initiatives. Leveraging on key takeaways from the survey, we formulated action plans to further improve our compliance and ethics culture.

Our Stakeholder Engagement pillar underpins our sustainability strategy and ensures we continuously deepen and strengthen our relationships with our diverse groups of stakeholders through various communication platforms and initiatives. In 2022, we conducted a Group-wide stakeholder engagement survey, and the results show we meet and exceed our stakeholder expectations on our sustainability agenda.

## AWARDS AND RECOGNITIONS IN 2022

Our strong sustainability focus and commitment led to Alpha Southeast Asia awarding MISC the inaugural award for the Strongest Commitment to Sustainable Energy Transportation. MISC and MHB were proud recipients of the Silver Awards at The Edge ESG Awards 2022 under the Transportation and Logistics and Energy categories, respectively.

We are proud to once again be listed as a constituent in the Dow Jones Sustainability Emerging Markets Index for two years running and the FTSE4Good Bursa Malaysia Index for nine consecutive years. During the year, MISC obtained one Grand and five Gold Awards at the Malaysian Society for Occupational Safety and Health (MSOSH) Awards 2022, testament of our strong Generative HSSE Culture.

## OUR FOCUS FOR 2023

Our focus for 2023 is both to value add and value create. Not just for us as a business, but also for the maritime industry. Towards accelerating our long-term strategy, we will focus on three key areas, namely business transformation, strategic client positioning, and evolving the organisational culture and behaviour. A strategic business review is currently underway towards enabling the transformation of our business model.

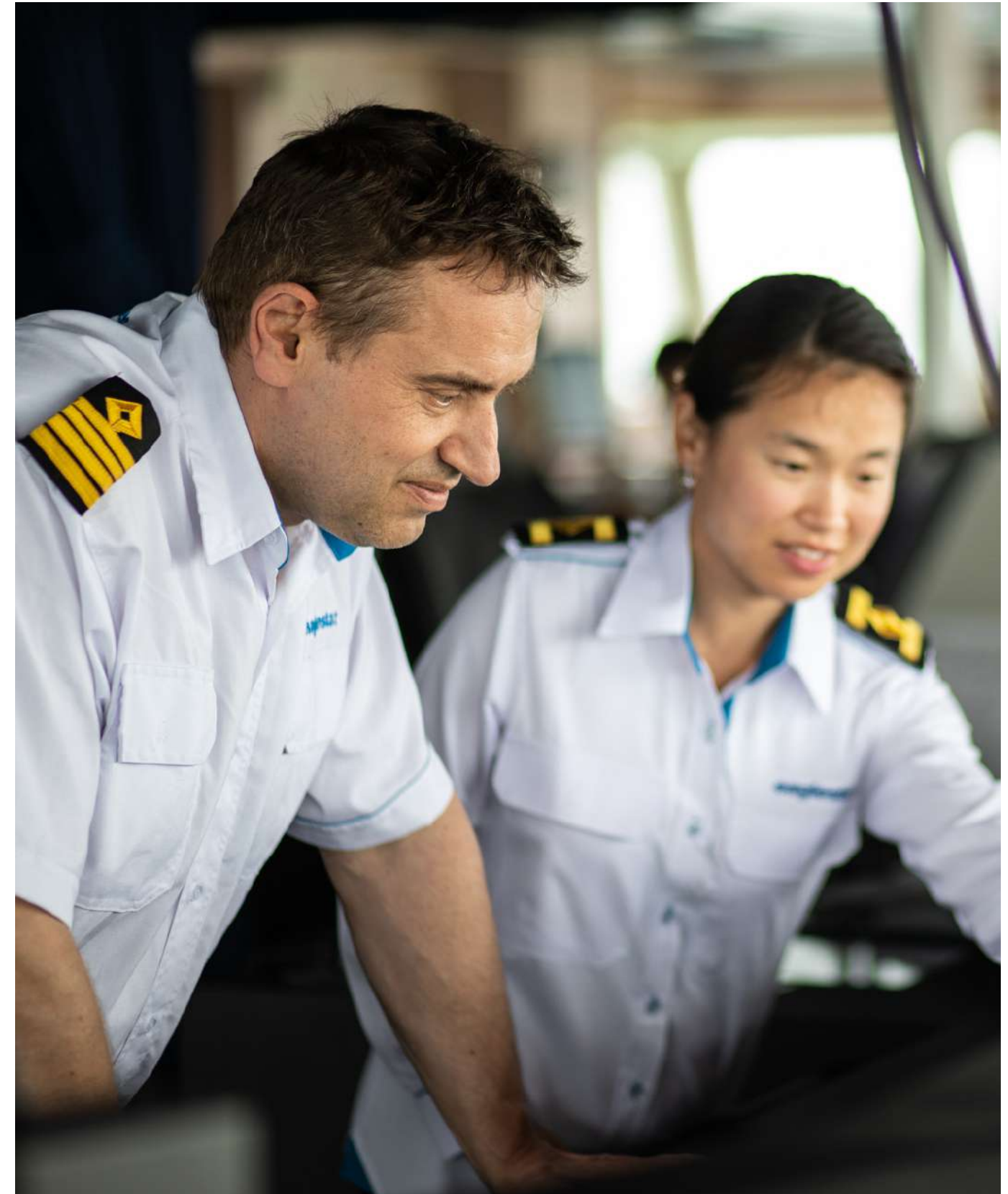
By aligning and collaborating with key industry leaders, we will enhance our strategic client positioning as a green asset and solutions provider. Alongside that, MISC will drive the adoption of a broader and adaptive mindset to shift our organisational culture and behaviour to become more resilient and innovative to meet the demands of a low carbon future.

To focus on the new energy opportunities to drive forward MISC's 2050 vision, we have incubated a new green energy unit under my office. To ensure that our talents are equipped with the skills and knowledge to drive our new green business ventures, we will continue to invest in our people and reskill and upskill their capabilities.

2022 has seen MISC enter landmark MOUs to collaborate with like-minded industry partners on the development of zero-emission vessels. We plan to push forward on this front and make ammonia powered zero-emission vessels a reality within the medium-term future. Having powered our resilience through our sustainability centred strategic pursuits, the Group has shored up our ability to not just create rewards for our business but contribute to building a sustainable future for all.

As a responsible corporate citizen, we shall continue to create a positive difference to the lives of communities by donating our time and energy in various social and environmental initiatives.

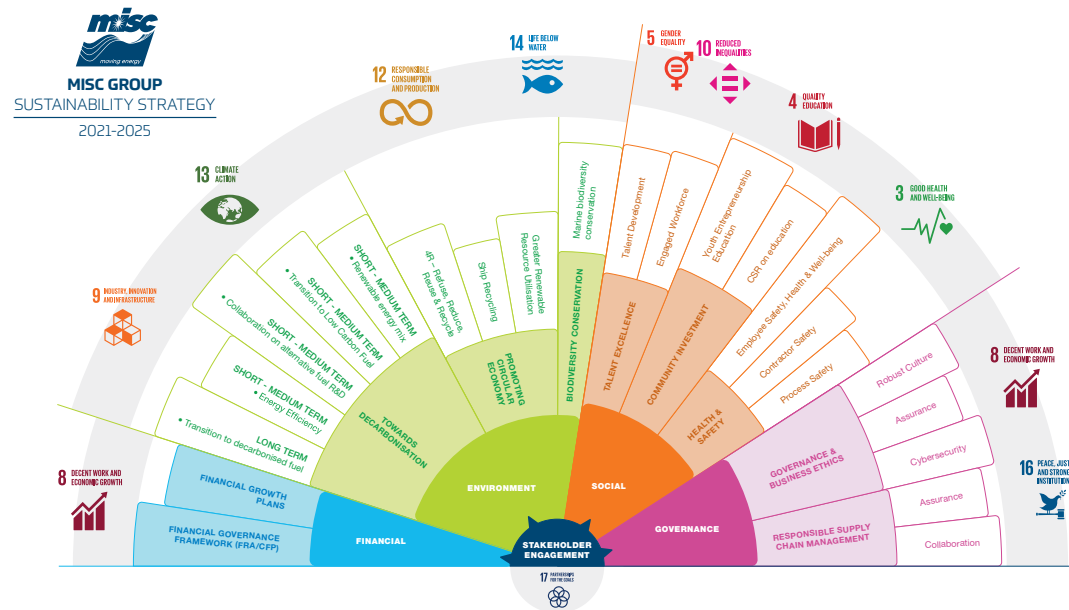
In our sustainability journey, we need to partner those who share our ambitions and must ensure it is not a zero-sum outcome. Collaboration is essential, and we have taken steps to reinforce our industry collaboration as outlined in this report. We invite our stakeholders to join us on this journey, with purpose and intent.



# OUR SUSTAINABILITY VOYAGE

MISC Group is steadfast in growing its businesses to become one of the world's most sustainable energy-related maritime solutions and services provider.

Our sustainability mission is to deliver long term stakeholder value by operating safely, sustainably and responsibly to sustain positive impacts for the environment and society.



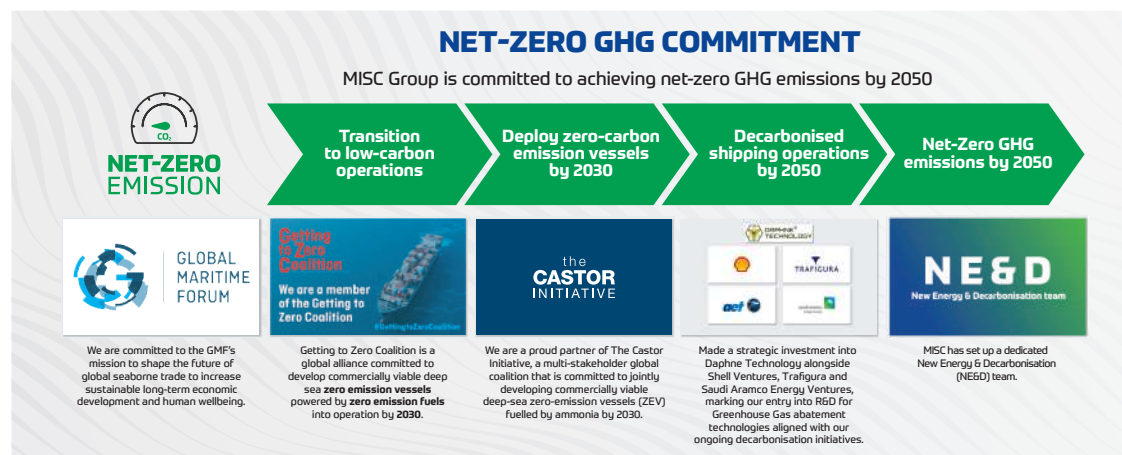
MISC Group's Sustainability Strategy aligns with the United Nations Sustainable Development Goals (UNSDG) by prioritising 11 key goals in line with the Company's business practices and sustainability framework.



## OUR CLIMATE COMMITMENT

**Net-Zero Greenhouse Gas Emissions by 2050**

**50% reduction in GHG intensity emissions by 2030 compared with 2008 base year**



## OUR KEY SUSTAINABILITY MILESTONES AND ACHIEVEMENTS

### 2012-2015

#### MILESTONES

- Launched the MISC Sustainability Framework

#### ACHIEVEMENTS

- Received the Best First-time Reporting Awards at MASRA 2015
- Became a constituent of FTSE4Good Bursa Malaysia

### 2016-2020

#### MILESTONES

- Initiated carbon emissions reduction target
- Renewed fleet with better energy efficiency vessels and took delivery of first LNG dual-fuel vessel
- Joined the Getting to Zero Coalition

- Established MISC Group Human Rights Commitment and Modern Slavery Policy

- Established Flagship Biodiversity Programme

#### ACHIEVEMENTS

- Received Sustainable Business Awards 2019
- Received recognition at the Prime Minister Hibiscus Award (PMHA) for Notable Achievement in Environmental Performance

### 2021-2022

#### MILESTONES

- Pledged Net-Zero GHG emissions Commitment by 2050
- Renewed GHG Intensity targets for 2030
- Initiated Taskforce on Climate-related Financial Disclosure (TCFD) Reporting

- Renewed Getting to Zero Coalition - Call for Action Pledge in 2021
- The Castor Initiative – develop ammonia-fuelled zero-carbon emission vessels

- Member of Climate Governance Malaysia since 2021

- Signatory to Neptune Declaration on Seafarer Wellbeing
- Established MISC Group Ship Recycling Policy in 2021

- Established MISC Group Diversity and Inclusion Statement in 2021

#### ACHIEVEMENTS

- Received Sustainable Business Awards 2020/21
- Became constituent of Dow Jones Sustainability Index (Emerging Market) in 2021 and 2022
- MISC Berhad has been included in the S&P Global Yearbook 2023 as the Sustainability Yearbook Member for the first time
- Conferred Strongest Commitment to Sustainable Energy Transportation award by Alphas Southeast Asia in 2022
- Rated 4 Star in FTSE4Good Index and constituent for 9 consecutive years
- Received the Silver Award at The Edge ESG Awards under the Transportation sector for MISC and Energy sector for MHB
- Our first LNG dual-fuel VLCC *Eagle Valence* won the Tanker of the Year Award 2022 at the Tanker Shipping & Trade Awards



OUR PROGRESS IN 2022

FINANCIAL PILLAR

To achieve growth in predictable and recurring sources of cashflow

Revenue  
**RM 13.87**  
billion

Operating Profit  
**RM 3.10**  
billion

Cashflows From Operating Activities  
**RM 3.04**  
billion

Read more on our Sustainable Assets and Services in Economic Value Creation section.

- Owned 11 dual-fuel low-carbon vessels (including 3 vessels under construction)
- 1 MOU signed with PTT for the delivery of the ZEV in 2025 & 2026
- Secured USD 527 million 11-year Sustainability Linked Loan (SLL) to finance the delivery of its six very large ethane carriers (VLEC) purchased in July 2020
- Second year TCFD report includes all business units and subsidiaries
- Internal Carbon Pricing (Shadow Price) at USD50/tonne CO<sub>2</sub>e to be used as initial sensitivity analysis in new investments beginning 1 Jan 2023.

ENVIRONMENT PILLAR

Towards Decarbonisation

- Transition to low-carbon operations
- Deploy zero-carbon emission vessel by 2030
- Decarbonised shipping operations by 2050
- Net-Zero GHG emissions by 2050

Read more on Our Decarbonisation pathway section.

- Developed Material Scope 3 inventory
- The Castor Initiative – MOU signed with Lloyds Register and Samsung Heavy Industries to build 2 VLCC zero-emissions vessels by 2025 and 2026.
- Reduced 17% GHG intensity compared with 2008
- Total GHG: 4.2 million tonnes

Promoting Circular Economy

- To promote the elimination of waste and the continual use of resources
- To increase the usage of renewable resources

Read more on Promoting Circular Economy section.

- Conducted Ship Recycling Yard Assurance Programme
- Developed Group-wide Ship Recycling Guidelines
- 99% hazardous waste recycled

Biodiversity Conservation

- To conserve and rehabilitate marine biodiversity

Read more on Conserving Marine Biodiversity section.

- Developed MISC Group Heart of the Ocean Guidelines
- Launched Employee Participation Programme for reef surveys and capacity building at Mersing Island and UMT-MMS Sea Turtle Conservation Programme
- 32 reef sites surveyed
- 3 reef sites rehabilitated
- 9 awareness programmes
- 9 school and community awareness programme conducted
- 124 kg marine debris removed from 7 reef sites
- 2,181 turtle nests conserved
- 78% turtle hatching success

OUR PROGRESS IN 2022

SOCIAL PILLAR



**Health & Safety**

To provide a safe and healthy environment for employees, contractors and our communities  
To achieve Generative HSSE Culture

[Read more on Operating Safely section.](#)

- Implemented Advanced Safety Communication (ASC)
- Enhanced Process Safety Management (PSM) programme
- Continued with Generative Culture - safety and loss prevention related programme
- Received MSOSH Award Recipient 2022 for Grand, Gold Merit and Gold Class 1 & 2 category
- 47% improvement in LTIF compared with previous year
- 64% improvement in TRCF compared with previous year
- Completed 14 HSE Management System Assurance
- 135,929 UCUA raised
- Conducted 42 Management walkabouts



**Talent Excellence**

To futureproof talent and leadership agenda by accelerating talent potential  
To build a performance-driven workforce in an engaging and inclusive work environment

[Read more on Our People, Our Strength section.](#)

- Diversity and Inclusion Programmes
- Launched Career Management to promote employee self-driven career path
- Enhanced Leadership Pathway & Functional Curriculum to fulfil current and future development needs
- Continued with FlexWork (optimise work life integration and maximise work efficiency)
- Introduced FlexCareer (introducing contingent workforce)
- 94% high performance talent retention
- Maintained successor ratio of 2:1



**Community Investment**

To foster youth development towards becoming future leaders through education

[Read more on Partnering with the Community section.](#)

- Contributed RM24.2 million for ALAM Cadet sponsorship
- 228 employees participated in Employee Participation Programmes:
  - 77 for reef programme
  - 25 for turtle conservation
  - 126 for mangrove re-planting programmes

GOVERNANCE PILLAR



**Values, Assurance & Business Ethics**

To continuously embed a culture of strong corporate governance and business ethics and conduct  
To enhance cybersecurity framework and safeguard our operations.

[Read more on Operating Responsibly section.](#)

- 42% female Board members
- Conducted self-assessment through Operational Legal Areas (OLA) Functional Checklists
- Implemented Compliance and Ethics Survey 2022 Management Scorecard FY2022
- Recertification of ISO 37001:2016 Anti-Bribery Management System
- Carried out annual review of MISC Group Bribery and Corruption Risk Assessment 2022
- Completed 3 Human Rights Risk Assessments for Offshore Business, ALAM and Group Security.
- Zero human rights grievance reports
- Zero major cybersecurity breach



**Responsible Supply Chain Management**

To drive sustainable practices with our suppliers

[Read more on Embracing A Sustainable Supply Chain section.](#)

- Completed ESG self-assessment on 20 critical suppliers
- 104 participants from 64 third party company of MISC Group attended Annual CoBE, ESG and HSE Training for MISC Group Third Parties 2022

STAKEHOLDER ENGAGEMENT PILLAR



To create value through trusted stakeholder relationships

[Read more on Building Trusted Relationship section.](#)

- MISC Group conferred Strongest Commitment to Sustainable Energy Transportation award by Alphas Southeast Asia, based on publicly available information and disclosures.
- MISC has been honoured the Silver Awards at The Edge ESG Awards, under the Transportation category.
- MISC remains as a listed constituent in the Dow Jones Sustainability Index (Emerging Market) for two consecutive years and FTSE4Good Index for 9 consecutive years
- MISC Berhad has been included in the S&P Global Sustainability Yearbook 2023 as the Sustainability Yearbook Member for the first time
- Completed 197 engagements with customers, investors and financial institutions on our sustainability agenda

# APPROACH

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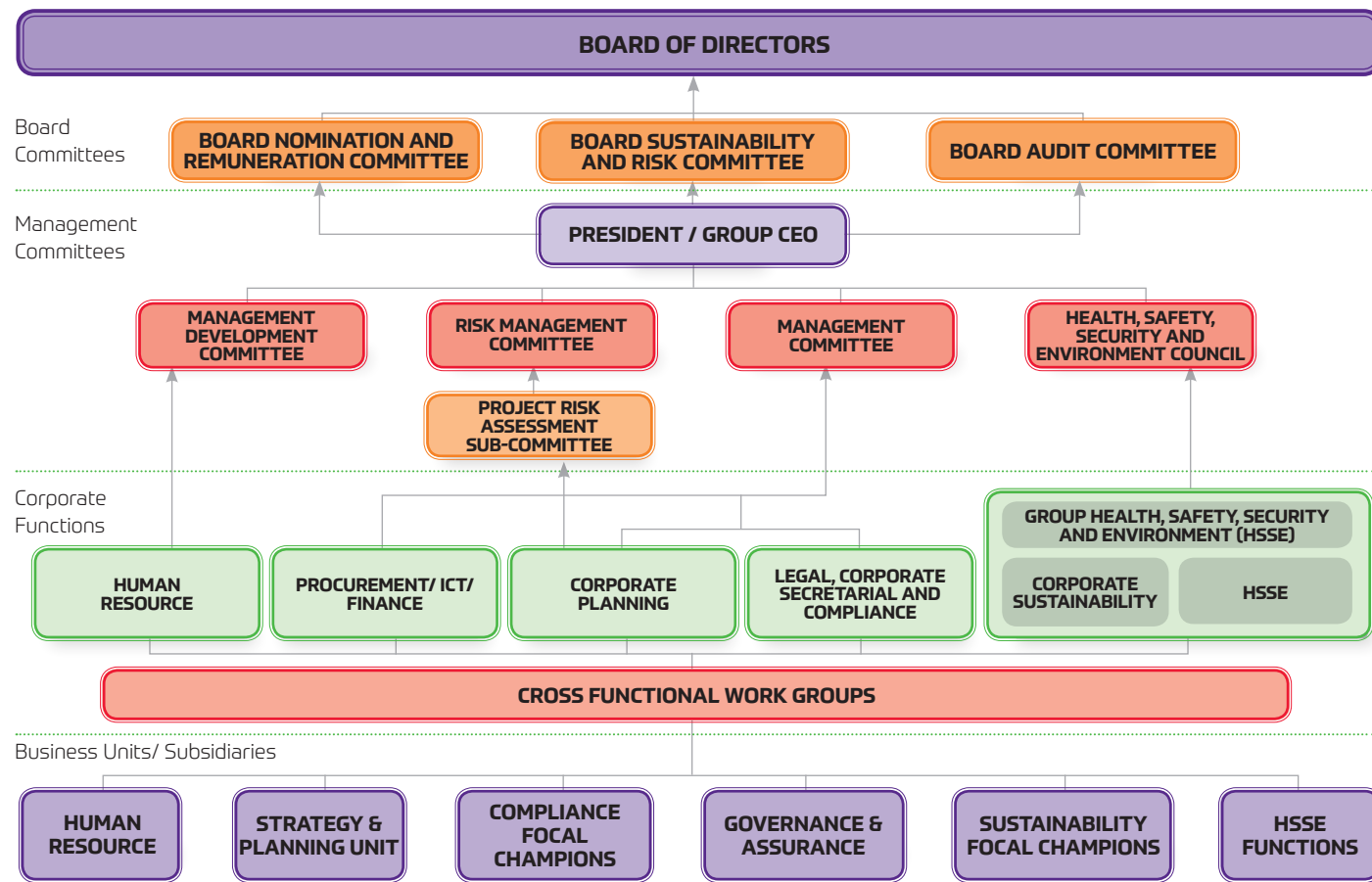
# SUSTAINABILITY GOVERNANCE

Retaining strong governance is vital for the long-term success of a business. Embedded in MISC's commitment to creating value for all our stakeholders, governance goes beyond a set of stated principles and procedures.

Throughout MISC, we have established transparent and functional sustainability governance frameworks. All decision-making at MISC is conducted in accordance with our governance standards which are backed by numerous performance indicators and other controls.

Every aspect of MISC's governance incorporates sustainability and MISC's Board of Directors sits at the pinnacle of our sustainability governance, exercising stringent control over the Group's sustainability strategy and performance.

## SUSTAINABILITY GOVERNANCE STRUCTURE AT MISC GROUP



### BOARD

In discharging its functions, the main roles and responsibilities of the Board of Directors (Board) are as follows:

- Approves group-wide sustainability strategic plan and targets for the Company
- Provides guidance on updating and reviewing the Sustainability Strategy
- Evaluates MISC's performance on sustainability disclosures, sustainability indices rankings and disclosures requirements
- Reviews MISC's sustainability strategy progress and group-wide performance
- Upholds a good Corporate Governance culture and business conduct
- Incorporates sustainability-related risks as part of decision making
- Performs oversight of the Company's sustainability reporting and disclosures

### BOARD SUSTAINABILITY AND RISK COMMITTEE

Starting from 1 January 2023 onward, Board Governance and Risk Committee (BGRC) will be renamed as Board Sustainability and Risk Committee (BSRC).

BSRC provides oversight of the effective implementation of MISC's sustainability strategy. Every quarter, the BSRC reviews, assesses, reports, and makes pertinent recommendations to the Board about sustainability which include:

Sustainability risks	Health, Safety, Security and Environment performance
Sustainability related policies, strategies, targets, and commitments	Cybersecurity performance
Sustainability strategy progress status	Compliance and Business Ethics (including human rights) performance
Internal and external sustainability disclosures	

Furthermore, BSRC receives and evaluates reports on significant strategic and operational risk issues, particularly those linked to ESG, resulting from quarterly Risk Management Committee (RMC) meetings. The BSRC reviews mitigation plans and determines the enterprise-level risk appetite in addressing these risks.

### BOARD AUDIT COMMITTEE

The Board Audit Committee (BAC) oversees the internal control framework and reviews ESG matters, including HSSE, business ethics and whistleblowing/ grievances cases on a quarterly basis.

These are part of BAC's work in reviewing sustainability-related work and it includes:

- Quarterly Whistleblowing and grievance reports of the Company; and
- Group Health, Safety, Security and Environment Audit and Assurance Biannual Reports which focuses on the maintenance efficiency and effectiveness of the Group's vessels and floating assets.

### BOARD NOMINATION AND REMUNERATION COMMITTEE

The Nomination and Remuneration Committee (NRC) oversees Board performance, Board composition and diversity, Director's skills and experience, Director's induction and continuous training programmes, remuneration of Directors, Senior Management and employees, and succession planning for the Board and Senior Management.

The NRC also reviews ESG-related performance of senior management's ESG related scorecard on a quarterly basis. The NRC makes appropriate recommendations to the Board to approve, based on the group's performance against the balanced scorecard which include climate-related strategic initiatives, annual GHG emission intensity, health and safety, business ethics, compliance, and people development indicators.

### MANAGEMENT COMMITTEE

The Management Committee (MC), which is chaired by the President/Group CEO and is made up of Vice Presidents of group functions and Managing Directors/CEOs from the relevant business divisions and subsidiaries, supports the Board and its committees on Financial and Governance sustainability matters that are discussed in monthly MC meetings.

Dedicated council structures look into specific ESG matters as follows:

#### HSSE COUNCIL

The HSSE council is a special council dedicated to providing focussed discussion on HSSE matters including environment and social sustainability matters and convenes on a monthly basis. The HSSE council is the highest authority for HSSE in which it is accountable for providing guidance and oversight on all HSSE-related issues, including the group's HSSE policy, strategic initiatives, management systems, targets, performance, and management review.

#### MANAGEMENT DEVELOPMENT COMMITTEE

At the Management Development Committee (MDC), Senior Management discuss and make decisions on talent performance, employee performance reviews, career development programmes, succession planning, competency assessments and other people development-related issues.

#### RISK MANAGEMENT COMMITTEE

The Risk Management Committee (RMC) serves as the Group's main platform for advancing the execution of the risk management framework. The RMC meets quarterly to examine the major risks and make sure that appropriate risk management plans are in place. Also discussed are the controls' sufficiency and efficacy as well as the robustness of the mitigation strategies. The BSRC then further deliberates these risk matters on a quarterly basis before these are presented to the Board.

Project Risk Assessment Sub-Committee (PRASC) are formed to discuss and deliberate individual asset investments risks.

### CORPORATE SUSTAINABILITY DEPARTMENT

The Corporate Sustainability (CS) department under Group HSSE division drive and monitor MISC's commitment to achieve its sustainability strategic priorities with support from cross-functional work groups at the business units/subsidiaries level. CS is also responsible for external sustainability disclosures, reporting, conducting group-wide sustainability material assessments and managing sustainability related stakeholder engagements. CS also provides support and advice to business units and subsidiaries on the implementation of their sustainability strategy, performance, and disclosures.

### SUSTAINABILITY CUSTODIANS/ FOCAL CHAMPIONS

Corporate Sustainability is supported by cross-functional work groups at the business unit/subsidiary level. These functions include Corporate Service Functions and business units/subsidiaries where each custodian shall be tasked with the responsibility to ensure that the approved initiatives are implemented.

Sustainability focal champions are nominated for each area of sustainability. This structure is to ensure that the sustainability culture is embedded into MISC decision making and day-to-day operations.

# PRIORITISING WHAT MATTERS MOST

At MISC, sustainability is an integral component of our strategic planning, risk management, and a vital element in every aspect of our business and value chain. As a world-leading provider of international energy-related maritime solutions and services, we see opportunities for creating long-term value while minimising external trade-offs associated with our operations and value chain.

We develop our sustainability agenda to address concerns that matter most to both our internal and external stakeholders. Hence, obtaining feedback and responding to matters deemed material to our key stakeholders is a core portion of our sustainability management approach as part of our Stakeholder Engagement Pillar.



### OUR DOUBLE MATERIALITY APPROACH

We define a sustainability matter as material if it could significantly impact the environment and/or society and might have a significant impact on a company's value drivers, competitive position, and long-term shareholder value creation.



- External impact on economy, environment and people



- Risk and opportunities of internal impact on enterprise value creation

## THE PROCESS – SELECTING MATERIAL TOPICS

In 2022, we engaged with our key stakeholders and conducted a materiality assessment to assess the sustainability matters most material for MISC to address.

The assessment was conducted in three stages:

### BENCHMARKING

We conducted desktop research on current and emerging sustainability trends as well as industry and peer benchmarking and identified a list of sustainability matters relevant to MISC's business.

### STAKEHOLDER ENGAGEMENT

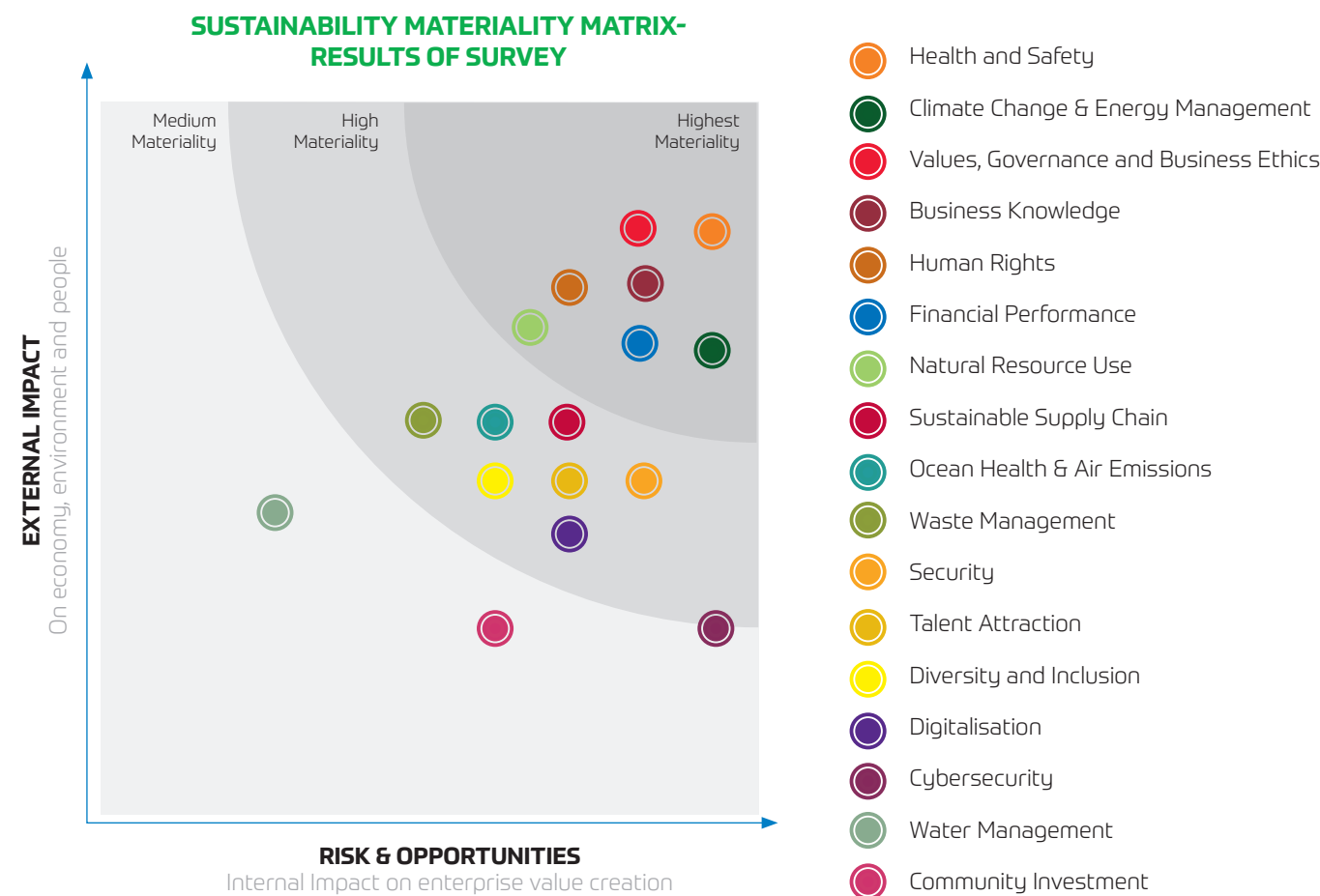
We conducted a survey on the prioritisation of our material matters with the following internal and external stakeholders' groups:

- |                        |  |
|------------------------|--|
| Customers              | Senior Leaders throughout the MISC Group |
| Financial Institutions | Board of Directors                       |
| Investors/Analysts     |  |

### MATERIALITY MATRIX

Using the feedback from our stakeholder engagement survey, we mapped the MISC materiality matrix based on inputs from both internal and external stakeholder engagements. The materiality matrix was endorsed by our HSSE Council and presented to the BSRC and Board accordingly.

## MISC GROUP SUSTAINABILITY MATERIALITY MATRIX


















## CREATING BUSINESS VALUE












Results of our materiality assessment have been used in our business practices to:

- Align our Sustainability Strategic Priorities with our material matters and relevant UNSDGs;
- Guide us on the disclosure topics in our annual reporting;
- Reinforce the linkages between ESG risks, opportunities and corporate purpose; and
- Guide us in setting our sustainability-related targets and commitments.









Our contributions to the United Nations Sustainable Development Goals (UNSDGs) were mapped according to the sustainability material topics. Ways in which we address each material matter and our progress towards the UNSDGs are presented in the following table.

PRIORITISING WHAT MATTERS MOST

MATERIAL MATTER	WHY IS THIS MATERIAL FOR MISC?	READ MORE ON OUR PROGRESS UPDATE IN THIS REPORT	SUSTAINABILITY STRATEGIC PRIORITIES	TARGETS	RELATED UNSDG
<b>HEALTH AND SAFETY</b> 	The continued safety and health of employees, assets and our cargo remain our priority to ensure safe operations.	Operating Safely	<b>Social Pillar -</b> Health and Safety	<ul style="list-style-type: none"> <li>Zero fatalities</li> <li>Limit for LTIF &lt;0.21</li> <li>Limit for TRCF &lt;0.62</li> </ul>	
<b>VALUES, GOVERNANCE AND BUSINESS ETHICS</b> 	Conducting ourselves with the highest standard of integrity and embedding good corporate governance and business ethics are important to achieve sustainable financial results.	Operating Responsibly	<b>Governance Pillar -</b> Values, Assurance and Business Ethics	<ul style="list-style-type: none"> <li>Zero compliance and business ethics breaches</li> </ul>	 
<b>BUSINESS KNOWLEDGE</b> 	Increased business knowledge and employees' expertise are instrumental to sustaining good overall business performance and customer satisfaction.	Economic Value Creation	<b>Financial Pillar</b>	 Refer to Talent Attraction Material Matters	
<b>HUMAN RIGHTS</b> 	Inadequate human rights management on employee, contractors, supply chain, security and community well-being can impact MISC's ability to trade internationally.	Respecting Human Rights at Sea and Shore	<b>Governance Pillar -</b> Values, Assurance and Business Ethics	<ul style="list-style-type: none"> <li>Zero human rights breaches</li> </ul>	
<b>FINANCIAL PERFORMANCE</b> 	Our business and entire maritime and energy sector are affected by fluctuating prevailing economic conditions and market sentiment.	Economic Value Creation	<b>Financial Pillar</b>	 Refer to Integrated Annual Report 2022 Strategic Review section	
<b>CLIMATE CHANGE</b> 	The International Maritime Organisation (IMO) adopted the IMO GHG initial strategy (IMO 2030 and IMO 2050) for the shipping sector in 2018. This initial strategy, calling on shipowners to combat climate change, is particularly relevant as the majority of our energy is produced by combusting fuel in our vessels.	Our Decarbonisation Pathway	<b>Environment Pillar -</b> Towards Decarbonisation	<ul style="list-style-type: none"> <li>Reduction of 50% GHG intensity (for shipping operations) by 2030 (Base year: 2008)</li> <li>Net-zero GHG emissions by 2050</li> </ul>	
<b>ENERGY MANAGEMENT</b> 	The need to manage and reduce fossil-fueled energy consumption of our vessels, buildings and yard operations and switching to alternative fuels or renewable energy will reduce the impact of climate change.	Our Decarbonisation Pathway	<b>Environment Pillar -</b> Towards Decarbonisation	 Refer to Climate Change Material Matters	

MATERIAL MATTER	WHY IS THIS MATERIAL FOR MISC?	READ MORE ON OUR PROGRESS UPDATE IN THIS REPORT	SUSTAINABILITY STRATEGIC PRIORITIES	TARGETS	RELATED UNSDG
<b>NATURAL RESOURCE USE</b> 	Operating in a responsible manner means reducing our environmental footprint especially on energy (mainly fuel) consumption of our shipping operations, non-renewable electricity and freshwater consumption of our non-shipping operations.	Promoting Circular Economy	<b>Environment Pillar -</b> Promoting Circular Economy	 Refer to Waste Management Material Matters	
<b>SUSTAINABLE SUPPLY CHAIN</b> 	It is important that we ensure our suppliers are on track with their sustainability agenda as they form a significant part of MISC's sustainability journey where we fully integrate ethical and environmentally responsible practices aligning with low-carbon and circular economy business models.	Embracing a Sustainable Supply Chain	<b>Governance Pillar -</b> Responsible Supply Chain	<ul style="list-style-type: none"> <li>11% critical supplier assessed on ESG.</li> </ul>	
<b>OCEAN HEALTH</b> 	We recognise the importance of ocean health and have implemented pollution prevention strategies to reduce our impacts on ocean biodiversity.	Conserving Marine Biodiversity	<b>Environment Pillar -</b> Biodiversity Conservation	<ul style="list-style-type: none"> <li>Zero major spills</li> <li>Installation of 100% Ballast Water Treatment System on vessels by year 2024</li> </ul>	
<b>AIR EMISSIONS</b> 	We are aware of the air emissions from our vessels and yard operations and are cognisant that these could impact the environment. Hence, we monitor and ensure our air emissions limits do not exceed statutory requirements.	Our Environmental Performance	<b>Environment Pillar -</b> Towards Decarbonisation	<ul style="list-style-type: none"> <li>100% compliance with regulatory requirements</li> </ul>	
<b>WASTE MANAGEMENT</b> 	We recognise that our operational activities generate waste and the need to ensure we responsibly manage waste from the point of generation (including waste elimination and reduction) and collection to recycling and monitoring.	Promoting Circular Economy	<b>Environment Pillar -</b> Promoting Circular Economy	<ul style="list-style-type: none"> <li>27% reduction in plastic waste generation per vessel</li> <li>40% reduction in paper consumption per vessel</li> <li>Maintain an annual 3R rate of &gt;95% of hazardous wastes generated</li> <li>Increase the annual 3R rate of non-hazardous wastes generated to 70%</li> </ul>	

PRIORITISING WHAT MATTERS MOST

MATERIAL MATTER	WHY IS THIS MATERIAL FOR MISC?	READ MORE ON OUR PROGRESS UPDATE IN THIS REPORT	SUSTAINABILITY STRATEGIC PRIORITIES	TARGETS	RELATED UNSDG
<b>SECURITY</b> 	At MISC, we take seriously the importance of security protection of our people and assets from physical actions, intrusions and other events. Safeguarding the physical security of a business means protecting it from threat actors, as well as accidents and natural disasters, such as fires, floods, earthquakes and severe weather.	Operating Safely	<b>Social Pillar –</b> Health and Safety	<ul style="list-style-type: none"> <li>Zero security breaches</li> </ul>	
<b>TALENT ATTRACTION</b> 	Establishing a sustainable talent stream across all job levels is a key strategic priority and will provide seamless leadership and talent succession planning throughout MISC. A robust talent management programme will equip our workforce with the necessary skills and competencies to realise our business objectives.	Our People, Our Strength	<b>Social Pillar –</b> Talent Excellence	<ul style="list-style-type: none"> <li>High Performing Talent Retention: 95%</li> <li>Successor Ratio (Management Committee Positions) of 2:1</li> <li>Successor Ratio (Critical Positions) of 2:1</li> </ul>	
<b>DIVERSITY AND INCLUSION</b> 	We believe that a diverse workforce promotes an open-minded culture and encourages new ways of thinking that are particularly important for our global operations. We practise a non-discriminatory hiring and promotion policy while providing competitive local employment opportunities wherever we operate.	Our People, Our Strength	<b>Social Pillar –</b> Talent Excellence	<ul style="list-style-type: none"> <li>Refer to Talent Attraction Material Matters</li> </ul>	 
<b>DIGITALISATION</b> 	Digitalisation will allow us to rapidly respond to changes based on data-driven decisions and the innovative ideas that assist us in serving customers more effectively.	Economic Value Creation	<b>Financial Pillar</b>	<ul style="list-style-type: none"> <li>Refer to Cybersecurity Material Matters</li> </ul>	
<b>CYBERSECURITY</b> 	Due to the rapid advancement in digitisation of company processes, cybersecurity is vital to protect data from unauthorised access and any potential disruption to business continuity.	Strengthening Cybersecurity	<b>Governance Pillar –</b> Values, Assurance and Business Ethics	<ul style="list-style-type: none"> <li>Zero cybersecurity breach</li> </ul>	

MATERIAL MATTER	WHY IS THIS MATERIAL FOR MISC?	READ MORE ON OUR PROGRESS UPDATE IN THIS REPORT	SUSTAINABILITY STRATEGIC PRIORITIES	TARGETS	RELATED UNSDG
<b>WATER MANAGEMENT</b> 	We are aware of the importance of water management at our yard operations and strive to reduce consumption and ensure our effluents limits do not exceed statutory requirements. Our vessels have desalination units onboard to generate own water usage from seawater.	Promoting Circular Economy	<b>Environment Pillar –</b> Promoting Circular Economy	-	
<b>COMMUNITY INVESTMENT</b> 	Employee involvement in our community investment programmes strengthens their mental and emotional connection with their place of work, enhancing productivity and talent management.	Partnering with Community	<b>Social Pillar –</b> Community Investment	-	

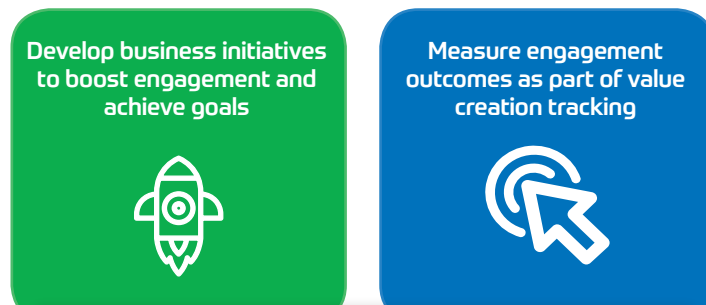


# OUR STAKEHOLDERS' UNIVERSE

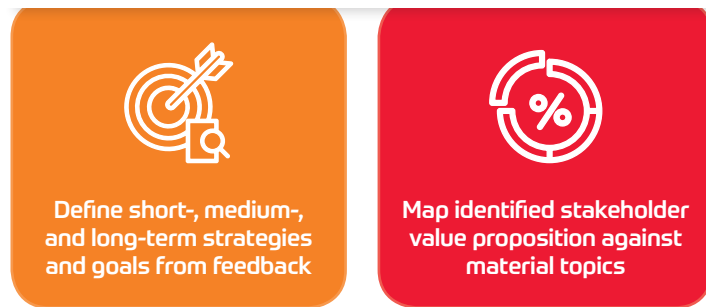
At MISC, we are committed to creating positive impacts for the benefit of the global maritime and energy sectors. Supported by our strategic stakeholder engagement pillar, we have dedicated our efforts to value creation through close engagements, awareness, dialogue, and collaboration.

Backed by a solid plan in place to manage our financial, environmental, social and governance performance, we are continuously demonstrating our dedication to going above and beyond what stakeholders anticipate from us. Given the dynamic social, economic, and legal factors that shape the landscape in which we operate, proactive stakeholder engagement is a critical component of our business strategy. Therefore, we believe that it is crucial to regularly engage with our stakeholders and embrace their feedback on key issues of significant importance.

To add value, a stakeholder-inclusive strategy and a structured stakeholder engagement methodology have been established. Every stage of our value generation process incorporates stakeholders' participation.



## MISC'S STAKEHOLDER ENGAGEMENT STRATEGY



## MISC STAKEHOLDER ENGAGEMENT PRINCIPLES



## DEFINING OUR STAKEHOLDERS

We determine pertinent stakeholders by considering their unique characteristics and level of involvement.

The relevant stakeholders are organisations or individuals who are directly or indirectly impacted by MISC's operations and activities or have the potential to be impacted by MISC are as follows:

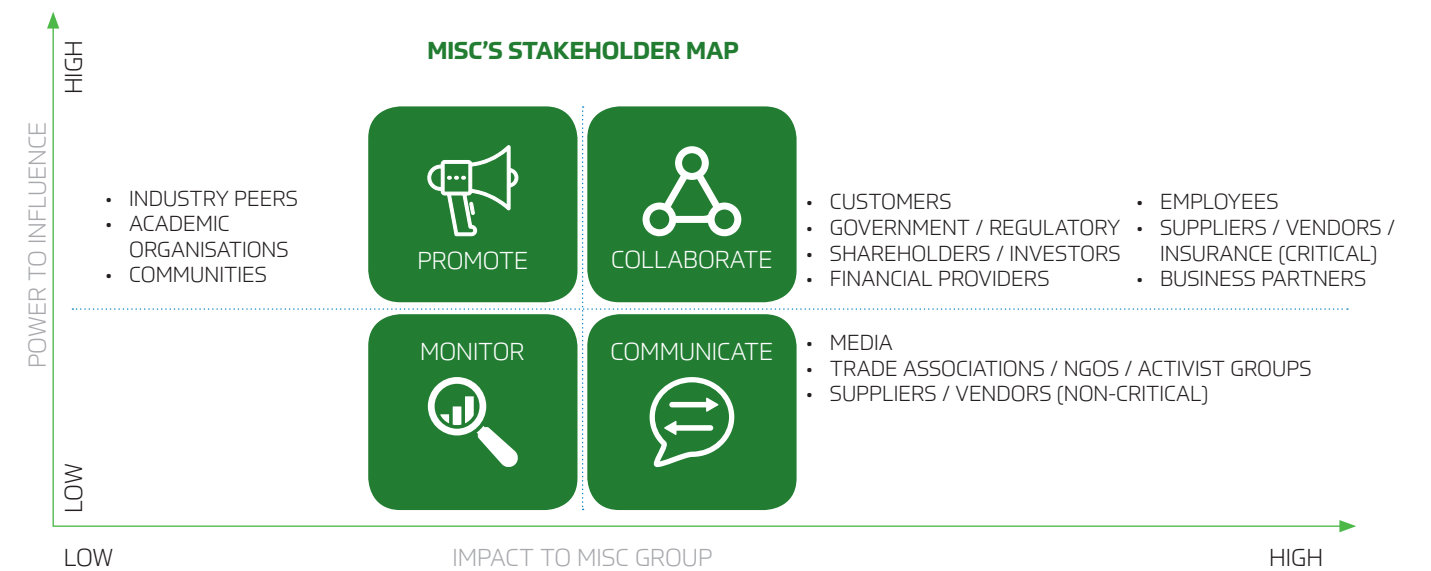
1. All those who exercise, or could exercise influence over the activity of our business or operations; and
2. All those who are or could be influenced by the activity of our business or operations.

## STAKEHOLDER PRIORITISATION

The MISC Stakeholder Map shows the influence and dependence of each stakeholder group on the Group. We have prioritised our key stakeholders as those who are the most likely to impact the Company's achievement of its strategic objectives and those who can be positively or negatively impacted by our operations and activities.

A stakeholder matrix is used to prioritise pertinent topics. The influence and dependence of each stakeholder group on MISC are mapped according to its impact and reliance on MISC as follows:

1. Highly influential stakeholder groups are most likely to give impact to the Company's achievement of its strategic objectives.
2. Highly dependent stakeholder groups are more positively or negatively impacted by the Company's operations and activities.





## OUR STAKEHOLDER ENGAGEMENTS

Depending on the nature of the stakeholder relationship, MISC uses a variety of engagement methods which are designed to provide the best outcomes whilst taking into consideration the needs and expectations of our stakeholders. One or more methods can be chosen, and they can be used either simultaneously or sequentially.

OUR STAKEHOLDERS	STAKEHOLDER VALUE PROPOSITION	MATERIAL MATTER OF CONCERN / ISSUES RAISED	OUR STRATEGIC RESPONSE	HOW WE ENGAGE					
				Collaborate	Promote	Communicate	Feedback	Transparency	
<b>GOVERNMENT/ REGULATORY</b>	<ul style="list-style-type: none"> <li>Support the government's agenda in promoting innovation and sustainable growth of the maritime industry</li> <li>Licence to sustain operations</li> </ul>	<ul style="list-style-type: none"> <li>Crisis management and business continuity</li> <li>Development of local talent and job opportunities</li> <li>Corruption and bribery</li> </ul>	<ul style="list-style-type: none"> <li>Collaboration with authorities on emergency response and preparedness</li> <li>Collaboration on Maritime Academy syllabus to nurture and develop seafarers in line with the nation's maritime vision</li> <li>Provision of annual job opportunities and development of local talents</li> <li>Joined MACN to combat corruption in the maritime industry</li> <li>Implement Code of Business Ethics (CoBE) for employees and third parties</li> </ul>	●		●			
<b>SHAREHOLDERS/ INVESTORS/ FINANCIAL PROVIDERS</b>	<ul style="list-style-type: none"> <li>Better understanding of MISC's business performance, financial position and sustainability agenda</li> <li>Increase shareholder/ investor confidence</li> <li>Better access to financing</li> </ul>	<ul style="list-style-type: none"> <li>Project and financial performance</li> <li>Values and governance</li> <li>Climate change</li> <li>Diversity and inclusion</li> <li>ESG risks and opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Exercise strong governance and robust risk assessment in project and financial management</li> <li>MISC 2050 - New income stream to address upcoming energy transition</li> <li>Exercise strong corporate governance</li> <li>Business ethics awareness and whistleblowing processes</li> <li>Net-Zero GHG emissions commitment by 2050</li> <li>Joined Getting to Zero Coalition with the customers along the value chain to develop commercially viable zero-carbon emission vessels by 2030</li> <li>Fleet renewal to low-carbon fuelled vessels</li> <li>Diversity and Inclusion statement</li> <li>Diversity and Inclusion awareness activities</li> <li>Incorporate ESG risks and opportunities into business decisions</li> </ul>	●	●			●	●
<b>CUSTOMERS</b>	<ul style="list-style-type: none"> <li>Increase confidence in MISC's capabilities in delivering quality and sustainable products and services</li> </ul>	<ul style="list-style-type: none"> <li>Crisis management and business continuity</li> <li>Values and governance</li> <li>Business experience</li> <li>Supply chain management</li> <li>Climate change</li> <li>Health and safety</li> </ul>	<ul style="list-style-type: none"> <li>Close engagements with customers to brief them on our business continuity plan which ensures the least interruption to customer operation</li> <li>Exercise strong governance in project management</li> <li>Business ethics awareness and whistleblowing processes</li> <li>Upskilling competencies to provide niche expertise for maritime services</li> <li>Set ESG expectations for supply chain and conduct third-party ESG assurance</li> <li>Fleet renewal to low-carbon fuelled and energy efficiency designed vessels</li> <li>Implementation of high Health and Safety Standards</li> </ul>		●		●	●	
<b>EMPLOYEES</b>	<ul style="list-style-type: none"> <li>Career development and growth in a sustainable organisation</li> <li>Sustainable Talent - attract and retain talent</li> </ul>	<ul style="list-style-type: none"> <li>Crisis management and business continuity</li> <li>Health, safety, security and environment management</li> <li>Upskilling talent</li> <li>Diversity and inclusion</li> <li>Business ethics and compliance</li> </ul>	<ul style="list-style-type: none"> <li>Regular communications on the crisis situation, work from home (WFH) arrangements (where possible) and mental stress programmes</li> <li>Implementation of high health, safety and environment standards</li> <li>Employees encouraged to raise Unsafe Condition and Unsafe Act (UCA) cards</li> <li>Security risk assessment and investigations to protect security well-being of employees</li> <li>We improve our employees leadership and functional competencies through our talent programmes</li> <li>Our people are encouraged to participate and give feedback to stimulate two-way conversations via ECHO+</li> <li>Encourage and support employee diversity and equal opportunities in our career development programmes</li> <li>Employee Participation Programme</li> <li>Business ethics e-learning modules to explain business ethics and compliance</li> <li>Business ethics awareness and whistleblowing processes</li> <li>Conflict of Interest Declaration</li> </ul>			●		●	●
<b>BUSINESS PARTNERS/ SUPPLIERS &amp; VENDORS</b>	<ul style="list-style-type: none"> <li>Leverage each other's expertise and collaborate on innovative products and services</li> <li>Better understanding of MISC's expectations (including sustainability agenda) on suppliers and increased business opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Project and financial performance</li> <li>Crisis management and business continuity</li> <li>ESG expectations</li> <li>Values and governance</li> <li>Health, safety and environment</li> <li>Business knowledge and expertise</li> </ul>	<ul style="list-style-type: none"> <li>Exercise strong governance in project and financial</li> <li>Close engagement with business partners/ suppliers and vendors to execute MISC's pandemic response plan and ensure the least business interruption</li> <li>ESG and business assessment covering sustainability strategy, climate change, business ethics, HSE, human rights and promoting circular economy</li> <li>Sustainability awareness sessions on ESG expectations</li> <li>Collaboration on low-carbon products and services</li> <li>Business ethics awareness and whistleblowing processes</li> <li>Enhance the Know Your Counterparty (KYC) requirement for all business dealings as part of the Third-Party Compliance Due Diligence Guidelines</li> <li>Provide CoBE training for third-party service providers to ensure that they are aware of our CoBE and other requirements and expectations</li> <li>Inculcate a stronger HSE discipline and mindset and recognise supplier/vendor with good HSE practices</li> <li>HSSE Partner's Summit - Engagement with contractors</li> <li>HSSE Audit &amp; Assurance Programme</li> <li>Upskilling competencies for niche expertise in maritime services</li> </ul>			●		●	●

Refer to the Stakeholder Engagement Pillar section for details of our key engagements.

# SUSTAINABILITY STRATEGIC PRIORITIES

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# ECONOMIC VALUE CREATION

## FINANCIAL PILLAR

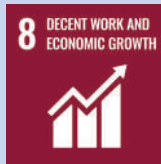
### Our Commitment

- To achieve growth in predictable and recurring sources of cashflow

### Our Initiatives

- A five-year rolling business plan with financial growth plans
- Financial governance framework, developed in line with the Financial Reporting Accounting Standards and Corporate Financial Policy

### Our Contribution to UNSDG



Promote sustained economic growth, full and productive employment, and decent work for all



## SHIPPING'S ROLE IN BLUE ECONOMY

Oceans and seas cover over two-thirds of the earth's surface and with 90% of global trade currently transported through the sea, shipping is undoubtedly the prime facilitator of global trade, as the most efficient and profitable way to move goods. In addition, the shipping industry provides jobs to millions of people in developing countries.

The World Bank defines the Blue Economy as the "sustainable use of ocean resources for economic growth, improved livelihoods and jobs while preserving the health of the ocean ecosystem".

As a player in the tanker shipping industry, MISC has a vital part to play in the global supply chain, considering its crucial role in moving energy worldwide. Most importantly, MISC aims to move energy worldwide in a sustainable way. Our mission is to continue to have business growth without significantly impacting the environment, whilst actively contributing to society and upholding strong corporate governance. Hence, we see ourselves playing an important contributory role in the development of the Blue Economy.

For more details on our value creation, please refer to our Integrated Annual Report 2022 How We Create Value section

## FINANCIAL PILLAR

The Financial Pillar of MISC's Sustainability Strategy aims to achieve predictable growth through recurring cash flow whilst promoting the effective and responsible use of resources to provide tangible and intangible benefits for the long term. The Financial Pillar contributes to UNSDG 8 by providing Decent Work and Economic Growth. We are committed to promoting sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all.

The two key strategic priorities that drive our financial sustainability under this pillar are:



Each fiscal year, we develop five-year rolling business plans and financial growth plans. The budget or financial plan primarily forecasts the future operating revenue, business costs and cash flow management.

Our financial management strictly follows our financial governance framework which is reflected in our Financial Policy and subjected to annual external third-party assurance and internal audits.

## SUSTAINABILITY-LINKED LOAN

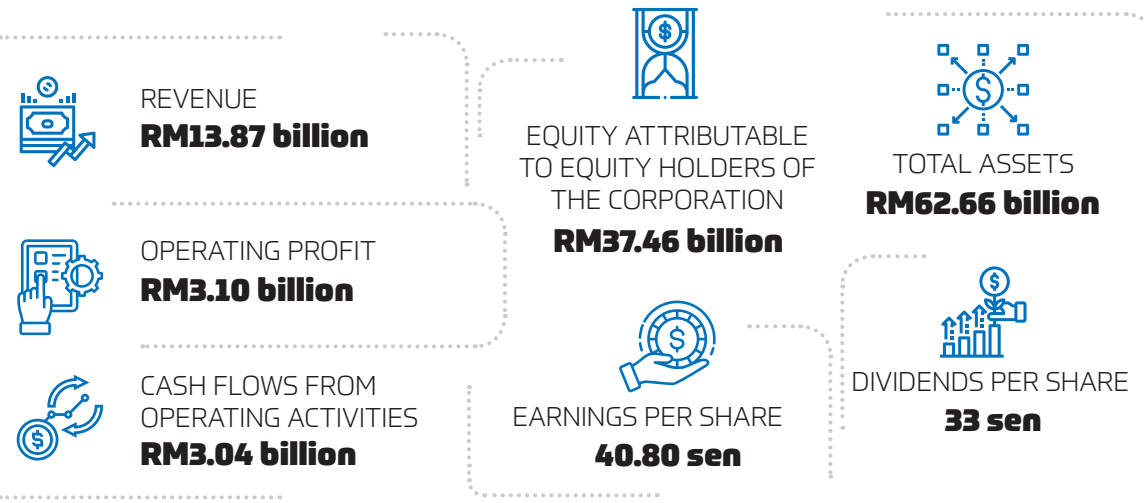
In 2022, MISC secured a syndicated USD527 million 11-year Sustainability-Linked Loan (SLL) to finance the delivery of its six very large ethane carriers (VLEC) purchased in July 2020. Joined by six lenders, the SLL structure includes two key performance indicators (KPIs) relating to greenhouse gas and governance targets.

Building on the lessons from its first SLL experience, MISC will continue to explore SLL solutions to support the achievement of our sustainability ambitions.

FINANCIAL PERFORMANCE

Summary of Financial Performance for 2022

FINANCIAL



Annually, we engage external auditors for both audit and non-audit work when necessary. For FY2022, we spent RM1,410,000 on non-audit fees for services rendered by external auditors or their affiliates. This sum included non-financial data assurance, a limited review of semi-annual financial results and tax advisory.

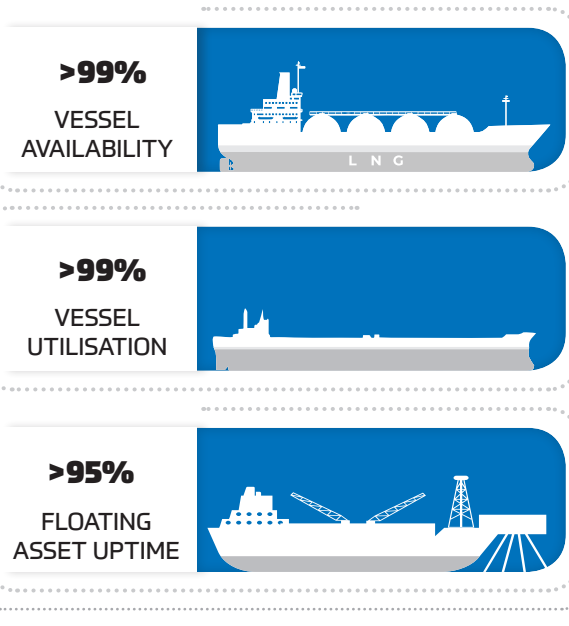
The Audit Engagement Partner in charge of MISC is changed every seven years to ensure that the external auditors' independence is not compromised. The partner must also observe a five-year cooling-off period before reappointment, in line with Malaysian Institute of Accountants (MIA) recommendations. Internally, the external auditors conduct an independent Partner Review to preserve their independence.

Our external auditors also provide written assurance to the Board Audit Committee (BAC), stating their independence throughout the audit engagement following all the terms of the relevant professional and regulatory requirements. The BAC assesses the performance and independence of the external auditors based on:

- The quality of engagement team including the sufficiency of resources;
- The quality of communication and interaction; and
- Independence, objectivity, and professional scepticism.

We will continue to assess the external auditors performance on an annual basis in line with the Policy on External Auditors.

OPERATIONAL EXCELLENCE



TAX

TAX STRATEGY

The MISC tax strategy is implemented via its Tax Policy which has been approved by the Board of Directors as follows:-

MISC Group is committed to be a responsible taxpayer by:

- Complying in good faith with all applicable tax laws, regulations, guidelines and international tax treaties, and settling tax obligations when legally due, as company and employer; and
- Maintaining cooperative working relationships with tax authorities.

Adherence to this Policy is everyone's responsibility, by referring all tax related matters to the appropriate parties.

Across the Group, MISC upholds its Tax Policy and strive as to ensure full compliance with all applicable tax requirements and pay taxes when legally due wherever we operate and conduct our business activities.

In line with MISC's corporate values and culture, we aim to create a culture of mutual respect with all relevant tax authorities and accordingly behave in a highly cooperative manner at all times.

MISC supports initiatives by tax authorities or government agencies, where relevant, that would enhance the tax landscape of the respective jurisdiction by participating in discussions, forums, dialogues with tax authorities and/or relevant institutions and non-governmental organisations, with the aim of promoting improvement to the tax landscape.

TAX ROLES AND RESPONSIBILITIES

MISC has a well-resourced tax function that is responsible for managing tax compliance and tax risks of the Group at operational level. The tax function also acts as a strategic business partner that is actively involved in the identification and implementation of tax requirements by collaborating with all lines of business across the Group.

A series of Tax Manuals have been rolled out in establishing the roles and responsibilities of the tax function, the finance department, and other relevant stakeholders in meeting both direct and indirect tax compliances.

At the strategic level, the BAC, Board Sustainability and Risk Committee (BSRC) and the Board have oversight of the Group's strategic tax, tax governance and tax risks and as part of the Group's financial reviews.

MISC has in place a Tax Compliance & Control Assurance Framework (formerly known as Tax Control Framework) which acts as a tool for management to place oversight on responsibility and accountability of the tax function.

TAX RISK MANAGEMENT

Group Tax, which is led by Head of Group Tax reporting to Vice President Finance, is responsible for compliance with the Tax Policy as well as managing the overall tax risks of the Group which includes (but is not limited to):

- Changes in tax laws/practices or new tax developments globally;
- Contractual, business structure and operational tax risks; and
- Non-compliance events which may result in penalties imposed by tax authorities.

Depending on the degree of risks, the key tax risks will be reported to the Management and the Board on a timely basis to ensure that it will be promptly monitored and addressed. Management oversight on tax risks is placed through Management Committee (MC) and Risk Management Committee (RMC). Ultimately, reporting will be made to the Board, BAC and BSRC respectively based on the nature and criticality of the tax risks.

MISC ensures that the tax function is well-equipped with a structured tax training programme by experienced trainers to sustain and enhance the capability and necessary technical skillset of tax personnel. In addition, the tax function is also equipped with access to local and global tax databases that are imperative in managing the Group's tax risks.

TAX REPORTING

For our income tax contribution, please refer to Performance Data section of this report.

TAX ASSURANCE

Our external auditor performed their independent assurance as part of the statutory process on MISC's financial reporting including income tax, tax provisioning and tax accounting.

In addition, external tax consultants are engaged, where relevant, to provide advice and assurance to support the Group's decision making process that could involve significant monetary, regulatory and/or reputational risk events and other compliance matters.

## HOW WE CREATE INDIRECT ECONOMIC VALUE

The principal businesses of the Group comprise energy shipping and its related activities, owning and operating offshore floating solutions, marine repair and conversion, engineering and construction works, integrated marine services, port management and maritime services and maritime education and training. Considering the trends affecting our customers, communities, the environment, and broader society, we anticipate our work's indirect impact on all of relevant stakeholders and factors.

We see ourselves as serving to connect energy producers to consumers who require energy for electricity generation, heating, transportation and as raw materials to produce other manufactured consumer goods.

As one of the world's largest single owner and operator of LNG carriers that is able to call at more than 30 liquefaction terminals and 80 receiving terminals worldwide, MISC Group's fleet of LNG vessels transports an estimated 6% of the world's LNG cargoes.

Our Petroleum & Product Shipping Business is a market leader in lightering operations in the United States' Gulf of Mexico and we are the top three owner-operators of Dynamic Positioning Shuttle Tankers (DPST). These shuttle tankers transport crude oil from offshore oil fields to terminals where the use of subsea pipelines are not feasible. Dynamic positioning (DP) systems are an essential component in today's shuttle tanker technology and are capable of maintaining the tanker in position in harsh weather conditions.

Over the past years, we have remained on a steady growth trajectory to generate sustainable value for our stakeholders including provision of over 9,000 job opportunities with a total of 1,200 supply chain organisations supporting our business. As we continue our forward moving journey, we are mindful of the threats that continue to challenge the world in 2022 which includes the onset of climate change resulting in rapid movement towards energy transition, slow post-COVID 19 pandemic economic recovery and the Russia Ukraine conflict which has resulted in major supply chain disruptions.

## SUSTAINABILITY RISKS AND OPPORTUNITIES – OUR MARKET ENTERPRISE VALUE

### CLIMATE CHANGE RISKS AND TRANSITION TO LOW-CARBON OPERATIONS

Impacts from the increase in temperature is evident by the increased frequency and magnitude of extreme weather events such as heatwaves, droughts, flooding, winter storms, hurricanes, and wildfires. Under the 2015 Paris Agreement, nations agreed to limit global warming to well below 2°C, but preferably 1.5°C, compared to pre-industrial levels. The Intergovernmental Panel on Climate Change's (IPCC) latest findings suggest 1.5°C warming will be reached or exceeded in the early 2030s in all considered emissions scenarios, except the highest in which the crossing could occur even earlier.

 MISC's climate risks and opportunities are disclosed in the Climate Related Financial Risks and Opportunities section of this report.

While we take cognisance that the carbon emission contributed by our operations does contribute to climate change and may have impact to the ocean health, we are striving to transition to low-carbon operations before moving on towards our long-term commitment of reaching a net-zero state in 2050. In 2022, we recorded 11 low-carbon dual-fuel vessels within our existing fleet size and our first four ammonia-fuelled zero-carbon emission vessels (two VLCC and two Aframax) will be delivered in 2025 and 2026.

In line with increasing legislation on GHG emissions, the cost of business compliance is also expected to increase. To compensate for the increase, charterers may be legally mandated to bear the cost of compliance and this would drive up the demand for lower carbon vessels.

The rapid onset of energy transition may also reduce the need to transport oil and gas, thus reducing market demand for tankers. MISC 2050 is our long-range strategy to diversify and explore new income streams along with the renewable energy and waste-to-value chain, that can complement our existing portfolios.

### TALENT ATTRACTION AND GLOBAL JOB OPPORTUNITIES

In running our operations, MISC employs a diverse team of employees globally. In tandem with the growth of our operations, we have local hires within each of our operational footprints.


The rapid advancement in technology would render some of the existing roles to be irrelevant eventually. MISC constantly reviews the need to re-skill talents and improve our talent attraction and retention benefits. MISC takes talent development seriously and have designed a comprehensive career management framework that covers recruitment, development and employee participation programmes and employee welfare.

 Read more on Our People, Our Strength section of this report.

### SUPPLY CHAIN RISKS, OPPORTUNITIES AND COLLABORATIONS

Supply chain risks exists in our value chain covering bribery and corruption, health and safety, human rights, and environmental pollution, all of which contributes to potential reputational risks to MISC.

MISC embarked on a Responsible Supply Chain Programme to conduct an ESG self-assessment on our critical suppliers and has implemented a Code of Conduct and Business Ethics for Third Parties which outlines the requirements for good business ethic practices.

 Read more on our Embracing a Sustainable Supply Chain sections of this report.

### POST COVID-19 PANDEMIC

Eaglestar embarked on its COVID-19 vaccination drive since vaccination was introduced in 2021. We have now reached 100% vaccination status for our seafarers, completing both first and second doses of the vaccine.

Our achievement in completing the 100% COVID-19 vaccination rate, coupled with the reduction of restrictions related to COVID-19 in most countries, allowed us to revise our Standard Operating Procedures (SOPs) for crew change effective 1 May 2022. This includes PCR tests that will be conducted only if there is a statutory requirement to do so. Whilst the repatriation of Chinese seafarers and executing crew changes in China was one of the key challenges in 2022, various strategies were incorporated to ensure seamless crew operation such as effective execution of seafarer's tour of duty onboard allowing minimum disruption to crew changes, proactive close collaboration with relevant authorities in various countries to establish safe travel corridor as well as testing procedures in various stages of travel of the seafarers.

Eaglestar has always emphasised its seafarer's physical and mental wellness onboard, and the COVID-19 pandemic has further created new challenges to be addressed. Thus, at Eaglestar, we have proactively strengthened our efforts in improving the well-being of our seafarers and adopted a holistic and sustainable approach to support and improve mental health amongst our seafarers.

A Mental Wellness Guideline was developed by Eaglestar, and this guideline was adopted and published by INTERTANKO as Crew Welfare Management and Mental Wellness guidelines. Eaglestar has taken a progressive action to address mental wellness of crew and become a pacesetter for the shipping industry.

### DIGITALISATION AND INNOVATION COLLABORATIONS

Since 2020, we have been installing digital systems on our vessels with the aim of improving vessel efficiency and safety. Our digitalisation journey for the entire fleet is on track and will be completed by 2023.

- E-navigation systems that offer greater accuracy
- Internet-of-Things connectivity for real-time monitoring of shipboard systems
- Internet-of-Services to connect with shore-based services
- Integrated ship control with big data

Focusing on 5 main components comprising of Emotional, Occupational, Physical, Social Well-Being and Environmental elements, various key initiatives were implemented. Initiatives such as Mental Health Support Solutions (MHSS), providing seafarers with a 24/7 helpline with qualified psychologists, counselling trainings to identify depression and anxiety onboard such as Mind Guardian programmes, as well as establishment of a dedicated channel for seafarers to communicate any grievances has assisted us to address the emotional component of mental and physical well-being onboard.

In addition, seafarers' mental health was an area of focus during COVID-19 period due to limited or restrictions to shore leave. To ensure the good mental health of seafarers, effective 25 June 2022, Eaglestar has proactively implemented a risk-based approach for shore leave at specific ports allowing seafarers much needed breaks and avoiding mental exhaustion away from the controlled working conditions onboard. The risk-based approach for shore leave is developed through risk assessments done for a specific port considering the number of active cases, vaccination rates at the port area and the country COVID-19 policy. Upon completion of risk assessments, seafarers may go ashore by taking certain mandatory precautions such as wearing masks and physical distancing.

Despite there is reduction in the restrictions and challenges from COVID-19, Eaglestar proactively continues to drive and establish actions to address the mental wellness and physical well-being through the various initiatives and guidelines established.

## OUR SUSTAINABLE ASSETS AND SERVICES

### GAS ASSETS & SOLUTIONS BUSINESS SEGMENT (GAS)

#### VERY LARGE ETHANE CARRIER

Since 2021, we expanded our business into the ethane market and now own six very large ethane carriers (VLECs). Our VLECs are powered by a ME-GI (gas injection) engine which are fitted with the latest pump vaporiser unit (PVU), making them some of the very few vessels in the world with ethane burning capability. These vessels are equipped with a cargo containment system for dual cargo loading. They also have LNG ready notation by ABS. All VLECs comply with NO<sub>x</sub> and SO<sub>x</sub> emission requirements in the gas and fuel mode. It is an advanced active emissions control technology system that injects a liquid-reductant agent through a special catalyst into the exhaust stream of engine. The vessel's selective catalytic reduction (SCR) system complies with the IMO Tier III nitrogen oxide (NO<sub>x</sub>) standards.

#### LIQUIFIED NATURAL GAS CARRIER

Two of our liquefied natural gas (LNG) carriers for SeaRiver Maritime (SRM), currently being constructed in South Korea, are featured with state-of-the-art technologies that includes modern XDF propulsion i.e. XDF 1.0 engines and partial re-liquefaction facility for higher efficiencies to meet the demand for worldwide trading and long-haul. The LNG carriers have a capacity of 174,000cbm and are scheduled to be delivered in 2023.

In 2022, we were awarded a total of 12 newbuilding LNG carrier awards by QatarEnergy and 2 LNG carrier awards by SRM. These carriers will be equipped with eco-efficient technologies i.e. X-DF 2.1 engines with Intelligent Control by Exhaust Recycling (iCER) System, partial re-liquefaction facility and Air Lubrication System, which will contribute to the reduction of GHG emissions. XDF 2.1 with iCER improves fuel efficiency and reduces methane slip by 50% compared to X-DF1.0 engines.

#### MINIMUM MANNING INITIATIVES AT FLOATING STORAGE UNIT

In March 2021, GAS Business has identified floating storage unit (FSU) Minimum Manning Operation as one of the new technology undertakings it would pursue. This will complement its current non-conventional portfolio. The minimum manning solution is considered novel as it has not yet to be commercialised elsewhere in the world prior to this study.

Thereafter, the feasibility study was conducted by Lloyd's Register (LR), to determine the technical and regulatory viability of a proposed FSU solution with either an unmanned or minimum manning operation. From the study, LR has awarded our Floating Storage Units *Tenaga Satu* and *Tenaga Empat*, which are located at Regasification Terminal Sungai Udang, the Approval in Principle (AIP) certification for Normally Unmanned Installations (NUI) operations on 16 March 2022. LR's Rules and Regulations for LR Digital Ships - ShipRight procedure applies for the assignment of digital descriptive notes for autonomous and remote access ships effective March 2019.

With this AIP, MISC is well positioned to take the follow through steps towards embracing digitalisation and autonomous ship initiatives in the future.

#### LNG TO POWER

LNG to Power (L2P) product portfolio consists of FSU, Floating Storage & Regasification Units (FSRU) and Floating Storage Regasification and Power Plants (FSR-P). The non-conventional solution can be developed using newbuild vessel or by conversion on existing LNG carrier. On the later option, it demonstrates MISC's commitment to extend the lifespan of old assets by repurposing end of life assets into other usage of floating assets in the spirit of promoting the circular economy.

### PETROLEUM & PRODUCT SHIPPING BUSINESS SEGMENT (AET)

#### LNG DUAL-FUEL VERY LARGE CRUDE CARRIERS

AET is one of the first international tanker companies to have invested in LNG dual-fuel vessels. As of end 2022, there are 11 dual-fuel vessels in its fleet; four Aframaxes, two Dynamic Positioning Shuttle Tankers and two amongst the world's first very large crude carrier (VLCC) with three more VLCCs under construction to be delivered to AET in 2023.

These latest three LNG dual-fuel VLCCs under construction are designed to be energy efficient and in compliance with IMO's 2025 Energy Efficiency Design Index (EEDI) Phase 3. Each vessel will have an electronically controlled, gas-injection (MEGI) engine that can significantly reduce methane emissions. They are capable of achieving a 99% reduction in sulphur oxide (SO<sub>x</sub>) emission, 85% reduction in nitrogen oxides (NO<sub>x</sub>), 95% less particulate matter (PM) and up to 30% less CO<sub>2</sub> on LNG mode when compared to marine gas oil. These LNG dual-fuel vessels are able to comply with IMO Tier III standards for NO<sub>x</sub> emissions and the IMO 2020 regulation for a sulphur cap of 0.5%. They also feature a hybrid vertical bow that lowers hull resistance, improves fuel efficiency, and reduces ship vibrations. The energy-saving devices fitted will further reduce GHG emissions from these vessels.

#### AMMONIA-FUELLED ZERO CARBON EMISSION VESSELS

In 2020, MISC Group launched the Castor Initiative to work collaboratively in developing commercially viable deep-sea zero-emission vessels by 2030. In April 2022, AET signed a Memorandum of Understanding (MOU) with Lloyd's Register and Samsung Heavy Industries which are also founding members of the Castor Initiative.

The three companies are taking the lead to encourage the use of green ammonia as propulsion fuel for the development and construction of the first two ammonia dual-fuel zero-emission VLCCs, which will be owned and operated by AET in late 2025 and early 2026.

The Castor Initiative members will focus on identifying green shipping corridors to facilitate the bunkering of these zero-emission VLCCs. This is certainly a landmark step forward which signifies MISC and AET's longer term net-zero GHG emissions commitment by 2050.

In September 2022, PTT and AET signed a MOU for the development and construction of two zero-emission Aframaxes to be powered by green ammonia.

PTT and AET are jointly taking the lead to encourage the use of green ammonia as the main propulsion fuel. AET will select a suitable shipyard and the two zero-emission dual-fuel tankers are to be delivered to PTT for long-term charters in Q4 2025 and Q1 2026 respectively. This collaboration is complementary to 'The Castor initiative', to make zero emission shipping a reality.

## OUR SUSTAINABLE ASSETS AND SERVICES

### PETROLEUM & PRODUCT SHIPPING BUSINESS SEGMENT (AET)

#### ECO-EFFICIENT DYNAMIC POSITIONING SHUTTLE TANKERS

AET is an established Dynamic Position Shuttle Tanker (DPST) owner, with a fleet of 17 shuttle tankers. Four of these vessels are operating in the Barent and North Seas and 13 in the Brazilian Basin. All are supported by our local teams to better service our customers and strengthen stakeholder relationships.

Our LNG dual-fuel DPSTs, *Eagle Blane* and *Eagle Balder*, are fitted with volatile organic compound (VOC) recovery systems. Captured VOCs can be reused as supplementary fuel reducing emissions as well as operating cost.

Furthermore, AET has grown its DPST operations in Brazil to 13 vessels, adding six vessels in 2022. These vessels are fully compliant with IMO NO<sub>x</sub> Tier III and SO<sub>x</sub> emission requirements. In addition, they are equipped with electrical-driven Variable Frequency Drive (VFD) cargo pumps and efficient thrusters for enhanced fuel efficiency and are fully capable of operating in weather conditions expected for their class.

Three sister vessels; *Eagle Campos*, *Eagle Canoas*, and *Eagle Colombo* are also fitted with energy-saving devices such as the Hi Pre-Swirl Duct and Rudder Bulb for improved propulsion efficiency and are already EEDI Phase 2 compliant.

Three sister vessels; *Eagle Cambe*, *Eagle Crato*, and *Eagle Colatina* are fitted with energy-saving devices such as Saver Fins and Savor Stator for improved propulsion efficiency and are approximately 6% more efficient than the EEDI Phase 2 requirements.

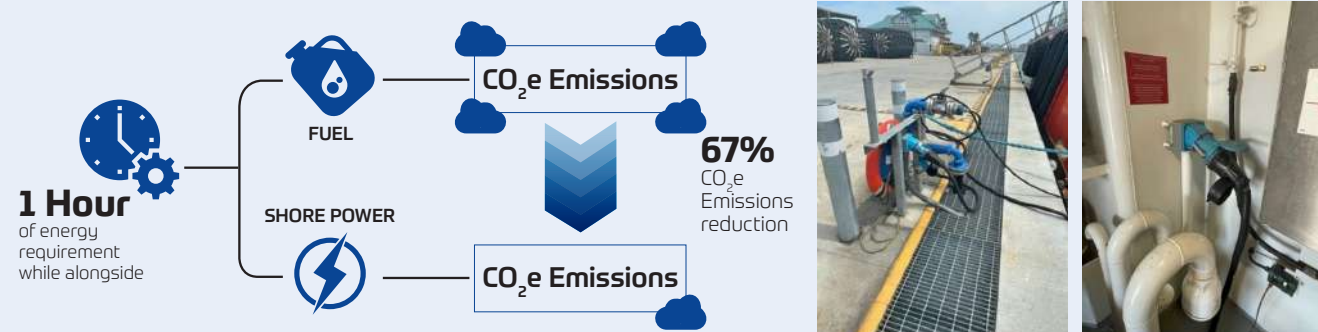
We are committed to ensuring that our DPST vessels are eco-efficient and operated following the highest safety and environmental standards.

#### COLD IRONING INITIATIVE

Our journey towards net zero emission requires seeking the right solutions across our operations. Instead of burning fuel onboard our Lightering Support Vessels (LSV) when docked at our Galveston facility in Texas, US, our AET Offshore (AETO) team introduced the cold ironing initiative in Q2 2021 providing onshore electrical power supply as an alternative fuel source.

The change in power source resulted in an estimated 68% reduction of CO<sub>2</sub>e emissions in 2021 and 67% reduction of CO<sub>2</sub>e emissions in 2022. Furthermore, this initiative also eliminated noise onboard and thereby helped create a healthier working environment for our LSV crew.

AET remains committed towards net-zero and continues to explore effective and practical solutions to reduce our GHG emissions.



CO<sub>2</sub>e emissions reduced by an estimated **983 tonnes** since 2021

### OFFSHORE BUSINESS SEGMENT

#### NEW BUILDS FLOATING PRODUCTION STORAGE OFFSHORE

MISC has made our commitment to the greater global sustainability agenda aiming to limit global warming and facilitate the transition towards a thriving, low-carbon economy. Offshore Business has integrated climate considerations into our business and sustainable strategies, with a clear pathway mapped out and aligned with MISC's commitment towards achieving Net-Zero GHG emissions at the latest by 2050. Although we may consider 30 years a long time, in reality we have no time to lose. We plan to deploy commercially viable low-carbon technologies that will allow us to progressively decarbonise and we are initiating the introduction of these technologies into our New Builds Floating Production Storage Offshore (NBFPSO). We plan to systematically transition through "multiple pathways" in the growing energy transition market.

The NBFPSO is designed to include Sustainable Technologies that will enable Offshore Business to progressively achieve our climate commitments. This is part of Offshore Business's value creation and reputation enhancement, supporting MISC's climate strategy and contributing to MISC Group's Net-zero commitment, by relying on continuous innovation as an almost inexhaustible source of advantages and benefits for sustainable development. Some of our Sustainable Technologies incorporated in the design include:

- Power Generation with carbon capture and injection to the reservoir;
- Combined cycle power generation;
- Power generation supplemented with renewables;
- Electrical storage;
- All electric 'driver' configuration; and
- Hydrocarbon cargo tank blanketing.

By implementing of these Sustainable Technologies, our NBFPSO shall gain added value such as:

- Reduced/zero GHG emissions;
- Increasing power generation efficiency;
- Increasing process efficiency;
- Compete in low carbon business environment;
- To operate in the most responsible and sustainable way; and
- Increased pool of investors/lenders.

#### ENVIRONMENTAL PERFORMANCE MONITORING SOLUTIONS (EPMS)

In 2022, our Offshore Business developed a comprehensive digital emissions monitoring solution which enabled the automation of data insights to improve on the overall performance of our floating offshore assets.

The outcome of the pilot project led to the setup of an initial data pipeline from the asset to the Cloud, as well as a dashboard displaying the data at an agreed frequency. This will allow us to rapidly exchange information, hence allowing us to more rapidly respond to changes based on data driven decisions and increase the efficiency of processes.

The Environmental Performance Monitoring Solutions (EPMS) will enhance customer satisfaction, allowing us to provide integrated and innovative solutions that serve customers more effectively. The EPMS digitalisation initiative is part of our Offshore Business value creation and reputation enhancement supporting MISC's climate strategy and contributing to MISC Group's Net-zero GHG emissions commitment.

The digitalisation of EPMS can help to monitor emissions and energy efficiency resulting in less downtime, more reliability and higher overall profitability while enabling us to obtain valuable information on the behavioural patterns of the equipment. There will be continuous improvement in the entire process with the application of machine learning where data is collected and analysed on board and turned into meaningful information whilst connected in real time to a dashboard. This offers the opportunity to gain deeper insights into the operations and eventually, the business and value chain, helping to drive enhanced decision making.

By analysing the vast information available, Offshore Business will be able to provide insights to customers to help them quantify, report, and reduce their Scope 1 carbon footprint and forecast future carbon emissions based on historical performance and trends identified from data fed into the model. This will help Offshore Business and our customers to understand and manage the emissions of their value chain. This is also part of our climate strategy to achieve Net-zero GHG emissions by continuously deploying digital energy efficient technologies and increasing operational efficiencies.

## OUR SUSTAINABLE ASSETS AND SERVICES

### MARINE & HEAVY ENGINEERING BUSINESS SEGMENT (MHB)

Our Marine and Heavy Engineering yards operate one of the largest marine and heavy engineering facilities in the Southeast Asian region and is the only one in Malaysia that is capable of delivering complex offshore and onshore mega structures with full range of Engineering, Procurement, Construction, Installation and Commissioning (EPCIC) services.

In 2022, our Marine and Heavy Engineering business segment signed strategic partnerships to support maritime decarbonisation agenda:

- MOU with Silverstream Technologies, provider for air lubrication systems that can allow vessels to reduce fuel consumption and associated emissions. MHB is able to provide the installation and retrofit services of the air lubrication system during client vessels' dry dockings. The solution harnesses the knowledge on hull fluid dynamics to deliver 5-10% net fuel savings depending on the vessel's profile and emissions savings for oceangoing vessels.
- MOU with Bureau Veritas Solutions that provides technical and consultation services on vessel improvements such as Hull Performance Audit to improve vessel efficiency, Technical Advisory on several solutions and retrofit strategy based on each vessel profile. MHB provides the retrofit work on existing vessels to meet IMO's Energy Efficiency Existing Ship Index (EEXI) and Carbon Intensity Indicator (CII) compliance. These retrofit strategies can assist to reduce up to 17% Net Fuel Savings depending on the vessel's profile.

#### Carbon Capture and Storage

MHB has secured a contract from PETRONAS Carigali Sdn Bhd (PCSB) to undertake the EPCIC services for the Kasawari Carbon Capture & Storage (CCS) project, off the coast of Sarawak, Malaysia. Once completed, the project will be the world's largest offshore CCS project by volume of CO<sub>2</sub> capture and the first CCS project in Malaysia.

### INTEGRATED MARINE SERVICES BUSINESS SEGMENT (EAGLESTAR)

As one of the leading global providers of international energy related maritime solutions and services, with a modern and diversified fleet of vessels, a significant portion of our human capital comprise seafarers who execute our commercial strategy and operations on the high seas. Our pool of seafaring employees is managed by our integrated marine services subsidiary, Eaglestar.

To ensure a sustainable, highly skilled pool of technical and maritime talent pipeline, Eaglestar has in place a structured people capability development programme for seafarers and shore resources.

To enhance our employees' competency levels, as well as improve and expand their proficiency and capabilities across various aspects of the business and operations the following initiatives are being carried out:

- Employees training and upskilling programme;
- Succession planning initiatives; and
- Recruitment and training through cadetship programme in collaboration with ALAM.

In 2022, Eaglestar has committed an investment of approximately USD 5.5 million in training and development programmes for seafarers. We employed a multiskilling approach in our talent development strategy, focusing on programmes that expanded our crew capabilities. This ensures they are equipped with the right set of skills to operate more types of vessels namely very large ethane carriers (VLEC), LNG bunkering vessel (LBV), LNG carriers (LNGC), LNG dual-fuel and eco-friendly petroleum tankers and dynamic positioning shuttle tankers (DPST), LNG floating storage units (FSU) and modular capture vessels (MCV).

### THE CASTOR INITIATIVE

The Castor Initiative was launched in January 2020 to drive shipping towards a decarbonised future through a global collaboration effort by 8 leading partners of the maritime industry. Currently, Castor Initiative is comprised of MISC Berhad, Lloyd's Register (LR), Samsung Heavy Industries (SHI), MAN Energy Solutions (MAN ES), YARA Clean Ammonia (Yara), Maritime and Port Authority of Singapore (MPA), Jurong Port Private Limited (JPPL) and TotalEnergies. The global coalition of maritime industry leaders has enabled collaboration between a circle of maritime expertise, to ensure and support the complete ecosystem required for ammonia-fuelled tanker to operate safely and sustainably.

On 5 April 2022, classification society Lloyd's Register, shipbuilder SHI and shipping company MISC via its subsidiary, AET, signed an MOU for the development and construction of two deep sea tankers to be fuelled by ammonia. The experience and expertise of each Castor Initiative partner will be central to the success of the initiative, from conception to project realisation.

Eaglestar's advantage as one of the earliest ship managers of LNG and dual-fuel vessels within the maritime industry, enables us to play a vital role in supporting this aspiration by contributing our extensive knowledge and capabilities in technological solutions and maritime talents.

We have embarked on initiatives to fortify our human capital and people capabilities to support MISC Group as well as The Castor Initiative's aspirations which will ultimately contribute to the maritime industry's decarbonisation goals. Several key focus areas to establish Eaglestar capabilities to build and operate ammonia-fuelled vessels as follows:

- Collaborations with industry partners identifying green shipping corridors to establish ammonia bunkering services;
- Collaboration with maritime authorities, industry partners and leading maritime institutions to develop and establish approved training syllabus for seafarers to operate ammonia fuelled vessels; and
- To identify and reskill seafarers and shore technical personnel to build, manage and operate ammonia fuelled vessels.

The Castor Initiative would serve as one of the key pathways for MISC Group to achieve its Net-Zero GHG emissions commitments by 2050 by progressively rejuvenating its existing assets to zero-emissions vessels.





## OUR SUSTAINABLE ASSETS AND SERVICES

### PORT MANAGEMENT & MARITIME SERVICES BUSINESS SEGMENT (MMS)

MISC Maritime Services Sdn. Bhd. (MMS) is a world-class maritime service provider with three decades of proven experience in delivering the highest quality of port management and maritime services to major oil and gas companies.

As part of MISC Group, MMS serves as the centre for maritime services in the provision of port and terminal management and operations, marine assurance and compliance, as well as consultancy services to a range of clients in the energy sector including PETRONAS Group, supporting their upstream and downstream activities. As a service provider that prides itself in delivering high standards of operational excellence, we recruit the best talents in the industry. MMS currently has a team of around 170 highly skilled and qualified master mariners, marine engineers, accredited inspectors, naval architects and marine technologists.

We have a business presence in the West Coast, East Coast and East Malaysia, with our headquarters located in Kuala Lumpur. MMS is the port operator for Sungai Udang Port Sdn Bhd and the terminal operator for Regasification Gas Terminal in Melaka.

In Terengganu, we operate and provide management support services to Kertih Port Sdn Bhd and operate offshore terminal operations for FPSOs/ FSOs in East Coast waters, two Terengganu Crude Oil Terminal (TCOT) Single Anchor Leg Moorings (SALM) and one Single Point Mooring (SPM) for PETRONAS Penapisan Terengganu Sdn Bhd (PPTSB).

In Sabah and Sarawak, we support our clients by operating SPMs at the Miri Crude Oil Terminal (MCOT), Bintulu Crude Oil Terminal (BCOT), Bintulu Integrated Facility (BIF) and Sabah Oil & Gas Terminal (SOGT) which have a total of 5 SPMs. Since 2017, we have been providing pilotage services for PETRONAS FLNG SATU and PETRONAS FLNG DUA since 2020. We also administer PETRONAS' policy on maritime activities to ensure full compliance with the policy.

We are equipped with the Smart Port system to monitor and streamline our operations at our ports and terminals. During the year, we had enhanced our digital platform for port and terminal operations to include port engineering and maintenance scopes.

For marine assurance and compliance, we provide screening, inspection and assessment services including:

- Offshore Vessels Inspection Database (OVID);
- Offshore Vessel Management and Self-Assessment (OVMSA);
- Recognised Security Organisation Auditor (RSO);
- Ship Inspection Report Programme (SIRE);
- Vessel Inspection Screenings (VIS);
- Tanker Management Self-Assessment (TMSA);
- Roving Marine Marshall Services (RMMS);
- Condition Assessment Program (CAP) Review;
- Pre-Hire Inspections, Dynamic Positioning (DP) Inspectors;
- Marine Warranty Surveyor (MWS); and
- Marine Risk Assessor.

Our systematic and web-based risk management tools – the Offshore Support Vessel Inspection System (OSVIS) and Vessel Inspection System (VIS) - are now accessible via a mobile application and ensure that inspected vessels are fit for operations as per our clients' requirements.

Since our incorporation in 1992, we have successfully handled over 50,000 vessels of up to 320,000 dwt at our ports and terminals in Malaysia, operate nine out of twelve SPMs and our OCIMF accredited inspectors have performed more than 64,000 vessel inspections and screenings.

MMS is a member of the Oil Companies International Marine Forum (OCIMF) and International Marine Contractors Association (IMCA).

### MARITIME EDUCATION & TRAINING BUSINESS SEGMENT (ALAM)

Akademi Laut Malaysia (ALAM) is our flagship and leading maritime academy in the region which offers a combined Standards of Training, Certification and Watchkeeping for Seafarers (STCW) courses with the Department of Skills Development certification and the Malaysia Skills Certificate (SKM).

ALAM has trained more than 14,000 seafarers since 1977 and offers 160 courses including hands-on shipboard training and assessment for deck and engineering officers, ratings and advanced diploma programmes. ALAM also equipped with simulators such as the Bridge, Engine and Cargo Handling.

In the future, ALAM intends to develop courses related on Sustainable Development Goals (SDGs) and the syllabus will be focusing on the maritime industry and the needs in upholding the SDGs philosophy such as:

- The 17 Sustainable Development Goals (SDGs) and
- Sustainability-related issues in maritime industry.

The driver is to equip the participants with the knowledge and competency needed to develop insights into both local and global critical issues on sustainability and position them as potential sustainability change-makers.

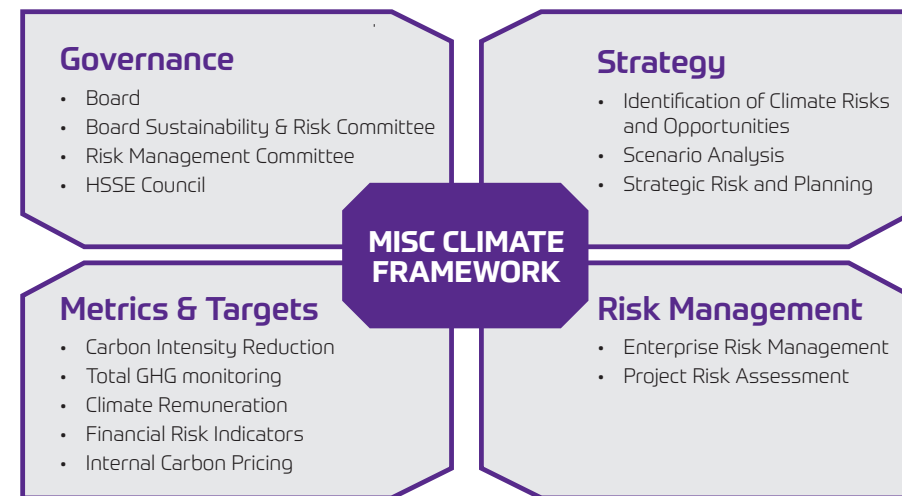
In support of the UN Sustainable Development Goal Number 5, gender equality, ALAM have been training female cadets since 2006. Many of these female cadets have become competent seafarers and officers with rewarding careers within the Group and externally.

As part of the "Just Transition" movement, ALAM is gearing up to better equip our seafarers to ensure that the shipping industry responds to the climate emergency which puts seafarers and communities at the heart of the solution.



# CLIMATE-RELATED FINANCIAL RISKS AND OPPORTUNITIES

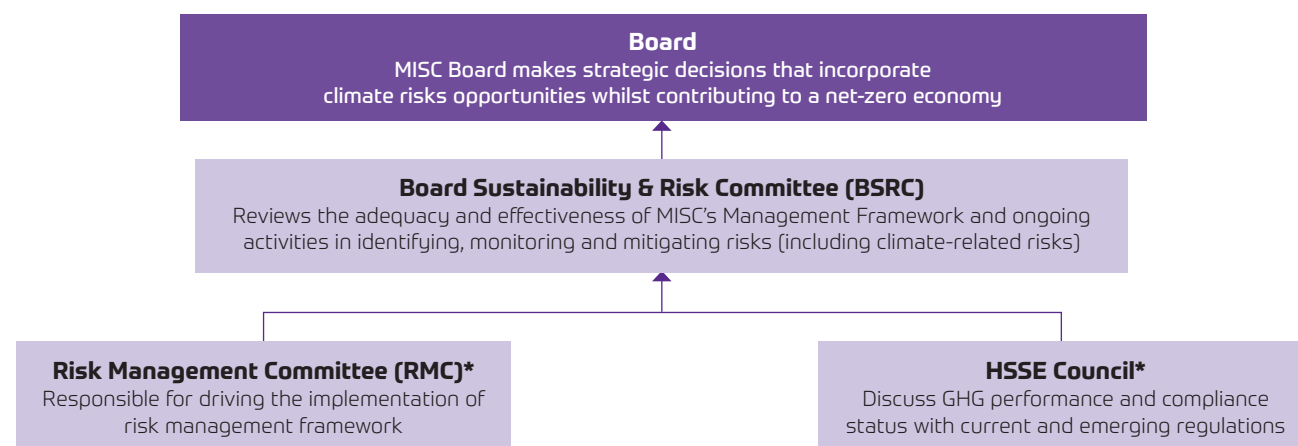
MISC's Climate Framework is based on the Task Force on Climate-related Financial Disclosures (TCFD) Recommendations that represent core elements of climate management: governance, strategy, risk management, and metrics and targets. All TCFD thematic elements are reflected in the structure of our disclosures in the following sections.



Since 2021 we began implementing climate scenario analysis in line with the Intergovernmental Panel on Climate Change's (IPCC) sixth assessment report, to review and assess our business resilience under two global warming scenarios, a low emissions pathway (1.5 °C) and a high emissions pathway (4 °C). MISC Group became a TCFD Supporter in 2021 and issued our inaugural report in our Sustainability Report 2021, following the TCFD framework.

In this 2022 TCFD Report, we have expanded the scope of our TCFD initiatives to include our key enablers' business segments. We have also implemented climate-related risk integration measures into the existing risk management process and formalised the climate scenario analysis process into MISC's annual strategic planning exercise.

## GOVERNANCE



\* Chaired by the President/Group CEO (PGCEO). Members comprise Vice Presidents from each division and the Managing Directors / CEOs of MISC Group of Companies.

## BOARD OVERSIGHT

The Board and BSRC consider climate-related issues when reviewing and guiding strategy, major plans of action, risk management policies, annual budgets, and business plans as well as setting performance objectives, monitoring implementation and performance, and overseeing major capital expenditures, acquisitions, and divestitures. On a quarterly basis, the Board through the BSRC monitors and oversees GHG performance and climate-related strategic initiatives' progress against goals and targets.

## MANAGEMENT OVERSIGHT

The RMC holds quarterly meetings to review key business risks and ensures that mitigation plans are in place to manage such risks. The adequacy and effectiveness of the controls and the robustness of the mitigation actions are also addressed. These are then further deliberated by the BSRC and reported to the Board each quarter.

Group HSSE provides updates to the HSSE Council and BSRC on GHG performance against set targets including the assessment and management of climate-related issues each quarter.

Subsequently, the identified climate-related risks and mitigation strategies are refined and cascaded into the Group's risk register. These issues and strategies are monitored and brought to the RMC and the BSRC on a quarterly basis. Climate-related risks for investment opportunities are also assessed under Project Risk Assessments for approval by the Project Risk Assessments Sub-Committee (PRASC), BSRC and MISC's Board.

## STRATEGY

### CLIMATE-RELATED RISKS AND OPPORTUNITIES EMBEDMENT INTO BUSINESS STRATEGIES

The Corporate Planning division oversees the integration of climate-related risk and opportunities into the existing group-wide strategic planning exercise annually to facilitate strategic plans for the Group. During the annual strategic planning exercise, the business and climate-related risks and opportunities are considered for inclusion into the business strategies.

### SHORT, MEDIUM AND LONG-TERM TIME HORIZONS

MISC Group has defined its short, medium and long-term time horizons in identifying climate risks and opportunities. In doing so, we take into consideration the useful life of our assets and the impact of these climate-related issues over the medium and longer terms.

Time Horizon	Short Term Within the Next 5 years	Medium Term Current Year Up to 2030	Long Term 2031 - 2050
<b>Time Horizon Rationale on Material Financial Impact</b>	Any climate-related risks that have or are expected to have material financial impacts in the next 5 years from current and emerging climate legislation and market transition to low-carbon assets	Any climate-related risks that have or are expected to have material financial impacts in meeting the following expectations: <ul style="list-style-type: none"> <li>IMO 2030 targets to reduce CO<sub>2</sub> emissions per transport work by at least 40% by 2030 compared to 2008</li> <li>Considering the lifespan of a vessel is approximately 20-25 years, the shipping industry has to be able to develop commercially viable deep-sea zero carbon emission vessels by 2030 to meet IMO 2050 goals and Net-Zero GHG Emissions Commitment by 2050</li> </ul>	Any climate-related risks that have or are expected to have material financial impacts in addressing the risks and opportunities of the energy transition, global movement towards Net-Zero Economy by 2050 and IMO 2050 aspiration (50% reduction in total GHG compared to 2008)

CLIMATE-RELATED FINANCIAL RISKS AND OPPORTUNITIES

IDENTIFICATION OF CLIMATE-RELATED RISKS AND OPPORTUNITIES

MISC Group determines which risks and opportunities have a material financial impact on the organisation by considering the following matters:

- Climate-related driving forces that presents risks and opportunities for MISC Group. These driving forces are:
  1. Physical;
  2. Regulatory;
  3. Technological;
  4. Market; and
  5. Reputation & Social.

- Expected time horizon of the climate issue likely to be of a global concern;
- Likelihood of the climate issue to impact MISC business objectives; and
- The severity/financial impact of the climate risks on MISC business objectives.

MISC Group has identified both physical and transition climate-related risks and opportunities for our own business and across our value chain including upstream suppliers and downstream customers.

OVERVIEW OF MISC GROUP CLIMATE-RELATED RISKS AND OPPORTUNITIES	<b>PHYSICAL</b> 	<ul style="list-style-type: none"> <li>• Increase in extreme wind and precipitation (acute)</li> <li>• Sea level rise (chronic)</li> </ul>
	<b>REGULATORY</b> 	<ul style="list-style-type: none"> <li>• Increasing environment / carbon policies and legislation</li> </ul>
	<b>TECHNOLOGICAL</b> 	<ul style="list-style-type: none"> <li>• Development of new technologies for low-carbon solutions</li> <li>• Training for the right expertise and skills required to manage new assets</li> </ul>
	<b>MARKET</b> 	<ul style="list-style-type: none"> <li>• Market interest shift towards low-carbon economy</li> <li>• Changing capital providers trends</li> <li>• Shift in customer expectations</li> </ul>
	<b>REPUTATION &amp; SOCIAL</b> 	<ul style="list-style-type: none"> <li>• Talent retention and attraction</li> <li>• Being perceived as advanced or laggard in climate change action / failure to comply with regulation</li> </ul>



“All MISC vessels and offshore assets are designed to withstand extreme weather.”



CLIMATE-RELATED FINANCIAL RISKS AND OPPORTUNITIES

In the following tables that follow, we identify climate-related risks and opportunities with potential impact to our business over short- (0-5 years), medium- (up to 2030), and long-term (2031-2050) time horizons, as well as our strategies to manage and mitigate each risk. Risks are categorised into two groups as outlined by the TCFD:

1. Physical risks created from a changing climate and
2. Transition risks, created by the world's transition to a low-carbon economy.

**Physical Risks – Acute extreme weather**

According to the IPCC, in a 4 °C world where carbon policy fails to mitigate global average temperature increases, the frequency and severity of acute events will be more drastic than today. In a 1.5 °C world, these changes will be felt to a lesser extent.

**Impact to Business**

Time horizon: Medium to Long Term



- Operational delays
- Personal injury and asset damage
- Cost of compliance



- Marine repairs
- Remote inspection
- Specialised port management services
- Supply chain collaboration

**Risks:**

1. Increased costs resulting from operational delays/ disruptions due to extreme weather.
2. Increased number of personal injury and asset damage cases due to extreme weather resulting in increased insurance premiums.
3. Reputational impact from failure to deliver projects on time (due to disruption of asset newbuilding yards/port operations and supply chain operational disruptions caused by extreme weather).
4. Increased compliance costs as extreme weather can lead to increased risk of spill or leaks leading to damages and potential litigation.

**Opportunities:**

1. Potential increased revenue for:
  - Marine & Heavy Engineering segment on marine repairs as vessels will require frequent maintenance/ad-hoc repairs to withstand the increasing intensity of extreme weather.
  - Port Management & Terminal Services segment on remote inspection and heightened need for specialised port management services.
2. Increased collaboration across the supply chain or research and development for our shipping, offshore and Marine & Heavy Engineering business segments on asset design initiatives to better withstand extreme weather events and climate-related risks.

**Management Approach**

All MISC vessels and offshore assets are designed to withstand extreme weather. All vessels also receive weather maps, satellite images, and other information as provided by National Oceanic and Atmospheric Administration (NOAA) and guidance from port authorities. These vessels are able to survive extreme weather and the information systems on board allows the crew to safely navigate during extreme weather events. MISC vessels are equipped with reliable and accurate sensors, as well as complete weather monitoring solutions to enable predictions based on the sea state, wind, and all other weather conditions vital to the safety and operation of the vessel.

MISC continuously works to improve the specifications of its newbuild vessels to address acute physical risks. In addition, stringent safety controls are applied to vessel navigation. A comprehensive set of procedures have been introduced that cover passage planning, vessel management in bad weather, navigational equipment maintenance, resources management and contingency plans for various vessel emergencies.

At Group level, Group Crisis Management Plan (GCMP) is in place to govern crises at the corporate level. All operational-level emergency plans have clear linkages to the GCMP. These plans are integrated into our business continuity management and disaster recovery planning to mitigate business risk.

**Physical Risks – Chronic extreme weather**

According to the IPCC, in a 4 °C world where carbon policy fails to mitigate global average temperature increases, there will be severe changes in overarching climate patterns, including an average rise in sea level of 11.81 inches by 2030 and a reduction in worldwide productivity and GDP growth. In a 1.5 °C world, we expect the increase in chronic impacts to occur over a much longer timescale and to be more limited.

**Impact to Business**

Time horizon: Medium to Long Term



- Increased property maintenance cost
- Operational delays



- Less dredging maintenance cost

**Risks:**

1. Increased cost of property maintenance/reinforcements and relocations due to erosion from sea level rise/tidal wave changes.
2. Customer port and terminal area will be impacted and may impact the need for port management services.
3. Delays in shipment due to disruption to trading routes, ports and related infrastructure due to submergence, coastal flooding and coastal erosion.

**Opportunities:**

Reduced cost of business from less maintenance dredging (levelling of seabed) services for our Marine & Heavy Engineering business segment.

**Management Approach**

Chronic physical risks, including increasing sea levels, may have impacts on our shipping operations, offshore floating facilities, marine repairs and heavy engineering yards. We understand that the conditions and severity of risks may change over time. Therefore, MISC continues to monitor these risk indicators and develop specific mitigation measures to ensure resilience of the business infrastructures.

MISC progressively steps-up preventive inspection and monitoring measures including dredging activities to reinforce our coastal operational areas and cater for any impacts due to rise in sea levels and tidal waves.

**Stance on Arctic Routes:**

The melting of the ice caps may open up more Northern Sea routes which is said to improve the shipping routes between the Arctic region and Asia. One of the key instruments when considering any proposal involving trade in the Arctic routes is compliance with the Polar Code. The chapters in the Code each set out goals and functional requirements to include (amongst others) prevention of oil pollution, prevention of pollution from noxious liquid substances from ships, prevention of pollution by sewage from ships and prevention of pollution by discharge of garbage from ships. There is the aspect of restricting emission of black carbon from shipping operating in the Arctic regions. The Marine Environment Protection Committee's meeting for its 77<sup>th</sup> session (MEPC 77) also adopted a resolution on voluntary use of cleaner fuels in the Arctic, to reduce black carbon emissions. In this regard, MISC's current business model does not involve trading in areas governed by the Polar Code.

**MISC's current business model does not involve trading in areas governed by the Polar Code.**

## CLIMATE-RELATED FINANCIAL RISKS AND OPPORTUNITIES

Transition Risks –  
Regulatory

Increasing carbon-related policies and legislations such as the Energy Efficiency Existing Index (EEXI) and Carbon Intensity Indicator (CII), European Union Emissions Trading System (EU ETS) and the FuelEU Maritime Regulation will continue to increase the cost of compliance.

Decarbonisation is now one of the most critical challenges for the maritime industry. Bearing in mind the multiple pathways and degree of uncertainty surrounding each pathway, industry players are taking the necessary steps to reach the goal for the reduction of GHG emissions from shipping by at least 50 percent by 2050. Shipyards, engine manufacturers and energy companies are upgrading their operations and technologies to meet future emerging legislations.

## Impact to Business

## Time horizon: Short to Medium Term



- Cost of compliance
- Carbon tax
- Decreased asset value

## Risks:

1. Increase in compliance cost to cater for higher possibilities of leak and spillage which leads to subsequent higher clean-up or restoration cost.
2. Increased cost of compliance (e.g. newer technology) to meet growing stringent environmental and climate policies and regulations.
3. Higher operational costs due to potential carbon tax incurred and older vessels on conventional fuel.
4. Reduced potential for contract extension due to high carbon emissions/non-compliant for customers regulatory requirement (high cost of compliance for customer) resulting in decreased asset value and risk of stranded assets.



- Collaboration on low-carbon solutions
- Market increase in low to zero-carbon vessels, new inspections and training

## Opportunities:

1. Increased opportunities for our shipping, offshore and Marine & Heavy Engineering business segments to collaborate on low-carbon solutions/new technologies with customers, resulting in cost sharing and potential full investments from customers.
2. New business for our shipping and offshore business segments by providing low to zero carbon assets.
3. New revenues for our Port Management & Maritime Services from provision of environmental-related inspections for future legislation for marine transport industry.
4. Increased revenue for Maritime Education & Training business on the ability to provide new or enhanced training syllabus due to new/GHG adaptation retrofits/new asset class vessels.

## Management Approach

Regulatory and compliance risks associated with current or emerging regulations is a part of MISC's climate-related risk assessments. The compliance requirements and costs associated with relevant regulations in the countries and regions in which we operate are considered as part of our compliance programmes and processes to ensure compliance with the requirements.

We proactively keep abreast with maritime legislation and the unilateral decisions of maritime nations. MISC is guided by the IMO regulations, guidelines and strategy in addressing GHG emissions from international shipping.

IMO's MEPC has adopted an initial strategy to reduce GHG emissions from ships. The MEPC aims to reduce total annual GHG emissions by at least 50% by 2050 compared to 2008 while pursuing efforts to phase them out entirely.

The Energy Efficiency Design Index (EEDI) has been driving technical efficiency improvements in new ships since 2013. Incrementally tightened every five years, the EEDI is expected to stimulate continued innovation and the technical development of all the components influencing the energy efficiency of a ship from its design phase.

New and emerging climate-related regulations include:

- The EEXI, which comes into force on 1 January 2023, adopted by IMO, requires existing ships to improve their technical efficiency to a required energy efficiency standard. Vessels that do not meet the minimum design efficiency standard will require technical modifications to achieve compliance.
- The carbon intensity indicator (CII) scheme is IMO's new requirement to be enforced commencing 1 January 2023, which will rank ships on a scale of A (best) to E (worst) based on the ship's operational CO<sub>2</sub> intensity. Vessels rated D for three consecutive years or Rating E will be required to

carry out corrective action plans to reduce their CO<sub>2</sub> intensity to achieve Rating C. The plan must be documented in the Ship's Energy Efficiency Management Plan (SEEMP).

- New and innovative emission reduction mechanisms are being considered, possibly including market-based measures (MBMs), to incentivise GHG emissions reductions.
- The European Union Emissions Trading System (EU ETS) is expected to be fully extended to shipping in 2024 and will apply to ships over 5,000 gross tonnes performing voyages for the purpose of transporting cargo for commercial purposes, and arriving at, within, or departing from ports under the jurisdiction of an EU member state.
- The FuelEU Maritime Regulation is expected to apply to 5,000 GT vessels from 2025 and is aimed at increasing the use of low-carbon fuel by introducing limits to GHG intensity of energy used onboard ships that trade in EU waters.

MISC continually monitors compliance with existing regulations and any new or emerging regulatory developments as part of its risk assessment and assurance process via the following activities:

- Annual sharing sessions by industry experts and analysts to share insights on market outlook including any new or emerging regulatory developments.
- Participation in maritime industry forums to exchange ideas and keep abreast of developments in climate-related legislations.
- Engagement with various stakeholders including but not limited to regulatory bodies, classification societies, flag states, marine departments of the various countries and customers.
- Conduct internal assurance activity relating to Regulations and Law (R&L), where we undertake the self-assessment of our compliance level on both existing and emerging regulations including twice yearly attestation by the relevant businesses on compliance towards relevant R&L.
- Carry out detailed studies on technological options and CAPEX allocations are then planned out to ensure compliance with current and emerging legislation.

Transition Risks –  
Technological

Global climate policies and commitments have accelerated the development of new technologies on low-carbon solutions. Keeping updated with new technologies requires resources to conduct research and development including training for the right expertise and skills required to manage new low-carbon technologies.

## Impact to Business

## Time horizon: Short to Medium Term



- Increase in CAPEX/OPEX
- Pilot cost in new technologies
- Cost of reskilling

## Risks:

1. Increased CAPEX and OPEX on implementation of new low-carbon solutions.
2. Investment cost in research and development offering products and technologies aimed at reducing carbon emissions.
3. Increased cost of reskilling existing talents and employing more talent to manage new low-carbon technologies.
4. Risk of technological uncertainty – technologies may not perform as expected nor provide solutions to meet emerging regulations.
5. Autonomous (including digitalisation) of port management may reduce the market need for seafarers and port management services.



- Energy cost savings
- Collaboration on low-carbon solutions
- New shore to sea services/ floating assets and training

## Opportunities:

1. Annual cost savings from reduced cost of fuel and electricity consumption.
2. Increased opportunities to collaborate on low-carbon solutions with customers, resulting in cost sharing or potential full investments from customers.
3. Take a market-leading position in adopting new low-carbon technology.
4. New revenue from
  - Enhanced technologically innovative services for shore to sea services for Port Management & Maritime Services.
  - New offshore floating renewables (offshore wind industry) due to expertise in floating assets by our Offshore Business segment.
  - Increased opportunity for our Maritime Education & Training business segment, to provide niche and structured training opportunities required in managing new vessel classes.

## Management Approach

We have been improving the technological design of our vessels in terms of energy efficiency to meet the expectations of our stakeholders. Initiatives have been undertaken for our newbuilds and retrofitting existing vessels with green technologies include energy efficiency measures and emissions reduction system. For example, since 2019 we have introduced the dual-fuel system into our newer petroleum vessels.

As members of the Getting to Zero Coalition, we share its ambition of getting commercially viable deep-sea zero-carbon emission vessels powered by zero-emission fuels into operation by 2030. MISC has partnered with strategic players

on The Castor Initiative. This joint development project is aimed at developing commercially viable ammonia-fuelled tankers to support a decarbonised future for the shipping industry.

MISC's Petroleum and Product business segment is also exploring GHG abatement technologies to reduce methane emissions from LNG fuelled vessels and carbon capture technologies for retrofitting its existing fleet. At MISC Group level, incubation workgroups are formed to review GHG abatement technologies that are suitable for adoption on MISC vessels.

**MISC has partnered with strategic players on The Castor Initiative aimed at developing commercially viable ammonia-fuelled tankers to support a decarbonised future for the shipping industry.**

## CLIMATE-RELATED FINANCIAL RISKS AND OPPORTUNITIES

Transition Risks –  
Market

Shift in customer expectations towards a low-carbon economy resulting in energy transition to alternative fuels/renewable energy will most likely reduce the global need for fossil fuels. This may impact market size requirements for oil and gas tankers, offshore assets and the need for heavy engineering fabrication works. In addition, changing capital provider trends towards net-zero and sustainable investments, will reduce capital availability for fossil fuel related projects.

## Impact to Business

## Time horizon: Medium to Long Term



- Market resizing due to energy transition
- Increased cost of borrowings

## Risks:

1. Increased adoption of renewable energy may impact demand for fossil fuels, thus reducing market need for current oil and gas related services.
2. Risk of investors avoiding exposure to oil and gas related businesses.
3. Increased cost of borrowing and reduced capital availability as financial institutions are more reluctant to act as intermediaries.
4. Insurance companies may be reconsidering their underwriting policies based on their climate risk policies.



- Low carbon solution services from new income streams

## Opportunities:

1. Increased revenue through:
  - Ability to venture into full EPCIC with our internal competency and engineering capability in low-carbon technologies and collaboration with low-carbon solution providers.
  - Ability to offer modifications/retrofits/conversions on vessels and assets to reduce GHG emissions.
  - New business opportunities within the renewables segment (e.g. offshore wind farm projects).
  - Tapping into new gas market areas (e.g. liquid CO<sub>2</sub> carrier in supporting the carbon capture, utilisation and storage (CCUS) initiative).
  - Potential revenue stream from the option for minimum manning on Floating Storage Unit facilities which enhance safety and reduce cost in the long run.
2. Reduced cost of borrowings with increased chances for preferential rate (sustainability linked loans /green financing) from capital providers as an early mover on low-carbon technology.

## Management Approach

MISC is gearing up to cater to customers' preferences for low-carbon solutions. Since 2019, our Petroleum fleet (AET) has been progressively introducing LNG dual-fuel vessels and as of 2022, we have a total of 11 dual-fuel engines vessels (with 3 under construction). In 2021, AET partnered with Daphne Technologies to pilot the use of GHG abatement technology to reduce methane slips from our LNG dual-fuel vessels.

The Castor Initiative aims to develop zero-carbon emission vessels (ZEV) to address the shift towards a low-carbon economy. MISC expects to progressively change its fleet to ZEV latest by 2030 as part of its Net-Zero GHG Emissions commitment by 2050. We have an MOU with a charterer to deliver our initial 2 units of ammonia fuelled zero-carbon emission Aframax vessels by 2025 and 2026.

In addition, some of the low-carbon technologies installed on our offshore assets recently include the Flare Gas Recovery System, Combined-Cycle Power System, Condensate Recovery System and Variable Speed Drive.

In addressing the market risks on the potential market resizing of oil and gas business opportunities towards renewable energy typed opportunities, our shipping and offshore business

segments are exploring new gas-related cargo carriers and alternative energy offshore assets to serve new energy transition market areas.

Our MISC 2050 business strategy enables MISC to explore innovative ideas that will produce assets and services to support the value chain of the following two pillars of growth:

- Renewable Energy.
- Waste-to-Value.

Being the connectors to bridge the land-based economy with the emerging ocean economy, our existing business can support our future new pillars of growth as follows:

- Marine & Heavy Engineering business segment is well positioned to construct sea-worthy assets that can support the ocean economy.
- Our offshore and shipping business segments have vast experience on operating and leasing large-scale assets that float on the seas.
- MISC shipping businesses provide specialised services that transport energy (molecules) across the globe to meet the demands of energy producers, energy importers and traders.
- Our existing marine-related business engineering and operating expertise will be our fundamental strengths as we explore possibilities in the emerging ocean economy.

Transition Risks –  
Reputation and Social

Being perceived as either advanced or a laggard on climate change action could impact our reputation with customers and may impact talent retention and attraction.

## Impact to Business

## Time horizon: Short to Long Term



- Brand equity to attract customers and talents

## Risks:

1. Poor climate performance may reduce MISC's brand equity, which may result in:
  - Being less competitive and attractive to customers and capital providers.
  - Difficulty to attract and retain talent as the newer generation may not wish to be associated with oil and gas related businesses.



- Investments in low-carbon technologies
- Stewardship position in decarbonisation

## Opportunities:

1. Investments in low-carbon technologies and GHG performance may lead to inspiring better trust in the company and reputation benefits.
2. Taking a stewardship position and driving advancements in decarbonisation technology will attract and retain talents.

## Management Approach

MISC operates in maritime and energy-related industries, both of which are highly scrutinised by stakeholders in terms of transparency on their environmental stewardship efforts.

MISC introduced several measures and initiatives to address reputational risks including:

- Setting GHG emissions intensity reduction goals;
- Committing to Net-Zero GHG emissions by 2050; and
- Communicating sustainability efforts and achievements to internal and external stakeholders.

MISC has a shared responsibility to demonstrate its commitment to driving positive decarbonisation efforts within the shipping industry and locally through our:

- Role as a strategic partner of the Global Maritime Forum;
- Signatory to Getting to Zero Coalition since 2019; and
- Corporate Friends of Climate Governance Malaysia.

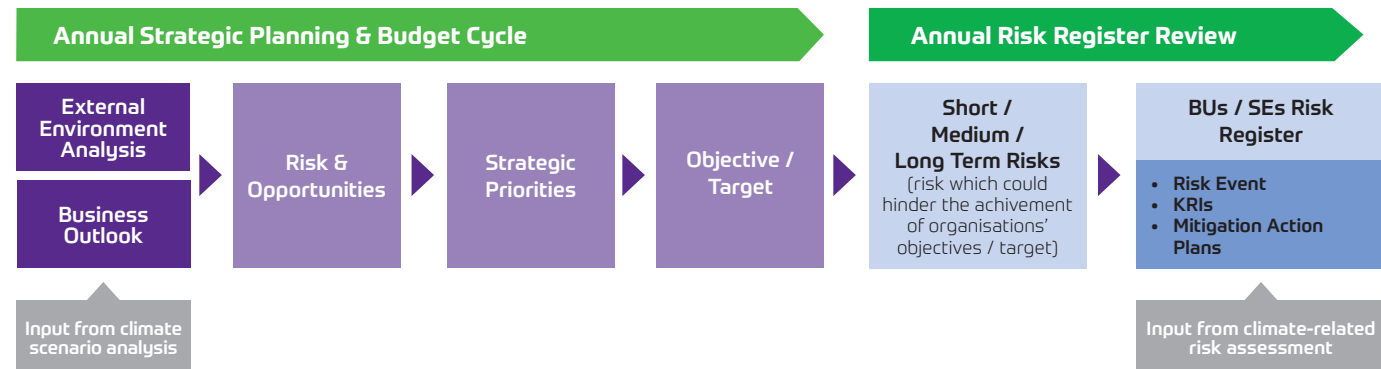
Our progress in addressing climate-related challenges will enhance our reputation, increase trust and strengthen our position as a leading global industry player in contributing towards climate action.

At MISC, we understand that advancement in green technology will require new skillsets and talent. Plans are in place to reskill resources and align with new business partners on new low- or zero-carbon technologies which will reposition MISC's stewardship position in driving advancements in decarbonisation technology.

“Our progress in addressing climate-related challenges will enhance our reputation, increase trust and strengthen our position as a leading global industry player in contributing towards climate action.”

## RISK MANAGEMENT

MISC Group evaluates climate risk as part of its strategy and business planning process and Enterprise Risk Management (ERM) framework. Project Risk Assessment (PRA) is conducted to identify risks before starting a new capital-intensive project. The PRA enables the business to identify and implement appropriate controls to mitigate the project risks.



### STRATEGIC RISK

In identifying our strategic climate risks, we consider the following factors:

- The external environment analysis which includes considering the impact of climate-related scenarios on our business outlook; and
- Existing and emerging regulatory requirements related to climate change.

Material risks and opportunities will be translated into strategic priorities as part of our five-year rolling business plan. A risk or opportunity is deemed material if has a high chance of occurrence and has substantial financial impact on MISC objectives.

### INVESTMENT DECISIONS

Climate-related risks and opportunities are considered in project risk assessments and project economics, which are reflected in Management and Board Final Investment Decision (FID) papers. MISC prioritises risks and opportunities, including those related to climate challenges by assessing the severity of the potential impacts of the risk and the scale of the opportunities.

As part of MISC's investment decisions, the following considerations are undertaken to estimate the potential size and scope of identified climate-related risks of carbon emissions of new assets before proposing options to mitigate, transfer, accept, or control those risks:

- Existing and emerging regulatory requirements related to climate change including applicable external carbon prices;
- Potential low-carbon technologies to improve the emission, efficiency, and performance of the asset (including sensitivity assessment using internal carbon pricing – shadow price comparisons); and
- Total greenhouse gas and intensity rates of the new asset and alignment with MISC's climate commitments.

### ENTERPRISE RISK MANAGEMENT (ERM)

Risk management activities are undertaken at service/ business units/subsidiary levels across the Group. Risk reports are reviewed and monitored by the Corporate Planning division quarterly before being escalated to the Risk Management Committee and deliberation by the BSRC and subsequently reported to MISC Board. As part of MISC's ERM process, service /business units and subsidiaries are required to perform an annual review of their risk profiles, with emphasis on linking risks to MISC's business objectives, which includes climate-related risks, its impact and mitigation plans.

MISC adopts the PETRONAS Resiliency Model (PRM), which provides an integrated view for managing risks. It is also guided by international best practice on risk management as per ISO 31000 and the Malaysian Code of Corporate Governance (MCCG) 2021.

### SCENARIO ANALYSIS

The impact of several pathways and assumptions on MISC's business was modelled using two GHG scenarios — a Low GHG and a High GHG Scenario in 2100, taking a snapshot of the pathway in 2050:

- A low emissions scenario in accordance with limiting global temperature rise to 1.5 °C; and
- A high emissions scenario where temperatures rises 4 °C from pre-industrial levels.

The scenario modelling assumptions were sourced from:

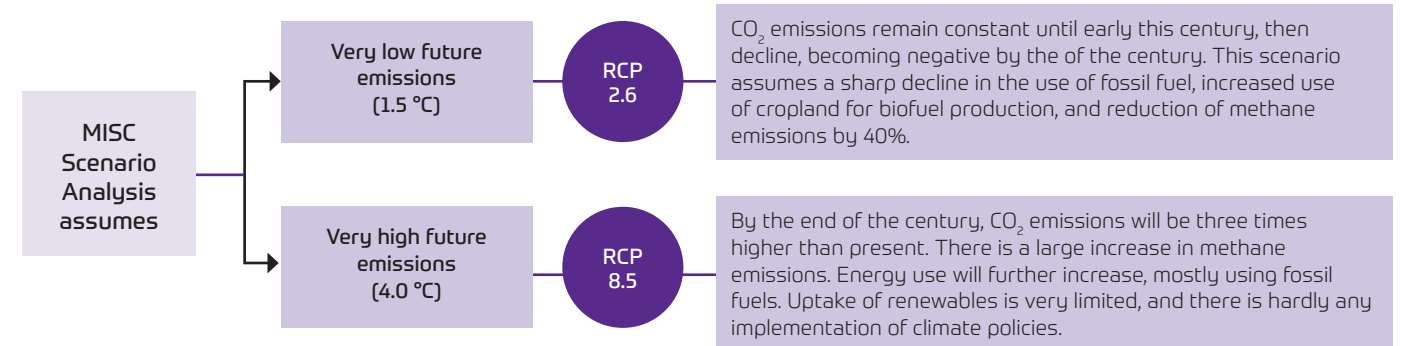
- Intergovernmental Panel on Climate Change (IPCC);
- Representative Concentration Pathways (RCP 2.6 and RCP 8.5);
- Shared Socioeconomic Pathways (SSP);
- International Energy Agency (IEA); and
- The International Renewable Energy Agency (IRENA).

### RCP Scenario – Scenario Definition

<b>Representative Concentration Pathways (RCP) Scenario</b>	A set of scenarios created by the IPCC assuming the different outcomes of climate change depending on the performance of greenhouse gas emissions policies. It refers to the degree of influence force that changes the energy balance of greenhouse gases, etc.
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### RCP Scenario – Projection Per Scenario

MISC Scenario Analysis (°C)	Scenario	CO <sub>2</sub> concentration in 2100	Projection of temperature rise from 2081 to 2100		Projection of sea-level rise from 2081 to 2100	
			Average	Range	Average	Range
1.5	RCP 2.6	421ppm	1.6 °C	0.9~2.3 °C	0.49m	0.35~0.69m
4.0	RCP 8.5	936ppm	4.3 °C	3.2~5.4 °C	0.89m	0.54~1.13m



To understand and connect the political, business and social responses to climate change and associated global carbon budgets, emissions pathways and the expected physical climate-related impacts, the climate analysis and scenarios were derived based on the following driving forces:

Driving Forces	Low Emissions Scenario (In line with a 1.5 °C world)	High Emissions Scenario (In line with a 4.0 °C world)
<b>ENVIRONMENTAL</b>	<ul style="list-style-type: none"> <li>• Sea level rise already occurring</li> <li>• Changes in sea wave patterns</li> <li>• Extreme weather effects on infrastructure and communities</li> </ul>	<ul style="list-style-type: none"> <li>• Sea level rise worsening</li> <li>• Greater risks in absence of mitigation measures</li> <li>• Unpredictable sea wave patterns</li> <li>• Greater frequency and impacts of extreme weather</li> </ul>
<b>POLITICAL &amp; LEGAL</b>	<ul style="list-style-type: none"> <li>• International collaboration</li> <li>• Policies to support 'Net-Zero' transition</li> <li>• Government incentives and collaboration on:                             <ul style="list-style-type: none"> <li>- Carbon pricing</li> <li>- GHG legal frameworks and acts</li> <li>- Industry environmental standards</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Carbon pricing not broadly adopted or at a lower price</li> <li>• Large differences across regions and countries on environmental standards and requirements</li> </ul>
<b>TECHNOLOGICAL</b>	<ul style="list-style-type: none"> <li>• Renewable and carbon-neutral fuel developments</li> <li>• Collaborations and investments increasing on CCUS technologies and cross-sector CCUS adoption</li> </ul>	<ul style="list-style-type: none"> <li>• Process efficiency focus and slower shift towards best performing technologies</li> <li>• Lack of collaboration</li> <li>• Increased costs of energy transition</li> <li>• Lack of funding to deploy CCUS on a large scale</li> </ul>
<b>ECONOMIC</b>	<ul style="list-style-type: none"> <li>• GDP growth: between 1.5%-2.5% annually</li> <li>• Rapid transformation towards renewables and as a large part of energy systems</li> <li>• National energy transition plans in place</li> </ul>	<ul style="list-style-type: none"> <li>• GDP growth: between 1.3% - 2.3% annually</li> <li>• Slower transformation towards renewables</li> </ul>
<b>REPUTATION &amp; SOCIAL</b>	<ul style="list-style-type: none"> <li>• Stakeholder pressure for climate risk management</li> <li>• Trends in working age populations and customers concerned on company ESG performance</li> </ul>	<ul style="list-style-type: none"> <li>• Increased pressure and urgency placed on companies for action</li> <li>• Heightened working age populations and customers concerned on company ESG performance</li> </ul>

Outcome of MISC Group Climate Scenario Analysis

Risk Category	Element	Potential Risks and Opportunities	Low Emissions Scenario (1.5 °C)	High Emissions Scenario (4.0 °C)
Physical	Acute	Extreme weather (acute)	Minimal impact as assets today is built to withstand certain extreme weather conditions	Increased OPEX to maintain and reinforce assets due to extreme heightened weather conditions
	Chronic	Sea level rise (chronic)	Increased cost of property maintenance/reinforcements and relocations due to erosion from sea level rise/tidal wave changes	Increased OPEX to relocate or implement adaptation measures for operations at coastal locations
Transition	Regulatory	Increasing environmental/carbon regulations	Escalating compliance cost due to increasingly heightened carbon regulations - capital expenditure (CAPEX) and operational cost (OPEX)	Increased compliance cost due to moderately increasing carbon regulation - CAPEX and OPEX
	Technological	Development of new low-carbon solutions technologies	Increased investment cost in low-carbon technologies	Increased investment cost in low-carbon technologies
		Training for the right expertise and skills	Increased talent development cost (OPEX)	Increased talent development cost (OPEX)
	Market	Shift in customer and market expectations towards low-carbon economy	Reduced market demand for petroleum production, storage and transportation assets and logistics services	Moderate reduction in market demand for petroleum production, storage and transportation assets and logistics services
		Changing capital providers trends	Lack of funding/Increased interest rates for conventional marine fuelled assets	Increased interest rates for conventional marine fuelled assets
	Reputation & Social	Being perceived as advanced/laggard in climate change	Increased OPEX to attract and retain talents	Moderate increased OPEX to attract and retain talents
	Talent retention and attraction			

**LOW** Insignificant to minor to impact to MISC's current business objectives    **MEDIUM** Moderate impact to MISC's current business objectives    **HIGH** Major impact to MISC's current business objectives

1.5 °C SCENARIO

This scenario correlates and is aligned with the Paris Agreement to keep average global warming well below 2 °C and continue all efforts to limit the rise in temperatures to below 1.5 °C. In this scenario, global governments are collaborating on carbon regulations and policies. There is higher gross domestic product (GDP) growth and a significant transition to renewables with continued growth in energy demand. Increased interest and demands are made from various stakeholder groups regarding climate change. Extensive research and development on alternative energy, renewables, carbon removal and rapid technological improvements on emissions reductions exist. There is a continued adoption and awareness of changing environmental regulations on carbon pricing and other legal frameworks, supported by climate action across industries.



- Reduced market demand for petroleum production, storage and transportation



- Repurpose assets as alternative fuel floating storage
- Short-medium term demand for LNG vessels

CLIMATE RISKS

Increasing environmental/carbon policies and legislation driving towards a rapid energy transition to renewables, cleaner and/or non-fossil fuelled energy sources may impact our shipping and offshore business segments resulting in reduced market demand for petroleum production, storage and transportation assets and logistics services. As a result, it is expected that there will be increased compliance costs in the form of increased CAPEX and operational costs for future and existing assets. Stringent environmental regulations may cause assets to be sold prematurely if they cannot be climate-proofed without considerable investment. However, these decommissioned assets open up other opportunities for repurposing these assets as floating storage for the alternative green fuel market and other circular economy opportunities in the future ocean economy.

CLIMATE OPPORTUNITIES

MISC's Gas Assets & Solution (GAS) business segment is expected to continue to have short- to medium-term transition opportunities due to strong demand and market growth for cleaner sources of energy; and relatively reduced carbon tax for clean fuel such as LNG. Beyond the medium-term horizon, LNG as a transition fuel may still see growth especially with emerging advanced technological improvements to reduce methane slip emissions from LNG and incentives by government policies to adopt cleaner energy as transition fuels prior to full adoption of renewables and other zero-carbon energy fuels. Our shipping business segment, Gas Assets & Solutions and Petroleum & Product Shipping, can benefit from increased revenue from new vessels and asset classes that can cater for market demand to meet growing stringent environmental and low-carbon related legislation. These new business segment and low-carbon services can allow MISC to enter new markets as an

alternative energy transporter such as an alternative fuel transporter or stored renewable energy.

An increased global carbon tax may increase MISC's cost of operation in the short term. In the longer term, it will also promote investments in the carbon capture and storage (CCS) market and low-carbon or more efficient GHG abatement technologies. Our Shipping and Offshore Business segments have an opportunity to collaborate with supply chain partners and customers to improve the GHG performance of assets in the medium- to long-term.

We expect that our market reputation will improve as business partners recognise us as a low-carbon solution provider contributing to net-zero and the circular economy. Seizing opportunities to take leadership positions in the market will increase competitiveness and opportunities for new contracts. These opportunities may increase revenue and help attract and retain talents within the organisation. In this scenario, collaboration across the value chain and the advancement of technology to build zero-carbon emission vessels with high energy efficiency and optimised resource utilisation will enable increased cost-sharing for retrofitting and investment plans. Sustainable annual cost savings from lower energy consumption may also compensate for higher research and development and CAPEX allocation.

The Marine & Heavy Engineering business segment is expected to seize business opportunities and increase revenue by offering modifications, retrofits and conversions to vessels and floaters, as they race to comply with stringent future climate legislation. Opportunities for the Marine & Heavy Engineering business segment would include the provision of fabrication services to incorporate CCS onto oil and gas offshore assets and for renewable energy assets.

**We expect that our market reputation will improve as business partners recognise us as a low-carbon solution provider contributing to net-zero and the circular economy.**



## CLIMATE-RELATED FINANCIAL RISKS AND OPPORTUNITIES

## 4 °C SCENARIO

Global climate action institutions are fragmented with most countries not supporting the transition to net-zero. Increased competition for scarce resources drives inequality and lower growth for renewables. There is lack of concerted action and hence technological progress towards effective solutions is delayed. New technologies to reduce GHG and slow down the effects of climate change are adopted at a slower pace. There is also lack of information surrounding future risks with carbon prices increasing less rapidly and unclear legal frameworks. Sea level rise worsens with unpredictable sea wave patterns and greater frequency of extreme weather.



- Operational delays
- Personal injury and asset damage
- Cost of compliance



- Rapid development in vessel design
- Existing business growth

## CLIMATE RISKS

In this scenario, increased maintenance costs and CAPEX can be expected. Vessels and offshore assets require more frequent maintenance to withstand increasing extreme weather. Additional CAPEX may be required to reinforce the building sites and fabrication yard infrastructure of our Marine & Heavy Engineering and Maritime Education & Training business segments. Our shipping and non-shipping segments may experience reduced revenue due to delays and disruptions to operations and reparations.

Decreased transportation routes or sudden route changes due to extreme weather events may further increase operating costs. There could also be increased exposure to liability from personnel injuries and asset damage caused by increasing storm surges, changes in precipitation, and greater intensity and frequency of typhoon/cyclone events.

## CLIMATE STRATEGY

MISC Group's climate strategy is divided into two time horizons to decarbonise existing business and mitigate our long-term financial impacts by positioning ourselves competitively in the net-zero economy:

- A transition plan for short and medium-term risks; and
- A long-term climate strategy

## LOW-CARBON TRANSITION PLAN (SHORT TO MEDIUM TERM, UP TO 2030)

During this transition period, each business segment has developed a decarbonisation plan to contribute to MISC Group's Net-Zero GHG emissions commitment by integrating climate factors across MISC's business strategy and financial planning (including usage of internal carbon pricing) and deploying low-carbon technologies for our newbuilds.

Our transition decarbonisation plans include to:

- Progressively decommission our older fleet and progressively replace these with dual-fuel vessels that possess low methane slip engines and add on methane and nitrous oxide scrubbing technologies;
- Increase the use of renewable energy on our assets;
- Explore and invest in low-carbon technologies on zero-carbon emission vessels - The Castor Initiative where we are collaborating with strategic value-chain partners to develop ammonia-fuelled vessels for deep-sea transportation;
- Explore and build strategic partnerships with key technology providers of carbon removal technologies for assets both in the shipping and non-shipping business segments;
- Explore new business along the value chain of Renewable Energy and Waste-to-Value, leveraging our floating ocean asset business knowledge; and
- Continuously improve the technical and operational efficiency of existing ships.



## MISC's GHG INTENSITY TARGET 2030

MISC's interim milestone target to reduce 50% of our shipping fleet's GHG intensity by 2030, compared with the base year of 2008, positions the Group to meet IMO 2030 and GHG related regulations.

Between now and 2030, so as to lower our GHG intensity, we are working on various initiatives to improve both the technical and operational efficiency of our ships to make them more efficient, transforming our fleet to high efficiency dual-fuel newbuilds and exploring advanced GHG adaptation technologies to minimise methane slip.

## HIGH EFFICIENCY DUAL-FUEL NEWBUILDS

Our LNG dual-fuel VLCCs are among the world's most environmentally friendly vessels in the shipping industry. Our latest LNG dual-fuel VLCCs are fitted with advanced technologies, including an M-type, electronically controlled, gas-injection (MEGI) engine, which will reduce methane emissions when compared to low pressure engines. All our dual-fuel vessels can achieve 99% reduction in sulphur oxide (SOx) emission, 85% reduction in nitrogen oxides (NOx), 95% less particulate matter (PM) and up to 30% less CO<sub>2</sub> on gas mode by design when compared to marine gas oil. The vessels also feature a hybrid vertical bow that lowers hull resistance, improves fuel efficiency and reduces ship vibrations.

Our dual-fuel DPSTs are also fitted with volatile organic compound (VOC) recovery systems. These captured VOCs are reused as a supplementary fuel which, in combination with a more efficient system for dynamic positioning and a range of power and automation solutions, saves roughly up to 4,000 tonnes of fuel per year per vessel compared with conventional DPSTs of the same size, delivering significant cost savings, alongside substantial emissions savings.

Our latest LNG carriers will be equipped with eco efficient technologies such as X-DF 2.1 engines with Intelligent Control by Exhaust Recycling (iCER) System and Air Lubrication System, which will contribute to the reduction of GHG emissions.

“Our LNG dual-fuel VLCCs are among the world's most environmentally friendly vessels in the shipping industry.”

## TECHNOLOGICAL AND OPERATIONAL EFFICIENCY

We have implemented/installed the following on our vessels to increase fuel efficiency and reduce energy consumption:

- Propeller Boss Cap Fin which eliminates vortex from the centre of the streamflow, increases ship speeds and lowers fuel consumption;
- Advanced Anti-Fouling Paint - Coated with tributyltin-free (TBT-free) to minimise the release of harmful biocides into the marine environment; and
- Ecoshield Rudder Paint - Assist in reducing cavitation damage to vessels.

Our GAS and petroleum fleet have been certified with the ISO 50001 energy management standard, which provides a continuous improvement framework to improve the energy efficiency of our shipping operations.

## RESPONSIBLE SUPPLY CHAIN

MISC Group has committed to Net-Zero Greenhouse Gas Emissions by 2050. Part of this commitment includes Scope 3 - value chain emission reductions. We have developed our inventory for Scope 3 emissions to understand the materiality and manage the risks and opportunities associated with emissions from MISC's value chain. We will monitor our material Scope 3 emissions and look into Scope 3 reduction emissions in the near future.

As part of our Responsible Supply Chain Strategic Initiative, we are committed to drive sustainable practices with our suppliers. Our aim is to look for collaboration/business partners opportunities on low-carbon solutions as we move towards decarbonisation of our operations and promote Circular Economy across our value chain.

## THE CASTOR INITIATIVE - ZERO CARBON EMISSIONS VESSEL

To achieve our 2030 – 2050 milestone, we understand that this is not something that MISC can realise alone. We need to work alongside with value chain partners across the maritime industry in The Castor Initiative, where we are committed to develop a commercially viable ammonia fuelled zero carbon emissions vessel before 2030.

In 2022, Lloyd's Register, Samsung Heavy Industries (SHI) and MISC via its subsidiary, AET, signed a Memorandum of Understanding (MOU) for the development and construction of two very large crude carriers (VLCC) which can be operated on zero-emission fuel. The three companies, all founding members of The Castor Initiative, are taking the lead to encourage the use of green ammonia as propulsion fuel, with the first of these dual-fuel tankers entering into service in late 2025 and the second in early 2026.

CLIMATE-RELATED FINANCIAL RISKS AND OPPORTUNITIES

OFFSHORE FLOATING ASSETS LOW-CARBON SOLUTIONS

New technologies are explored regularly and installed on our offshore assets if feasible to improve energy efficiency and reduce or capture carbon emissions. Some of the technologies installed on our offshore assets are Flare Gas Recovery System, Combined-Cycle Power System, Condensate Recovery System and Variable Speed Drive.

Our Offshore Business Unit will submit bids for Exploration & Production (E&P) projects which contributes to lower carbon foot print and new asset solutions for the “Clean Energy transition” opportunities.

MARINE & HEAVY ENGINEERING (MHB)

Our Marine & Heavy Engineering has transition plans to increase the use of more renewable energy and electrification of the yard’s activities.

MHB has capabilities to conduct a full EPCIC with our internal competency and engineering capability in low-carbon technologies and collaboration with low-carbon solution providers to offer modifications/retrofits/conversions on vessels and assets to reduce GHG emissions.

TALENT UPSKILLING

Apart from improving the decarbonisation technology within the services we offer, we pay close attention to upskilling our people on the upcoming new technologies and the importance of reducing climate impacts and all related ESG issues.

LONG-TERM PLAN (2031-2050)

NET-ZERO GHG EMISSIONS COMMITMENT

MISC Group is committed to Net-Zero GHG emissions by 2050. This commitment covers our own operations and those impacted across our value chain. As part of our long-term plans to stay resilient to climate change, MISC’s existing business model would continue to evolve in the following two dimensions:

Decarbonisation of our existing operations to meet the growing demands of the market for the sustained growth of our existing portfolio, which includes:

- Progressively converting our fleet and ensuring all newbuilds are zero-carbon emission vessels from 2031 or sooner if possible;
- Retrofitting carbon removal technologies on recent assets (ie. vessels with remaining lifespan of 15 years);
- Increasing the use of renewable energy on our vessels, offshore assets and land operations; and
- Continuously deploying digital energy-efficient technologies and increasing operational efficiencies.

In parallel we will be exploring new business income streams in line with MISC 2050 vision that can support the value chains of Renewable Energy and Waste-to-Value pillars

INTEGRATED MARINE SERVICES (EAGLESTAR)

Our Integrated Marine Services business segment is undergoing transition plans to improve skills and capabilities of seafarers in adapting new technology related to low-carbon solutions. With this newly acquired technological skillsets, Eaglestar will have the ability to serve beyond maritime industry and diversify into other industrial usage.

With our advantage in industrial engineering experience and skills in ship management, Eaglestar is exploring plans to develop own pool of experts on new green technology and serve beyond maritime industry and diversify into other industrial usage.

PORT MANAGEMENT & MARITIME SERVICES (MMS)

As part of transition plan for our Port Management & Maritime Services, we are exploring the following:

- Usage of low to zero carbon tugboats;
- Provision of enhanced technologically innovative services for shore to sea services of our Smart Port Management System; and
- Provision of low-carbon remote inspection services for new alternative fuel cargo vessels.

DECARBONISATION OF EXISTING OPERATIONS

As the ZEVs gain commercial viability, MISC will embark on progressive fleet conversion to these ZEVs latest by 2030.

While we progressively increase our ZEV fleet after 2030, we take cognisance of the GHG emitted from our existing fleet. Therefore we are considering the need to upgrade our existing fleet with the using CCS technology to safely capture and store away excess carbon. However this is subject to the advancement and maturity level of the technology, regulations and supply chain for CSS to become a viable option for international shipping.

As our upcoming offshore assets are going to be equipped with more GHG reduction technologies, we expect to see reductions in our scope 3 emissions after 2030. We have plans to engage with our supply chain on the reduction of their GHG emissions which will result in our overall scope 3 decreasing in the coming years.

RESIDUAL EMISSIONS

MISC recognises that we will still need to address residual emissions that cannot be abated. Therefore, we are exploring nature-based offset solutions that can bring our total GHG towards a net-zero state by 2050.

NEW INCOME STREAMS - MISC 2050

As we move towards 2050, the world will progressively undergo energy transition into renewable and alternative energy sources to mitigate climate change. The development of new business opportunities or income streams into our present portfolio mix is a crucial step to ensure that the Group continues to remain resilient and relevant.

We believe we can actively remain relevant by explore the opportunities to be part of two distinct value chains:

- Renewable Value Chain
- Waste-to-Value chain

Together, both the growth of our existing business portfolios and the new MISC 2050 business ventures will reshape a new MISC Group business model that will provide financial sustainability for MISC in the years leading up to 2050.

TASK FORCE ON CCUS

Identified as one of the credible and viable ways to reduce carbon footprints towards achieving a net-zero GHG emissions energy ecosystem, CCUS has enormous potential that can be explored and developed to support decarbonisation efforts across various industries globally.

The task force pooled the knowledge and expertise across the Group to create a team that is tactically focused, strategically integrated, and ready to face the transition ahead. The team comprises representatives from Gas Assets & Solutions, Offshore Business, Petroleum & Product Shipping, Integrated Marine Services, Marine & Heavy Engineering and Port & Terminal Services business segment who will be responsible for facilitating collaboration and unlocking the value to drive MISC Group’s CCUS initiative.

In 2022, MISC took the first step of our MISC 2050 journey, in which we set up a task force which undertook the evaluation of innovative solutions in the area of Carbon Capture, Utilisation and Storage, also known as CCUS.

Recently in January 2023, MISC has signed respective Memorandum of Understandings (MOU) with Mitsui & Co., Ltd., Samsung Heavy Industries (SHI) and ANDRITZ AG (ANDRITZ) to explore opportunities on carbon capture and storage (CCS) solutions in the maritime value chain which include identifying storage hubs, development of floating solutions and carbon capture parts and equipment.

METRICS & TARGETS

MISC Group’s key metrics used to measure and manage climate-related risks and opportunities include:

- GHG intensity performance (in annual emissions ratio in unit of gCO<sub>2</sub>e/ton.nm) for historical periods and 2050 projection;
- Total GHG: Scope 1, 2 and 3;
- Internal carbon price;
- Revenue from low-carbon services;
- Operating expenditure on low-carbon or energy reduction; and
- Energy consumption.

Refer to the Performance Data section for our climate-related key performance metrics and Our Decarbonisation Pathway section for Total GHG Projection 2050.

Methodologies used to calculate or estimate climate-related metrics are included in the Reporting Principles & Data Assumptions section.

GREENHOUSE GAS TARGET & COMMITMENT

Interim Milestone Target	50% GHG intensity reduction by 2030
Scope (Boundary)	<ul style="list-style-type: none"> <li>• Gas and petroleum shipping fleet which falls within MISC’s GHG Organisational Boundary (Financial Control)</li> <li>• Ships not subjected to the requirements of Regulations 21 and 25 of MARPOL Annex VI are excluded</li> </ul>
Base Year	2008
Target Type	CO <sub>2</sub> e intensity
Measurement Metric	AERCO <sub>2</sub> e (gCO <sub>2</sub> e/t-nm)
Scope Boundary	All greenhouse gases (GHG); <ul style="list-style-type: none"> <li>• Carbon Dioxide (CO<sub>2</sub>)</li> <li>• Methane (CH<sub>4</sub>)</li> <li>• Nitrous Oxide (N<sub>2</sub>O)</li> </ul>

CLIMATE-RELATED FINANCIAL RISKS AND OPPORTUNITIES

Long-Term Commitment	Net-Zero Greenhouse Gas Emissions by 2050	
Scope (Boundary)	All greenhouse gases (GHG); <ul style="list-style-type: none"> <li>• Carbon Dioxide (CO<sub>2</sub>)</li> <li>• Methane (CH<sub>4</sub>)</li> <li>• Nitrous Oxide (N<sub>2</sub>O)</li> </ul>	MISC Group of Companies' Value Chain: <ul style="list-style-type: none"> <li>• MISC operations (Scope 1 &amp; 2)</li> <li>• Material upstream and downstream operations to MISC (Scope 3)</li> </ul>
Measurement Metric	AERCO <sub>2</sub> e (gCO <sub>2</sub> e/t-nm)	

Refer to Reporting Principles & Data Assumptions section for details on calculation methodologies.

CLIMATE-RELATED REMUNERATION

In 2022, MISC included climate-related strategic initiatives and annual GHG emission intensity targets as part of ESG-related key performance indicators (KPI) into the 2022 Group Balance Scorecard. Related business units and subsidiaries that have direct control over carbon management or tasked to implement climate-related risks and opportunities including attainment of targets are rewarded through work performance for their contribution to the improvement of the company's carbon and energy performance.

MISC's Nomination and Remuneration Committee (NRC) reviews ESG-related performance of senior management's scorecard and remuneration. The NRC also conducts performance appraisals on the Company and President/Group CEO, covering the elements of financial, strategic initiatives, operations, HSSE and people development. The NRC makes appropriate recommendations to the Board to approve, based on the Company's performance against the balanced scorecard.

In addition, our MISC 2022 Board KPI included the need to consider sustainability risks and opportunities in decision-making processes.

INTERNAL CARBON PRICING

In 2022, MISC explored the usage of internal carbon pricing and its application as an assumed cost to emissions associated with a given investment or project, in order to better understand our climate impacts.

Beginning 2023, an internal carbon price of USD50/ton CO<sub>2</sub>e shall be used to calculate the carbon cost for each new investment. Initially, leading to the full implementation of the internal carbon pricing for financial investment decisions, the cost of carbon would be projected throughout the asset lifespan as one of the factors to be considered in the sensitivity analysis of projects.

Moving Forward

We are on track and progressing with projecting monetary values and time horizons for climate change risks and opportunities. When completed, this analysis will be included in our future disclosures as we move towards quantitative climate-related risks and opportunities disclosure.

We continue to actively promote low-carbon asset solutions to our customers. The Group will engage with customers, suppliers and other stakeholders throughout the value chain to strive for a mutual understanding of our approach to addressing climate change.

We will continue to make further enhancements to provide consistent and transparent annual disclosures to our stakeholders, in line with the TCFD recommendations.



# OUR DECARBONISATION PATHWAY

## TOWARDS DECARBONISATION

### Our Commitment

- Transition to low-carbon operations
- Deploy zero-carbon emissions vessel latest by 2030
- Decarbonised shipping operations by 2050
- Net-Zero GHG emissions by 2050

### Our Initiatives

#### Shipping Operations

##### Short - Medium Term (until 2030)

- Continuous improvement in energy efficiency design and operation
- Progressive fleet renewal to low-carbon fuel
- Collaboration with strategic partners on developing zero-carbon emission vessels

##### Long Term (2031 – 2050)

- Progressive fleet renewal to zero-carbon emission vessels
- Beyond value chain mitigation (carbon removal, avoidance and reduction)

#### Non- Shipping Operations

- Improve energy efficiency in operations
- Increase usage of renewable energy mix

### Our Contribution to UNSDG



Design and operate assets that can combat or reduce effects of climate change



Design or retrofit sustainable assets which optimise resource-use efficiency with greater adoption of clean and environmentally-sound technologies

## DECARBONISING SHIPPING

International shipping produces approximately 3% of global man-made CO<sub>2</sub> emissions and continues to be a critical component of global trade and the economy. However, according to Simpson Spence & Young's annual industry report, shipping-related GHG emissions rose by 4.9% in 2021, which was higher compared to 2020 and 2019.

The rise in emissions comes despite growing climate ambitions and efforts to reduce emissions in the maritime industry. Global ship owners are experimenting with alternative fuels and striving to comply with increasingly stringent emissions regulations and pricing. However, the industry saw massive increases in demand for consumer goods as countries globally got back on track to recover national economies in the post-COVID-19 landscape.

In 2022, clean energy transition fuel LNG prices were high due to changing consumption habits in the post-COVID-19 landscape, which saw rising demand for LNG and lower demand for coal as the world moves away from other fossil fuels. LNG prices were also affected by growing electrification

rates in Asia, both Europe and Asia's reliance on Russian gas, and political instability in Russia and Eastern Europe. This has caused many ships to use conventional fossil fuel for power due to the escalating LNG costs which has hindered progress on the use of LNG as a cleaner transition fuel option towards decarbonisation.

In addition, economic inflation in 2022 caused global supply chain disruptions including a scarcity of shipyards' building space till 2025, resulting in many ship owners having no choice but to continue using older vessels and delay fleet transformation to low-carbon vessels.

This despite the high adoption costs and uncertainty surrounding fuel sources from lower-carbon LNG to carbon-neutral biofuels, zero-emissions hydrogen, ammonia, or electricity that will ultimately become the industry standard. Some decarbonisation technological steps, for instance, are more advanced, require testing, and are not ready for widespread implementation due to safety aspects, availability of bunkering and supply chain support services.

## INITIAL IMO GHG STRATEGY

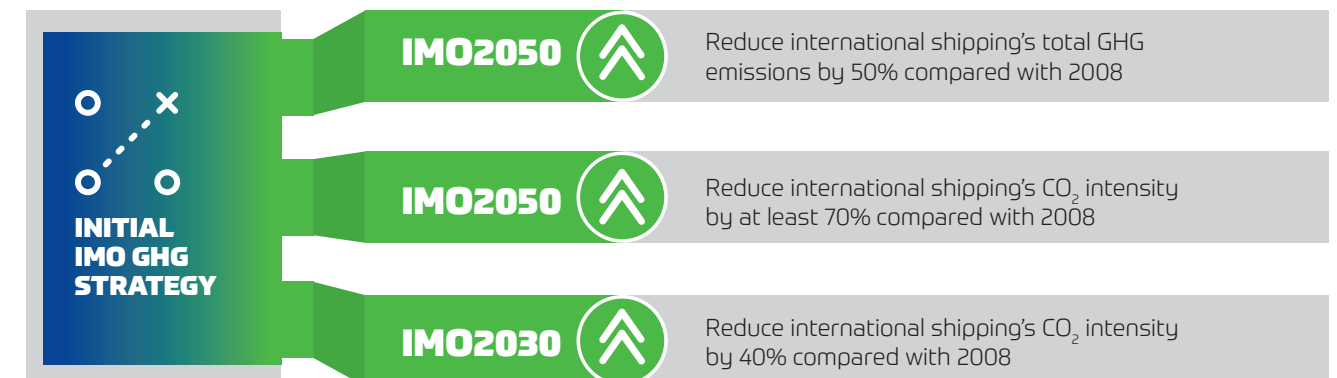
The International Maritime Organisation (IMO) is the division of the United Nations (UN) which regulates shipping. The shipping industry is not directly regulated by the various international treaties which aim to tackle global warming at an international level, such as the Paris Agreement.

However, the IMO is committed to responding to the growing climate crisis and to ensuring that the shipping industry contributes to the global reduction of GHG emissions. In 2018, IMO adopted an initial strategy on the reduction of GHG emissions from international shipping, affirming the IMO's vision and commitment to phasing out GHG emissions as soon as possible.

Since 2018, IMO has been working to achieve these ambitions through a variety of means, including pre-existing design energy efficiency measures and new measures applicable in the short, medium and long term.

As the pressure to reach net-zero by 2050 intensifies along with the call for the shipping industry to align with the Paris Agreement temperature goal, the IMO is working to strengthen its level of ambition on the reduction of GHG from shipping. This comes as the European Union made a decision in 2022 to include European Union Emissions Trading System (EU ETS) and FuelEU Maritime Regulations on shipping, which will introduce carbon pricing to the shipping industry for the first time.

The key ambitions of the initial strategy are:



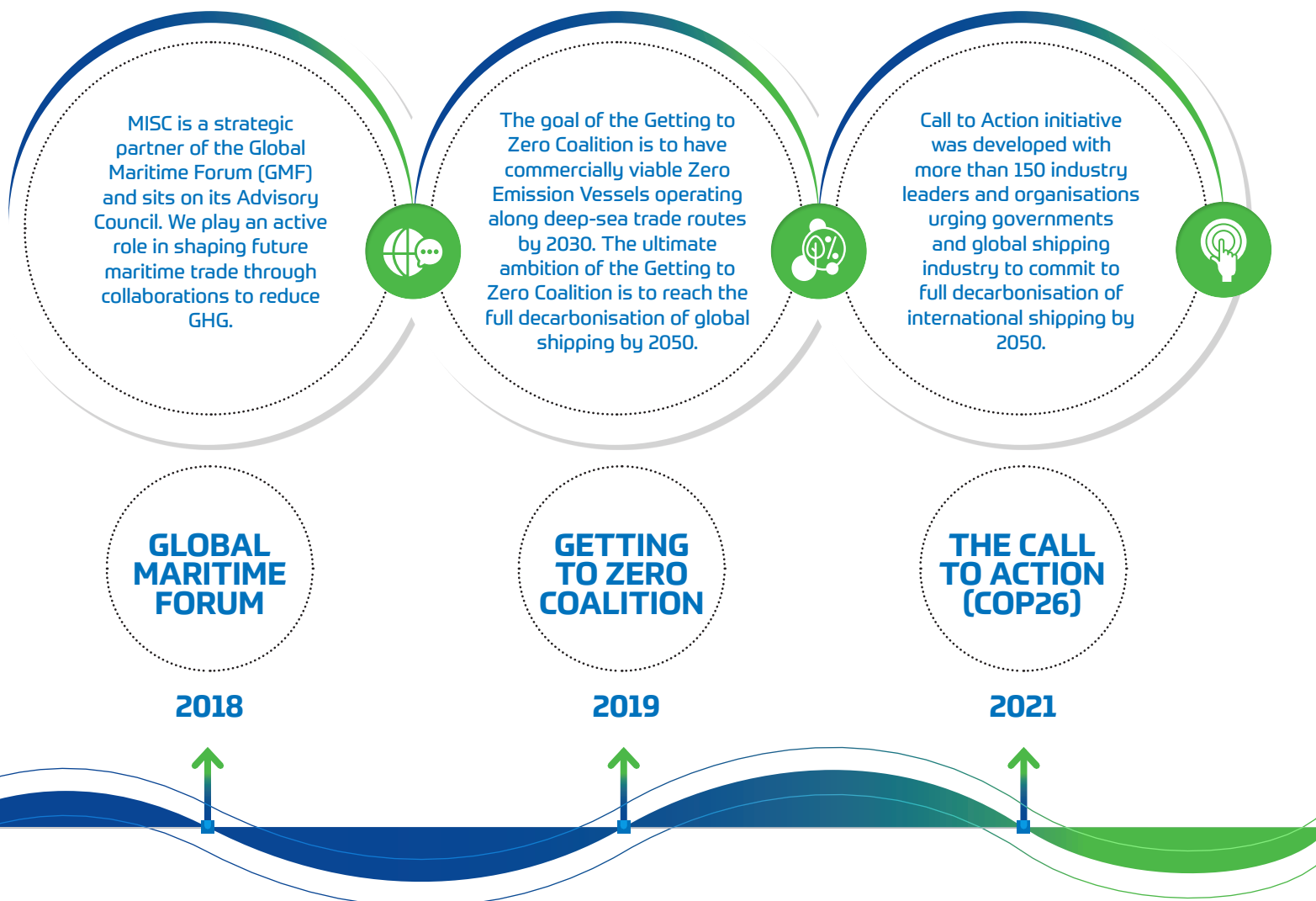
## MISC'S SUPPORT FOR CLIMATE ACTION

MISC is fully committed and supportive of the decarbonisation of not just the shipping industry but the larger global decarbonisation movement in efforts to combat climate change.

Shipping needs solutions to support both IMO and global decarbonisation goals. Although many new technologies are still on the test bench, with their emissions saving potential being as yet unproven in large-scale usage for international shipping, MISC's stance is to rise to the challenge. Alongside

our peers and together with our value chain partners in the shipping industry, we have been working on the ammonia-fuel pathways (the Castor Initiative) to prove the viability of Zero-carbon Emission Vessels (ZEV) capable of deep-sea, trans-ocean travel, as these ZEVs must be operating by 2030 to achieve the IMO's targets. New sea vessels for use in 2050 must be developed now, given a vessel's 20 – 25-year lifespan. Collaboration with partners within the value chain to conduct research and development are critical for meeting this ambitious target.

### MISC HAS BEEN ACTIVELY PROMOTING THE NEED TO DECARBONISE SHIPPING THROUGH THE FOLLOWING GLOBAL SUPPORT INITIATIVES



## MISC CLIMATE COMMITMENT

### Long-Term Commitment

Net-zero GHG emissions by 2050

### Medium-Term Climate Target

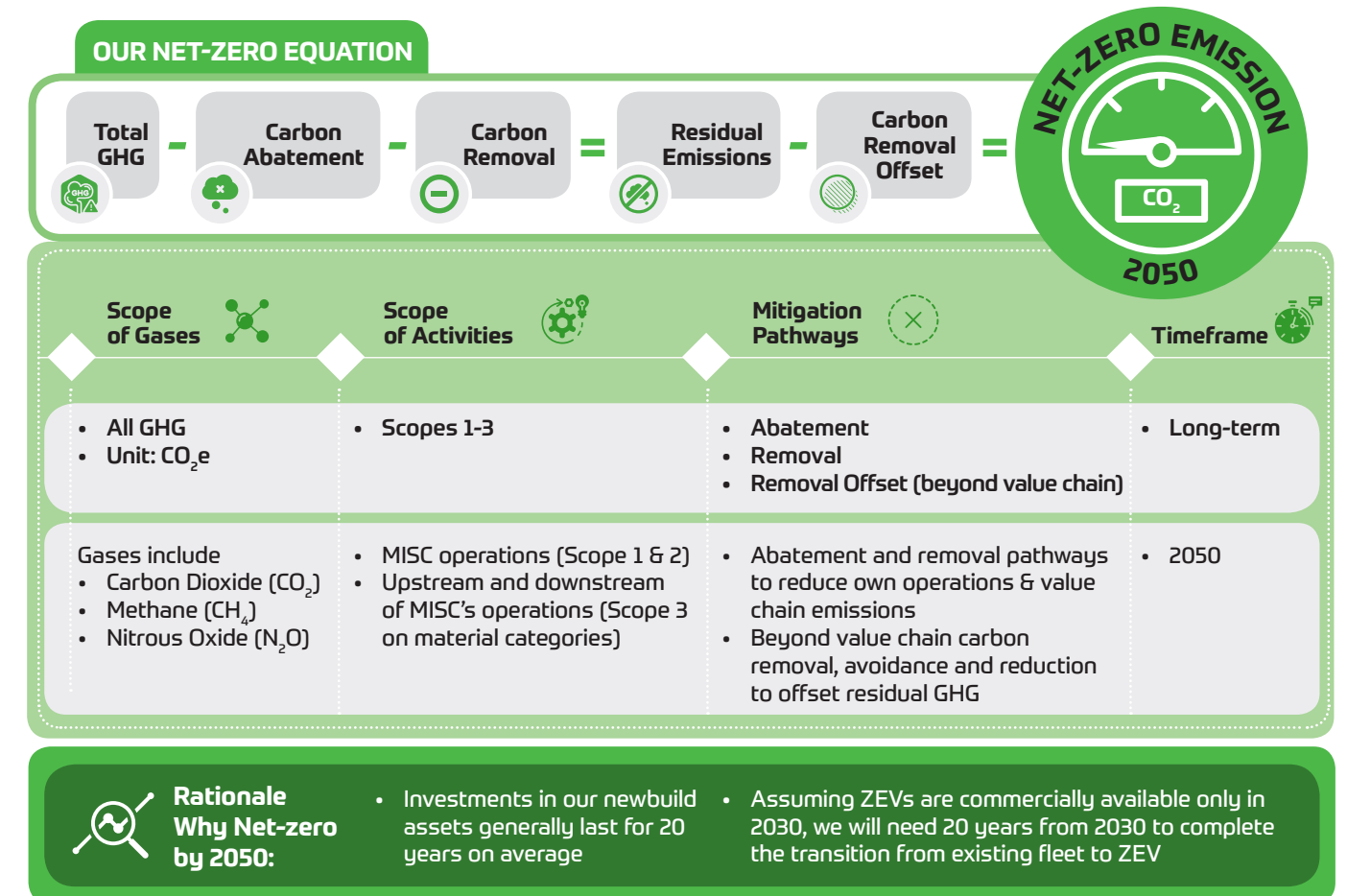
Reduce 50% GHG intensity from our shipping operations by 2030 (compared to the baseline year of 2008)

### WHAT WE MEAN BY NET-ZERO?

'Net-zero' refers to balancing the volume emissions produced and removed from the atmosphere to prevent global warming. At MISC, this means we will explore and implement commercially viable technologies to decarbonise

our operations until we reach a state where we are left with unabated residual emissions. Only the unabated residual emissions will be compensated with carbon removal offsets (ie. reduction outside our value chain).

### OUR NET-ZERO EQUATION



HOW OUR CLIMATE ACTION COMPARES WITH IMO 2030 AND 2050?

INITIAL IMO GHG ASPIRATION	MISC CLIMATE COMMITMENT	BEYOND IMO ASPIRATION ON:
<p><b>IMO 2030:</b> Reduce international shipping's CO<sub>2</sub> intensity by 40% compared with 2008</p> <p><b>IMO 2050:</b> Reduce total GHG emissions by 50% compared with 2008</p>	<p>Reduce shipping operation's GHG intensity by 50% compared with 2008</p> <p>Net-zero GHG Emissions by 2050</p>	<ol style="list-style-type: none"> <li>Higher ambition level of GHG intensity reduction</li> <li>Gases cover not just CO<sub>2</sub> but include all relevant GHGs (ie. methane, nitrous oxide, ethane)</li> <li>Abate total GHG as low as possible and use carbon removal offsets to neutralise residual emissions in 2050</li> <li>Applicable to all emissions from MISC Group shipping and non-shipping operations</li> <li>Emission scope extends beyond just Scopes 1 and 2 (direct emissions) to also Scope 3 (material indirect emissions within MISC's value chain)</li> </ol>

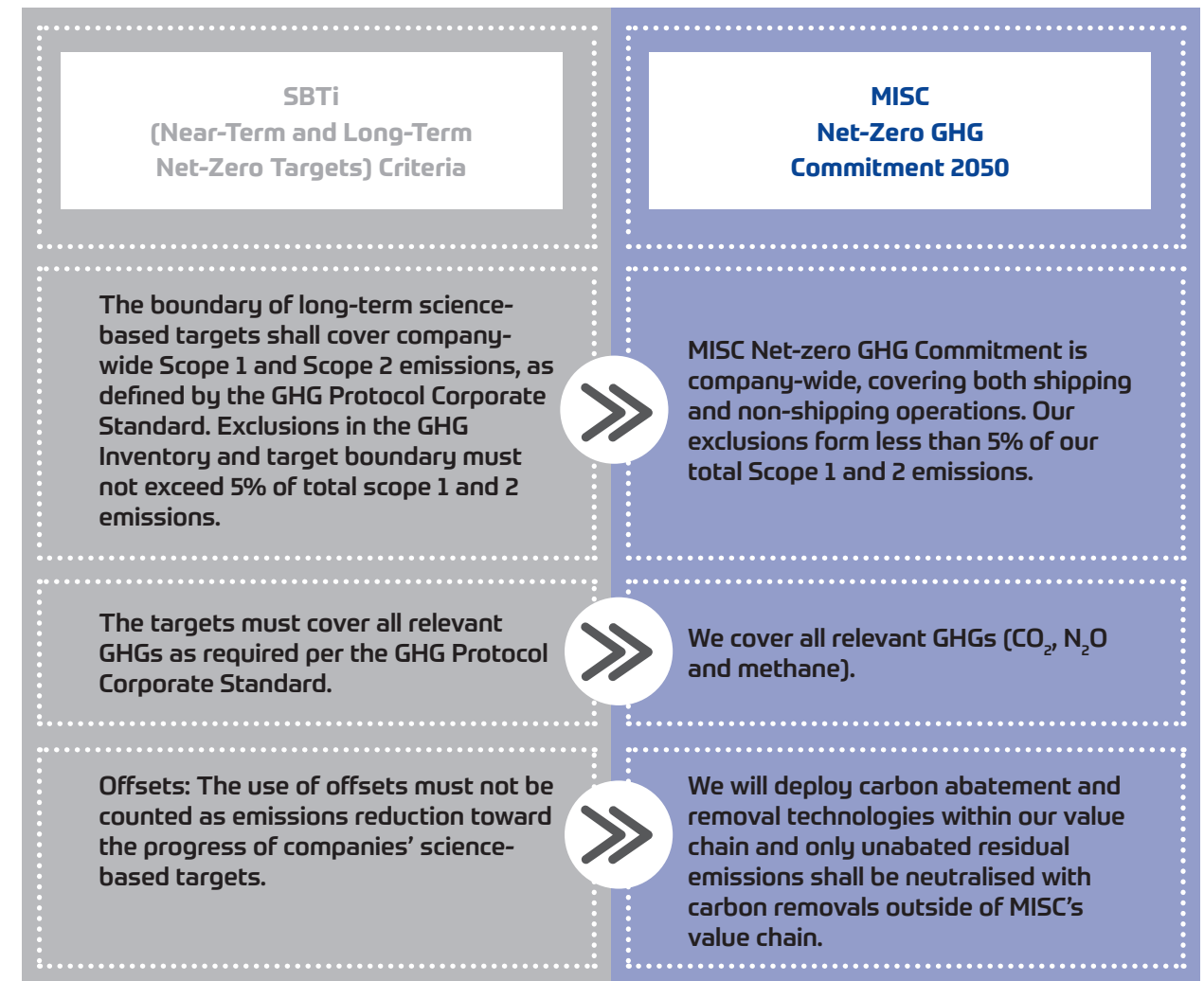
SCIENCE-BASED INITIATIVE (SBTi) NET-ZERO TARGETS REMAINS MISC'S CLIMATE ASPIRATION

At MISC, we understand the need to aim beyond IMO Targets and strive for the more ambitious Science Based Net-Zero Targets to be aligned with the Paris Agreement and the scale of reductions required to keep global warming below 2°C from pre-industrial levels.

In March 2022, the SBTi published the SBTi Fossil Fuel Policy which affects the extent to which companies engaging in fossil fuel businesses can commit to climate aligned targets. SBTi is unable to accept commitments or validate targets for companies in the oil and gas or fossil fuels sectors. This includes companies with any level of direct involvement in exploration, extraction, mining and/or production of oil, natural gas, coal or other fossil fuels, irrespective of percentage revenue generated by these activities, i.e. including, but not limited to, integrated oil and gas companies,

integrated gas companies, exploration and production pure players, refining and marketing pure players, oil products distributors, gas distributors and retailers and traditional oil and gas service companies. Based on Science Based Target Setting for The Maritime Transport Sector (issued in November 2022), companies wishing to submit targets covering activities related to transportation of fossil fuel products are advised to review the current status of the Fossil Fuel Policy as well as sector specific requirements stated in the latest version of the SBTi Criteria.

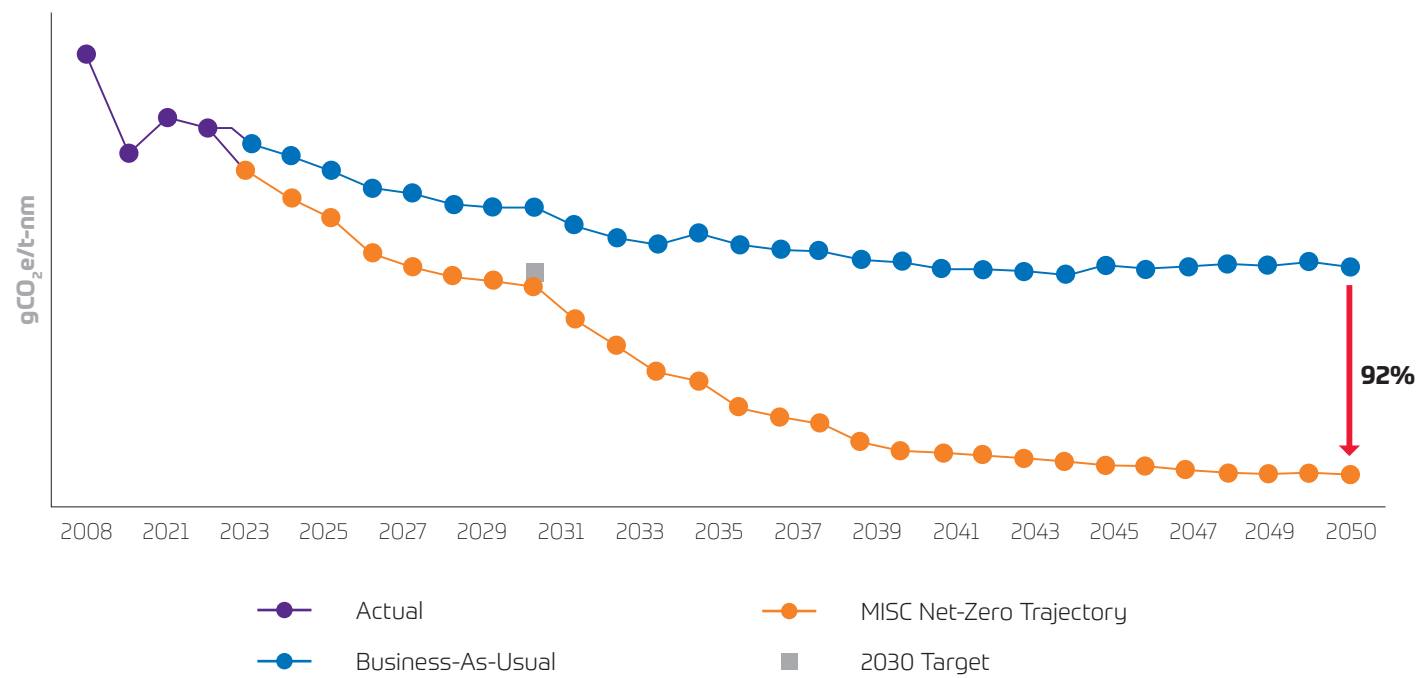
Despite the challenges for MISC to make commitments to SBTi, our Net-Zero GHG Commitment has adopted some key elements of the SBTi's Corporate Net-Zero Standard, October 2021.



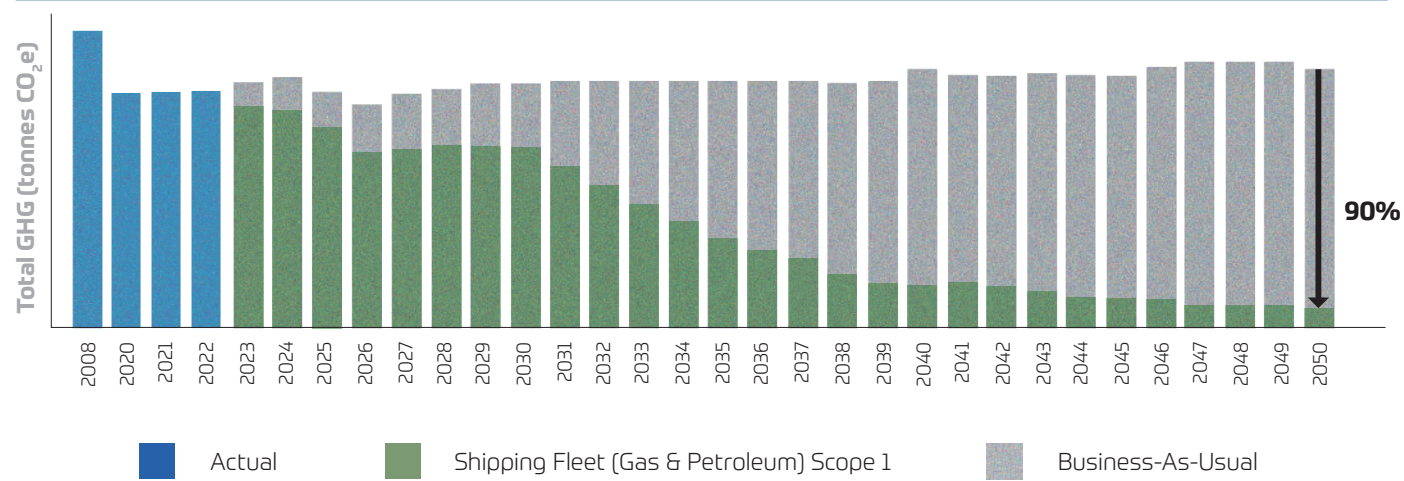
### MISC GROUP GHG PROJECTIONS AND EMISSIONS PATHWAY

Annually MISC undertakes forward-looking GHG emissions projections which enables us to monitor our GHG reduction strategy in meeting our medium-term GHG intensity target for 2030 and our long-term Net-Zero GHG commitment 2050. The projection exercise carried out for MISC's asset fleet considers future changes to our asset profile until 2050, prospective GHG abatement technologies, and regulator policies.

MISC Shipping Fleet (Gas & Petroleum) GHG Intensity Projection 2050

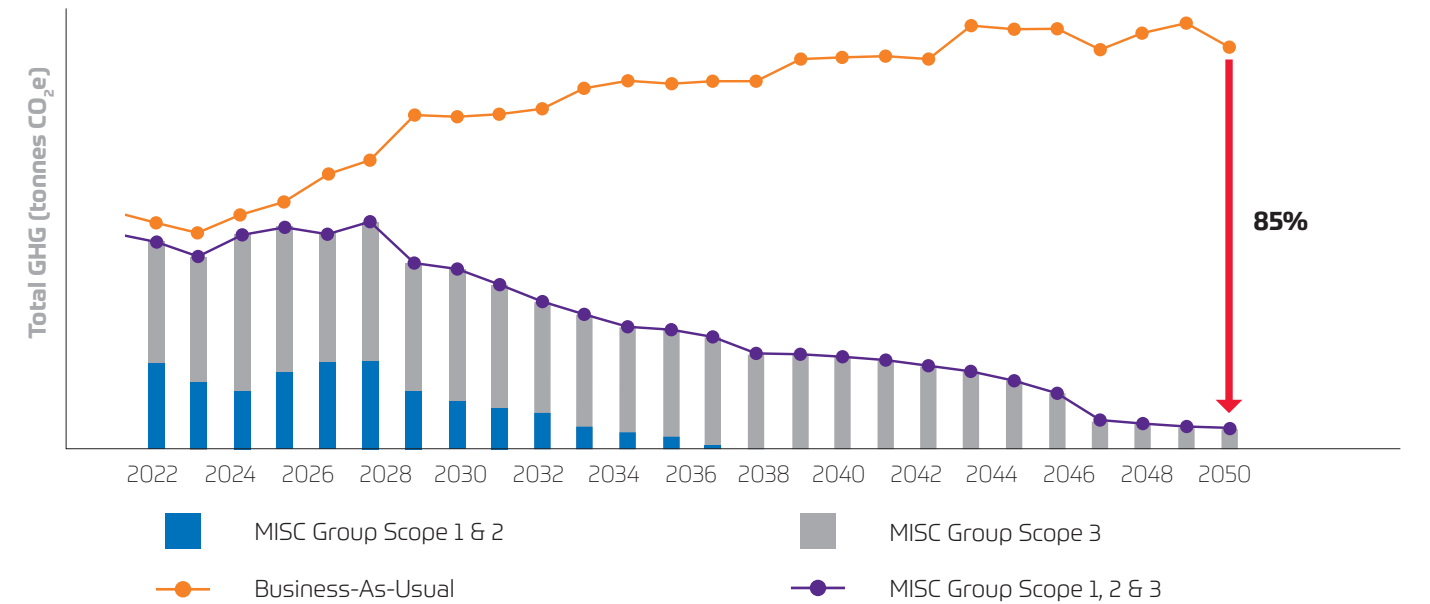


MISC Shipping Fleet (Gas & Petroleum) Scope 1 Total GHG Emissions Projection to 2050

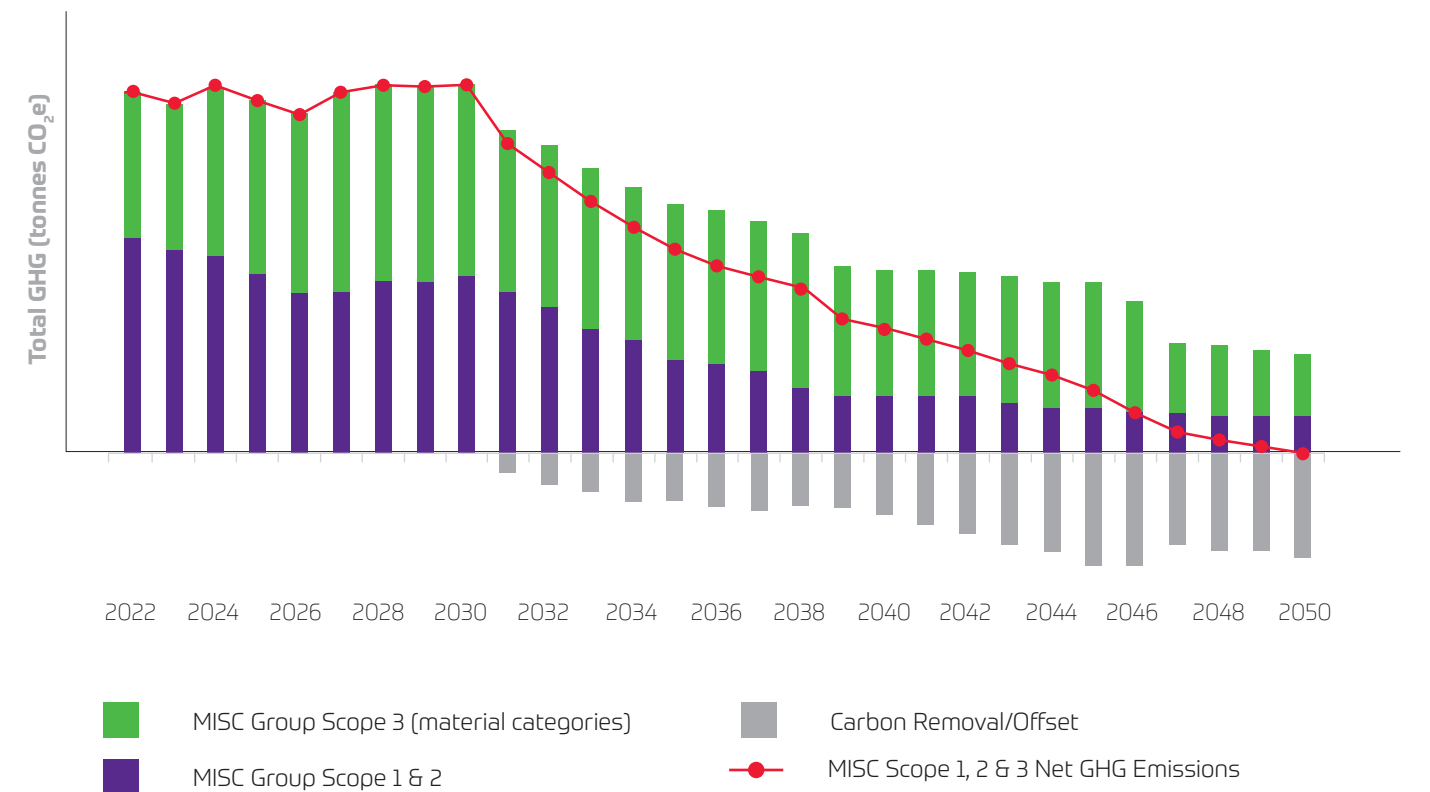


Note: MISC shipping fleet does not emit Scope 2 emissions.

MISC Group Total GHG Emissions Projection to 2050 (Scope 1, 2 & 3)

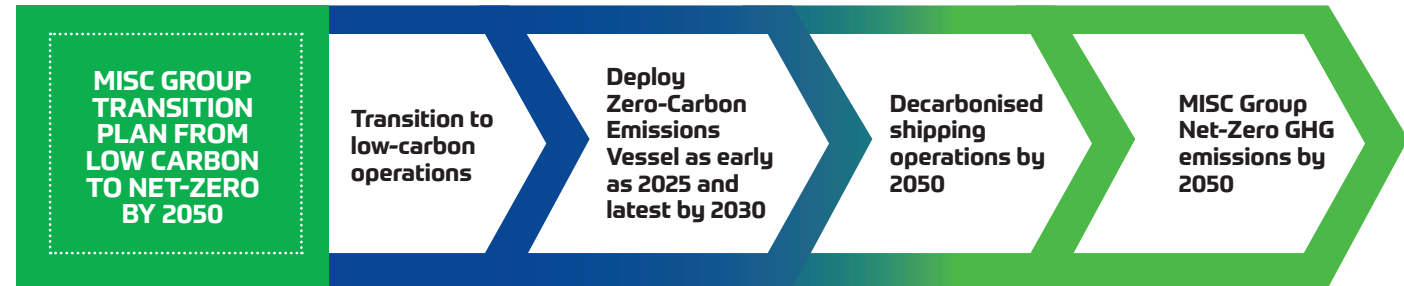


MISC Group Potential Carbon Removal/Offset (Tonnes CO2e)



OUR TRANSITION PLAN

Even though, net-zero is a long-term commitment but what is more important is our transition plan which is more near term. These are actions that we need to do now to ensure we are on a credible path.



PATHWAYS

		SHORT-MEDIUM-TERM PATHWAY CURRENT YEAR ..... 2030 .. 2031 .....	LONG-TERM PATHWAY ..... 2050
FLEET RENEWAL	<ul style="list-style-type: none"> <li>Progressive fleet renewal of our shipping fleet to high efficiency LNG dual-fuel engine vessels from now to 2030</li> </ul>	→	
	<ul style="list-style-type: none"> <li>The Castor Initiative: Deployment of initial ammonia-fuelled ZEV earliest by 2025</li> <li>Progressively renew the fleet with ZEV latest by 2030</li> </ul>	→ 2025 →	
TECHNICAL AND OPERATIONAL	<ul style="list-style-type: none"> <li>Continuous improvements to optimise the operational efficiencies of our vessels</li> </ul>	→	
CARBON REMOVAL	<ul style="list-style-type: none"> <li>Explore and adopt commercially viable technologies to upgrade our existing fleet with methane and carbon capture technologies to safely capture and store away excess carbon</li> </ul>	→	
LOW-ZERO CARBON OFFSHORE ASSETS	<ul style="list-style-type: none"> <li>Explore and adopt commercially viable energy efficient zero-flaring, GHG reduction and CCUS-ready technologies for offshore assets</li> </ul>	→	
RENEWABLE ENERGY	<ul style="list-style-type: none"> <li>Explore and adopt renewable energy for shipping and non-shiping assets</li> </ul>	→	
VALUE CHAIN REDUCTION	<ul style="list-style-type: none"> <li>Value Chain emissions (Scope 3) reductions</li> </ul>	→ 2028 →	
BEYOND VALUE CHAIN MITIGATION (CARBON REMOVAL, AVOIDANCE AND REDUCTION)	<ul style="list-style-type: none"> <li>Carbon avoidance, reduction and removal outside of MISC's value chain</li> </ul>	→ 2027 →	

ABATEMENT PATHWAYS

FLEET RENEWAL

Our shipping business segments (GAS and Petroleum) supports the IMO's aspirations to reduce emissions by rejuvenating our fleet through investing in greener ship. As part of our transition plan, we will progressively renew the fleet to high efficiency LNG dual-fuel engine vessels from now to 2030 and will deploy Zero-carbon Emission Vessels (ZEV) latest by 2030.

LNG is the lowest-carbon fuel currently available to shipping at scale, and beyond GHG, it emits negligible sulphur oxides or particulate matter, while significantly reducing NO<sub>x</sub> emissions as well. However, we are cognisant of the fact that methane emissions are a key challenge associated with LNG fuelled engines particularly from unburned methane during combustion or methane slip. For this reason, MISC will continue to harness the latest engine design and technologies that minimises methane leakages on our newbuild ships.

Our LNG dual-fuel VLCCs, which are under construction, are among the world's most environmentally-friendly vessels in the shipping industry. Three out of five LNG dual-fuel VLCCs which are on order will be fitted with advanced technologies, including an M-type, electronically-controlled, gas-injection (MEGI) engine, which will reduce methane emissions compared to low pressure engines. These vessels can achieve 99% reduction in sulphur oxide (SO<sub>x</sub>) emissions, 85% reduction in nitrogen oxide (NO<sub>x</sub>), 95% less particulate matter (PM) and up to 30% less CO<sub>2</sub> on gas mode by design when compared to marine gas oil. The vessels also feature a hybrid vertical bow that lowers hull resistance, improves fuel efficiency and reduces ship vibrations. The energy-saving devices fitted will further reduce GHG emissions from these vessels.

Our LNG dual-fuel DPSTs are also fitted with volatile organic compound (VOC) recovery systems. These captured VOCs are reused as a supplementary fuel which, in combination with a more efficient system for dynamic positioning and a range of power and automation solutions, saves roughly up to 4,000 tonnes of fuel per year per vessel compared with conventional DPSTs of the same size, delivering significant cost savings, alongside substantial emissions savings.

As we work on renewing our existing fleet to high efficiency LNG dual-fuel engine vessels from now to 2030, we are also working in parallel to introduce our ammonia-fuelled zero carbon emission vessel as part of the Castor Initiative as early as 2025.



THE CASTOR INITIATIVE

In 2020, we allied with three maritime industry players - Samsung Heavy Industries (SHI), Lloyd's Register (LR) and MAN Energy Solution - to form a Joint Development Project (JDP) to develop commercially viable deep-sea zero-emission vessels (ZEVs) by 2030. Our JDP to develop commercially viable deep-sea ZEVs by 2030 is aligned with:

- The IMO's 2050 GHG aspirations; and
- Getting to Zero Coalition's commitment.

In 2021, LR awarded Approval in Principle to SHI for its ammonia-fuelled tanker design as well as its fuel supply and fuel storage system and for commercialising these developments by 2024.

In early 2021, the JDP was rebranded to the Castor Initiative as Yara International ASA (Yara) and Maritime and Port Authority of Singapore (MPA) joined the coalition followed by Singapore's Jurong Port later in the year. Jurong Port's role is to facilitate the testing of the port infrastructure and processes required to handle future marine fuels, including ammonia. Recently, TotalEnergies, the global energy major has become the eighth partner to the global coalition that is committed to make zero emission shipping a reality. These additions complete the representation of all critical areas of the maritime industry ecosystem.

The Castor Initiative was motivated by partners' shared belief that the maritime industry needs leadership and greater collaboration if shipping is to meet the IMO's GHG ambitions. Ultimately, our shared agenda is exploring multiple decarbonisation pathways.

In 2022, LR, SHI and MISC via its subsidiary, AET, signed a Memorandum of Understanding (MOU) for the development and construction of two very large crude carriers (VLCC) which can be operated on zero-emission fuel. The three companies, all founding members of The Castor Initiative, are taking the lead to encourage the use of green ammonia as propulsion fuel, with the first of these dual-fuel tankers entering into service in late 2025 and the second in early 2026.



OUR DECARBONISATION PATHWAY

TECHNICAL AND OPERATIONAL MEASURES

**PROPELLER BOSS CAP FIN**  
Eliminates vortex from the centre of the streamflow, increases ship speeds and lowers fuel consumption  
• About 4% CO<sub>2</sub> reduction

**ADVANCED ANTI-FOULING PAINT**  
Coated with tributyltin-free (TBT-free) to minimise the release of harmful biocides into the marine environment  
• 6% CO<sub>2</sub> reduction

**2G PROPELLER BOSS CAP FIN**  
• About 3% CO<sub>2</sub> reduction

**ECOSHIELD RUDDER PAINT**  
• Cavitation damage protection up to 20 years

Our vessels are subject to rigorous monitoring on its energy efficiency performance via analytical tools that provide data insights on the efficiency of the voyage, engine, and vessel systems. The monitoring enables informed interventions to be made for energy efficiency improvements. We progressively improve on implementing advanced technologies, such as optimised newbuild designs, anti-fouling paints and energy-saving fittings on our fleet.

The energy efficiency of our fleet not only depends on how we operate and maintain our vessels, but voyage planning aspects have a major role to play in the GHG emissions reduction of our vessels. We have assessed that it would not be possible to achieve our GHG optimisation goals for the fleet without a voyage optimisation programme in place that include elements of speed optimisation and just-in-time arrival, particularly for our older vessels. For this reason, MISC is actively engaging with our charterers to identify opportunities for collaboration and to charter an action plan for implementation.

CARBON REMOVAL

We will continue to explore carbon removal technologies leading up till 2030 and adopting them at the latest from 2030. Our guiding principles on these technological options are based on sound risk principles, primarily to minimise risks to health, safety and environment and safeguarding public interest.

LOW TO ZERO CARBON OFFSHORE ASSETS

We offer low-carbon designs to customers for all new assets at our offshore operations. These operations will also explore powering selected energy-intensive equipment with renewable energy on offshore assets to reduce carbon emissions.

Carbon capture technology will be explored for application on our shipping operations and offshore assets.

RENEWABLE ENERGY

We will continue to explore the use of renewable energy for our yard and other building operations to shift our dependencies on conventional energy grid and increase the renewable energy mix for MISC Group.



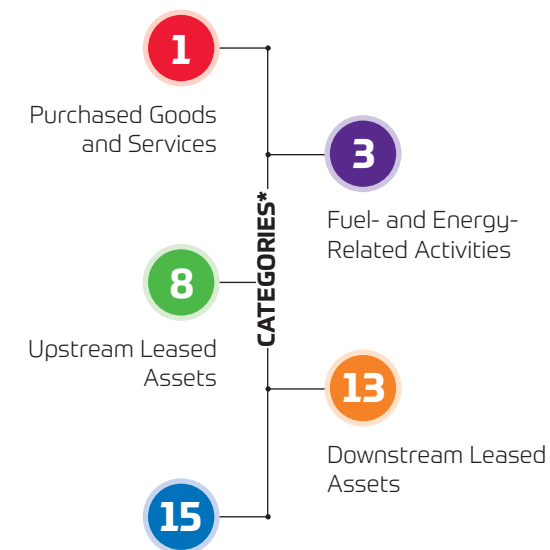
VALUE CHAIN REDUCTION

MISC Group's Net-Zero GHG Commitment includes Scope 3 emissions which includes emissions within our material value chain.

In 2022, MISC embarked on an exercise to evaluate material Scope 3 emissions in accordance with the GHG Protocol.

MISC Group's material Scope 3 is defined as top Scope 3 categories covering at least 67% of total Scope 3 emissions. This definition is aligned with SBTi's rule for setting near-term targets. Additionally, included in our material Scope 3 emissions are operational emissions from vessels and offshore assets owned or leased by MISC not accounted under our Scope 1 and 2 GHG emissions.

Based on our material Scope 3 definition, MISC Group's material Scope 3 categories are as follows:



Vessels which MISC has equity ownership not accounted in Scope 1 and 2

Note:  
\* In accordance with GHG Protocol Scope 3 categories

Refer to Environmental Pillar Performance in our Data Performance Section of this report for more information on our Scope 3 emissions.

In 2023, we intend to engage with our value chain partners to coordinate efforts to improve the measurement and reporting of our Scope 3 emissions. Improving the data quality of our Scope 3 emissions helps us to better understand our value chain risk areas and opportunities to mitigate these risks.

BEYOND VALUE CHAIN MITIGATION (CARBON REMOVAL, AVOIDANCE AND REDUCTION)

As part of our beyond value chain mitigation efforts, MISC has plans to partner and invest in nature-based rehabilitation and conservation projects to generate carbon credits that can offset our unabated residual emissions. Only high-quality nature-based sequestration projects will be used to offset our residual emissions.

Nature-based sequestration involves conserving, restoring, or rehabilitating natural ecosystems to remove carbon dioxide from the atmosphere.

In 2022, MISC carried out a baseline assessment on our plot of mangrove land located in Melaka with the aim of developing a long-term conservation action plan for the area, based on the outcome of the study. As the plot is small and may not be economically viable as a carbon removal project, the conservation work will be an avenue for MISC to gain experience on mangrove conservation which will be of value for future nature-based carbon removal investment.

# PROMOTING CIRCULAR ECONOMY

## PROMOTING CIRCULAR ECONOMY

### Our Commitment

- To promote the elimination of waste and the continual use of resources
- To increase the usage of renewable resources

### Our Initiatives

- Practise 4R – Refuse, Reduce, Reuse and Recycle (Waste-to-Value Concept)
- Practise Green Ship Recycling
- Greater Renewable Resource Utilisation

### Our Contribution to UNSDG



Ensure sustainable consumption by promoting circular economy (eliminating waste and the continual use of renewable resources) and sustainable procurement practices

A circular economy leverages the Waste-to-Value (WtV) concept, which processes waste into a valuable product. Many industries and policymakers are exploring the switch from a linear to a circular economy. It is an economy based on the principles of eliminating waste and pollution, keeping products and materials in use, and regenerating natural systems. As a result, the economy is restorative and regenerative by design.

A circular economy keeps products, materials, equipment, and infrastructure in use for a longer period of time. The shipping industry is unique in many ways as most ships are made to order based on specifications of the necessary activities to deliver a cargo product and in the case of time-chartered vessels, these specifications are based on specific customer needs. The fact that the ships are made to last an average of 20 years makes the industry less flexible and yet need to adapt by retrofitting in response to future regulations.

Collaborations with suppliers across value chains are necessary as recovered materials are distributed as input raw materials for other products.

At MISC, we believe in the promotion of the circular economy from the following perspective:

HOW MISC SUPPORTS THE CIRCULAR ECONOMY		<b>Ship Recycling</b> We are committed to the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships 2009 (the Hong Kong Convention)
		<b>Repurposing of Assets</b> We repurpose our tankers into floating assets (FPSOs) to extend the lifespan of our vessels where possible
		<b>Renewable Energy</b> We continue to explore ways to introduce more renewable energy into our energy mix
		<b>4R (Refuse, Reduce, Reuse and Recycle) on Our Waste</b> We are committed to eliminating waste by continually using resources and practising 4R throughout our operations
		<b>Sustainable Procurement</b> We continuously drive sustainable practices with our suppliers through our Responsible Supply Chain strategic initiative

## SHIP RECYCLING

Ship recycling activity plays an important role in the lifecycle of a ship. All ships eventually reach a point where maintaining them is neither feasible nor cost-effective. Most vessels are recycled or repurposed when their useful lives, which usually average between 20 and 25 years are over.

Although it is yet to enter into force, the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships 2009 (the Hong Kong Convention) sets achievable, sustainable goals for ship recycling standards and is already making headway towards changing the industry.

Ship recycling supplies a large quantity of scrap metal to the steel and iron industries and reduces the need to produce virgin metals to meet demand, thus diminishing the need for metal mining. Ships contain high quality iron which is recyclable to around 90%. Therefore, using scrap metal to

produce finished products, rather than using metal ore, also helps to reduce GHG emissions. It has been documented that energy consumption goes down by 70% in steel making when scrap steel is used rather than iron ore.

The recycling of steel scrap obtained from end-of-life ships also helps reduce air and water pollution. At the same time, it helps reduce water consumption. These reductions are due to fact that fewer resources are required to manufacture products from metal scrap as compared to metal ore. Scientifically published estimates suggest 86% less air pollution, 76% less water pollution, 40% reduction in water usage while making steel from scrap than from iron-ore.

This is an important contribution the ship recycling industry makes towards sustainability because the world needs to find ways to decarbonise in the wake of the threat of global climate change.

### MISC GROUP SHIP RECYCLING POLICY

The MISC Group Ship Recycling Policy, issued as of 1 September 2021, is our Group-wide commitment to recycling our ships responsibly.



Please download a copy of the MISC Group Ship Recycling Policy

The scope of the MISC Group Ship Recycling Policy covers the following four areas:

<b>Design and construction stage</b>  <ul style="list-style-type: none"> <li>• Constructing each ship with zero or minimal hazardous materials</li> <li>• Documenting each vessel with an approved Inventory of Hazardous Materials (IHM)</li> </ul>	<b>Ship operations</b>  <ul style="list-style-type: none"> <li>• Generating minimal hazardous substances and waste onboard each ship</li> <li>• Removing hazardous substances in a controlled manner and replacing them with non-hazardous material if practical whenever repairs or maintenance are carried out on equipment</li> <li>• Producing and maintaining a ship specific IHM for each existing ship in our fleet</li> </ul>	<b>Repurpose or resold for further trading</b>  <ul style="list-style-type: none"> <li>• Updating the ship's IHM and passing it with other documentation before the sale of the ships</li> <li>• Complying with IMO Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 and/or all applicable national and international law selling ships directly or indirectly to a yard for recycling</li> </ul>	<b>Sold to intermediary or directly to HKC approved yards for scrap</b>  <ul style="list-style-type: none"> <li>• Requiring buyers or yard for all MISC sale contracts to undertake safe and environmentally sound recycling as per the IMO Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 including using approved shipyards and monitoring rights to the ship-breaking process whether directly or indirectly via appointed agents</li> </ul>
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**MISC GROUP SHIP RECYCLING YARD ASSURANCE PROGRAMME**

In 2022, we initiated a Ship Recycling Yard Assurance Programme to pre-approve the yards used by MISC for the safe and responsible ship recycling. The following focus areas were assessed:

- Anti-Corruption**
- Supplier & Contract Management**
- Shipyards Management System**
- Human Rights & Labour Risks**
- Worker Welfare Risks**
- Health & Safety Risks**
- Environment Risks**
- Local Community Risks**

**MISC GROUP SHIP RECYCLING GUIDELINES**

The MISC Group Ship Recycling Guidelines was developed in 2022 and incorporates a sustainable social and ecological responsibility to ensure safe and responsible ship recycling globally. To the benefit of workers, the environment, and responsible yards and ship owners, the following are some of our guiding principles to be adhered to when performing ship recycling:



**RENEWABLE ENERGY**

As of 2022, MHB hosts the largest Malaysia's rooftop solar panels installed in a single compound which can generate up to 10,000 MWh clean energy. In 2023, additional solar panels will be added to MHB's Centre of Excellence, which is located at MHB's East Yard as part of our commitment to transition into low carbon operations.

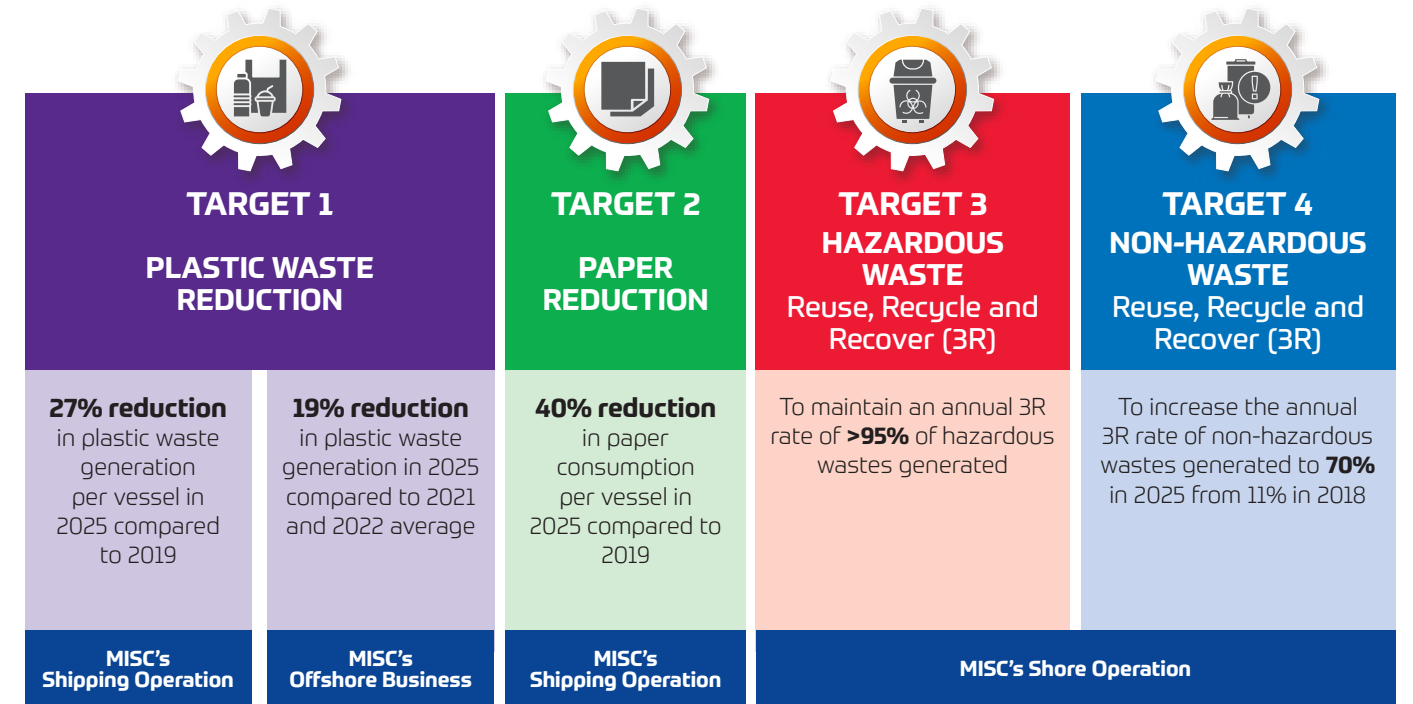
Our shipping and non-shipping operations continue to explore various means to include renewable energy into our operations.



**OUR 4R (REFUSE, REDUCE, REUSE AND RECYCLE/RECOVER) PRACTICE**

We are committed to implementing our 4R waste management initiatives and have introduced various programmes that support this commitment.

We have set 4R (Refuse, Reduce, Reuse and Recycle/Recover) targets on hazardous and non-hazardous wastes to be achieved in 2025 as illustrated below:



**REFUSE**

**Eliminating Non-Essential Single-Use Plastics**

A directive has been issued to sea operations in January 2020 and shore operations since 2018 to reduce single-use plastic from being used on board our vessels and discontinue to issue drinking plastic bottle during our company events. We favour reusable non-plastic alternatives or biodegradable options where possible.

For our sea operations, each ship has an inventory of single-use plastic used onboard with an execution plan to reduce single-use plastic to the level of quantified targets. Some of the actions taken to refuse single-use plastic are:

- Use of water filter to replace of disposable drinking bottles;
- Employees are encouraged to use reusable bags and cutleries; and
- Suppliers are encouraged to use reusable packaging materials and provide bulk packaging.

A plastic waste survey was carried out in 2022 on our shipping operations to gain a better overview of plastic waste generation onboard. From the survey, packaging wastes from provisions and spares were among the main contributors of our onboard plastic waste generation. In 2023, we intend to expand the coverage of our existing programme to cover waste reduction in the supply chain.



**REDUCE**

**Reducing Paper Consumption**

To reduce paper consumption, we have intensified our effort to transition away from paper-based work processes to digitalised system, where hardcopies of work permits, records and other documentations will eventually be eliminated and replaced with digital formats. Transitioning to a digitalised system not only provides environmental benefits but also provides efficiency through enhanced digital documentations management.

For our shipping operations, we have commenced the use of digital permit to work (PTW) system through an application called SOL-X. As of December 2022, we have installed the application on 50% of our vessels. In addition to reducing paper consumption, we have also improved the efficiency of our permit to work tracking and closure with this new initiative.

We continued to adopt digital signature programme for internal documents to reduce paper consumption since 2019. Partnering with DocuSign allows employees to obtain and deliver digital signatures without printing, reducing our paper consumption.

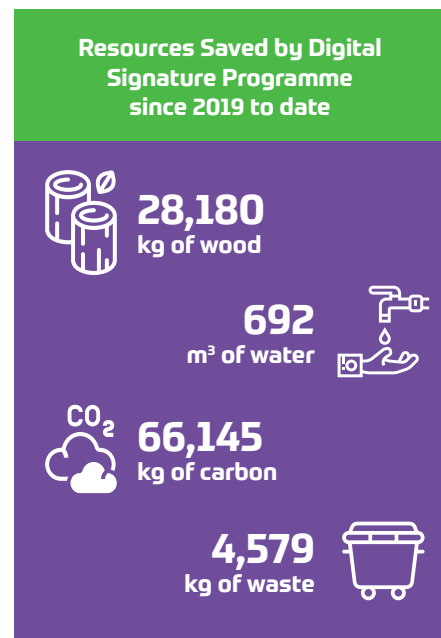
When printing hardcopies of documents is required, the printers are set by default to print double-sided to reduce paper consumption.

**Reducing Food Waste Generation**

Food waste is among our top three waste generated. To reduce food wastage, our training academy and two LNG storage facilities have implemented food waste reduction initiatives through meal planning. Meals are prepared taking into closer consideration of the number of people and also people's dietary preferences.

**Forest Stewardship Council® (FSC) Paper**

At MISC, across the Group, we switched to the purchase and consumption of paper certified by the Forest Stewardship Council® (FSC). All new paper purchases across the Group must be FSC certified. By making this switch, we ensure that the paper we consume are sourced from responsible forestry practices.



**REUSE**

**Reducing Hazardous Waste Using Alternative to Blasting Materials**

At our Heavy Engineering yard, we use eco-friendly abrasive made of recycled crushed glass named Dura-grit as one of our blasting materials. We have received an approval from DOE to reclassify the spent Dura-grit from hazardous waste to non-hazardous waste through Special Management of Scheduled Waste procedure. With this, the spent Dura-grit can be reused as an alternative to sand for road construction and recycled and used as raw material in the production of cement.

**Repurposing Our Vessels**

We introduced an initiative to repurpose our end-of-life crude oil tankers into offshore floating solutions. Repurposing vessels are also typically based on large mature vessels, often more than 20 years old, allowing a degree of recycling to take place. Our approach follows the circular economy business model and supports our broader sustainability goals. This model extends the lifetimes of products and components, recovers resources and streamlines the efficiency of materials. Giving vessels a second lease of life allows our Offshore Business to deliver more function from less consumption while avoiding the environmental impacts from decommissioning the vessel.



**RECYCLE**

**Recycling of Hazardous Waste**

In 2022, we generated 11,386 tonnes of spent copper slag from blasting activities at our marine and heavy engineering operations. Though a drop in the generation by 9% compared to 2021, the volume is still significant and we will continue to explore measures to further reduce our generation and to prioritise the recovery and recycling of the wastes from our operations. In 2022, almost 100% of the spent blasting waste are sent to recycling facilities. We collaborate with cement facilities where the wastes are recycled and used as raw material in the production of cement. Additionally, the use of durable abrasive in replacement of copper slag on certain operations allowed for repeated use of the material, consequently resulting in less waste generated from the blasting operations.

Other types of hazardous waste that are recycled are contaminated containers, contaminated rags/ filter, oil sludge, tanker sludge and waste of paint.

**Recycling of Non-Hazardous Waste**

Onboard our ships, recyclables are well segregated to enable onward reuse and recycling when they are sent to shore reception facilities. For our shore operations, lack of waste segregation at source, especially at our yard operation in MHB has been our main challenge to improve the recycling rate of non-hazardous wastes such as plastics and wooden pallets. Awareness programmes and campaigns were carried out both with our employees and contractors and we are looking at additional means to further improve our culture of waste reduction and segregation. Site inspections, enforcement and incentives are among our ongoing focus areas for improvement.

As part of our waste initiative in 2022, additional waste streams generated onboard our FSU operations in Sg Udang Melaka and AET's offshore operations in Galveston were identified for recycling. Wooden pallets were among additional items identified and segregated for recycling by AET, while paper items, glass bottles, cans and tetra pak packaging were recyclables segregated, collected and sent for recycling from our FSUs.

**Composting Project**

Our ALAM campus has an ongoing pilot composting project which turns food waste into organic fertiliser. We applied trench composting method where the food waste is layered with yard trimmings and soil into a pit. The finished compost is used to fertilise our ALAM onsite mini organic farming. Through this project, we raised awareness of the importance of reducing food waste and the basic cost of materials.

# CONSERVING MARINE BIODIVERSITY

## BIODIVERSITY CONSERVATION

### Our Commitment

To conserve and rehabilitate marine biodiversity through implementing the Group's Heart of The Ocean programme.

### Our Initiatives

Three signature marine biodiversity conservation initiatives were introduced under the Heart of the Ocean Programme:

- Mersing Island Reef Conservation Initiative
- UMT-MMS Sea Turtle Conservation Initiative
- MISC Mangrove Conservation Initiative

### Our Contribution to UNSDG



Sustainably manage and protect marine ecosystems by strengthening their resilience, and take action for their restoration in order to maintain sustainable ocean health



## BIODIVERSITY IMPACT FROM MISC OPERATIONS

Over the past number of years, the use of the seas, oceans and coastal areas has accelerated into what is now known as "Blue Economy", an economic term linked to exploitation and conservation of the maritime environment.

As a world leading provider of international energy related maritime solutions and services, MISC Group's principal businesses heavily interact with the ocean and its biodiversity. We recognise that our operations could potentially have adverse impacts on marine habitats, if controls are not in place.

We are committed in minimising our impact on ocean biodiversity with the following initiatives:

- 1** We use low-sulphur fuel and LNG clean fuel in our newer fleets in efforts to reduce air emissions from our vessels.
- 2** In our efforts to reduce GHG emissions, we have been progressively transforming our fleet to cleaner fuels (LNG dual fuel vessels) and aiming for zero-carbon emission vessels as early as 2025.
- 3** All MISC vessels are in compliance with IMO International Convention for the Safety of Life at Sea (SOLAS) 2012 that require vessels to be constructed to reduce on-board noise and protect personnel from noise according to the Code on noise levels on board ships.
- 4** All MISC vessel discharges are with controls in accordance with MARPOL regulations and discharges tracked and recorded. Furthermore, for discharges from our engine room operations, a bilge water management programme is implemented to reduce oil contamination from leakages and subsequently reduce water/oil accumulation in the engine room.
- 5** All MISC vessels are in compliance with IMO's ballast water discharge standards to prevent marine alien species invasion into coastal areas through Implementing the Ballast Water Treatment System.
- 6** A structured process is implemented to review the environmental performance of each vessel. Status of implementation of environmental management plans (e.g. garbage, sewage, bilges and cargo residues) are reviewed, any issues raised from internal audits are discussed and tracked to ensure effective closure.

## MISC GROUP HEART OF THE OCEAN PROGRAMME



We are committed to making a positive impact on ocean biodiversity through our Group's Heart of the Ocean (HOTO) marine biodiversity conservation programme. The initiatives carried out under the HOTO Programme is aimed at improving ocean health by conserving marine biodiversity and reducing the impact of human activities on the ocean.

the ocean and the preservation of marine diversity as outlined in UNSDG 14 - Life Below Water.

Three signature marine biodiversity conservation initiatives have been introduced under the HOTO Programme:

- 1** Mersing Island Reef Conservation Initiative
- 2** UMT-MMS Sea Turtle Conservation Initiative
- 3** MISC Mangrove Conservation Initiative

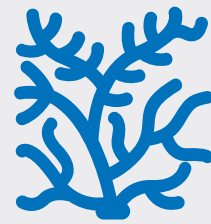
Our HOTO Programme was initiated in 2020 under the Biodiversity Conservation strategic initiative. The programme is in line with our commitment to ensure the sustainable use of

CONSERVING MARINE BIODIVERSITY

WHY CORAL REEF CONSERVATION?

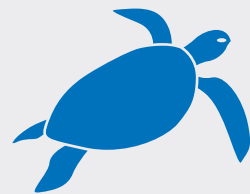
Climate change is one of the global threat affecting coral reef ecosystems primarily due to greenhouse gases from human activities. As temperatures rise, mass coral bleaching events and infectious disease outbreaks are becoming more frequent. Additionally, increasing levels of CO<sub>2</sub> concentration in the atmosphere causes more carbon dioxide to be absorbed into the ocean, causing a reduction in calcification rates in reef-building and reef-associated organisms due to acidification of seawater or known as ocean acidification.

The Mersing Islands Initiative on Reef Conservation is MISC's inaugural conservation initiative under the Group's Heart of the Ocean Programme. A 5-year collaboration with our partner Reef Check Malaysia (RCM), the initiative is concentrated on two focus areas i.e., sustainable reef management and marine debris management.



WHY SEA TURTLE CONSERVATION?

Worldwide, six of seven sea turtle species are classified as threatened or endangered due to human actions and lifestyles. Sea turtles are vulnerable to ocean pollution at all stages of life, from eggs to hatchlings, juveniles and adults. Oil spills can potentially wash up on beaches where it degrades nesting habitat and can impact nests, nesting females and hatchlings making their way to the water.



Discarded plastic bags and plastic straws can be dangerous to sea turtles because they are often mistaken for food causing sea turtle to choke or die of starvation because they feel full and do not eat, when they are actually full of plastic.

Understanding the need to raise awareness on plastic waste and conserve sea turtles, we launched our second initiative, the UMT-MMS Sea Turtle Conservation Initiative, in 2020.

WHY MANGROVE CONSERVATION?

Mangrove forests play a crucial role in the coastal ecosystem. They are a valuable carbon sink, their carbon rich soil can reduce atmospheric carbon dioxide. They also form barriers to protect the coast from erosion, are an important breeding ground for marine life, and can improve water quality by filtering out pollutants. These forests are under threat from over development and being choked with rubbish washed up from the rivers and sea.

Inter-related and spatially variable climate change factors including rising sea levels, increased storminess, altered precipitation regime and increasing temperature

are impacting mangroves. As mangroves are powerful carbon sinks, it is critical to conserve and rehabilitate mangroves. Mangroves store more carbon per acre than any other forest variety as a result of carbon being locked away in the soil underneath their roots as blue carbon.

In 2022, we expanded our HOTO Programme by embarking on a mangrove conservation initiative on a plot of land belonging to ALAM to complement our marine biodiversity conservation efforts.



MERSING ISLAND INITIATIVE ON REEF CONSERVATION

The HOTO initiative at Mersing Islands, Johor is a five-year collaboration with RCM aimed at improving ocean health by supporting coral reef conservation, increasing reef resilience, and reducing plastic litter in the ocean. Our work on Mersing Islands involves a multi-level collaboration with various stakeholders including local villagers, tourism operators, academics, local government, Department of Fisheries, local businesses, and the Ministry of Tourism. MISC has committed to sponsor this programme by contributing RM250,000 annually over five years (2020 – 2025).

Key activities implemented under this initiative include:

- Reef surveys;
- Reef rehabilitation;
- Reef clean-up;
- Reef monitoring and maintenance;
- Reef mapping;
- Green fins engagement;
- Stakeholder training in participatory management;
- Entrepreneurship training;
- Eco-snorkel guide training;
- Beach clean-ups; and
- School and community awareness programmes.



Focus Area	Core Elements	Objectives
<p>Coral Reef Conservation &amp; Management</p>	Coral Monitoring & Resilience	Supporting sustainable reef management of Mersing Islands
	Marine Protected Area (MPA) & Sustainable Tourism Management	Supporting the operationalisation of a body to manage Mersing as a sustainable destination, including Mersing Islands' marine resources
	Stakeholders Capacity Building & Awareness	Raising awareness of marine resource management and building capacity for the local community on practices that promote sustainable economic development

OUR 2022 PROGRESS

Coral Monitoring & Resilience	MPA & Sustainable Tourism Management	Stakeholders Capacity Building & Awareness
<p>Reef sites surveyed <b>32</b> sites surveyed + reef health data report</p> <p>Reef mapping of Pulau Besar <b>1</b> map + <b>1</b> report</p> <p>Diving best practices <b>6</b> engagements</p> <p>Mooring buoys installation <b>4</b> buoys</p> <p>Reef rehabilitation site <b>1</b> new rehab site + <b>3</b> sites monitored</p> <p>Reef clean-ups <b>7</b> sites [<b>124</b> kg marine debris removed]</p> <p>Coral bleaching &amp; predator monitoring <b>32</b> sites monitored + <b>1</b> report</p> <p>Water quality monitoring <b>10</b> sites monitored</p> <p>Sewage treatment <b>5</b> engagements</p>	<p>Stakeholder meetings <b>3</b></p> <p>Community consultation <b>12</b></p> <p>MPA Management Plan Draft plan revised + consultation with stakeholders</p> <p>MEAT Score <b>22</b></p> <p>Destination Management Organisation (DMO) ToR established + 8 member recruited</p> <p>Sustainable Tourism Management Plan (STMP) <b>1</b> consultation</p> <p>Sustainable tourism workshop <b>1</b> workshop</p>	<p>School &amp; community Awareness programme <b>9</b> programmes</p> <p>Beach clean-ups <b>14</b> [<b>3,775</b> kg trash collected]</p> <p>Stakeholder training in participatory management <b>58</b> participants trained</p> <p>Eco-friendly snorkel guide training <b>40</b> participants trained</p> <p>Entrepreneur training <b>1</b> training</p>

Focus Area	Core Elements	Objectives
<p>Marine Debris/Plastic Waste Management</p>	Plastic Recycling Action Plan	Developing a plastic waste management strategy
	Waste Facilities & Services	Supporting an effective plastic waste management system for all islands in the cluster

OUR 2022 PROGRESS

Waste Facilities & Services (Plastic waste management strategy)	Recycling centre
<p>Liaison with stakeholders on recycling <b>3</b> engagements + <b>2</b> meetings + <b>15</b> awareness materials</p>	<p><b>1</b> centre + <b>3</b> sets of recycling bins</p>

**EMPLOYEE PARTICIPATION PROGRAMME**

The HOTO Programme incorporates participation and/or volunteerism from MISC Group employees to improve our people's environmental awareness, employee relations and engagement through participation in conservation activities.

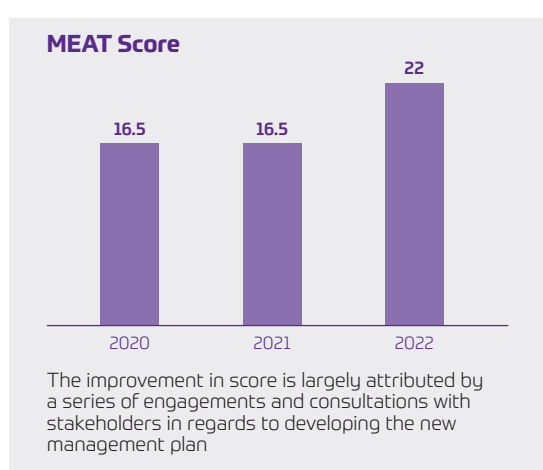
In 2022, a total of 77 of our employees participated in three separate Employee Participation Programmes (EPP) held at Pulau Sibul and Pulau Besar, Mersing, Johor. Besides nurturing the personal growth of our employees, the EPPs create opportunities for our employees to interact with local communities, sharing of knowledge, and promotes better social awareness.

EPP Activities		EPP Outcome	
Location	Activity		
Pulau Sibul, Johor	<ul style="list-style-type: none"> <li>Reef Monitoring</li> <li>Beach clean-up</li> <li>Community host assessment</li> <li>Safety Talk</li> </ul>	<b>Reef health (bleaching) monitoring</b> <b>2</b> sites	
		<b>Beach clean-up</b> <b>700 m</b> total distance <b>464 kg</b> trash collected <b>2,825</b> plastic bottles collected	
		<b>Safety talk</b> <b>22</b> participants (local stakeholders)	
Pulau Besar, Johor	<ul style="list-style-type: none"> <li>Reef mapping (Manta-tow survey)</li> </ul>	<b>Community host assessment</b> <b>6</b> island families engaged	
		<b>Reef mapping</b> Pulau Besar mapped	

**MARINE PROTECTED AREA (MPA) MANAGEMENT EFFECTIVENESS ASSESSMENT TOOL (MEAT)**

The MEAT tool is designed to assess the level of effectiveness of MPA (Marine Protected Area) governance practices. MEAT provides us with feedback and assists us in understanding the effectiveness of the MPA Management Plan for Mersing Islands. This assessment measures the effectiveness of the marine park's management on elements such as governance policies, management structure, regulations, enforcement, performance monitoring and assessment of ecological and social-economic impact.

Since 2020 we have been conducting MEAT assessment on the Mersing Islands' marine park to measure effectiveness of activities implemented through MISC's sponsorship. The assessment assists our efforts through understanding gaps that require interventions. In 2022, there is an overall progress in the Mersing marine park's management as can be seen from an increase in the MEAT scores. Increased and targeted stakeholders engagement via the HOTO programme has contributed to this success.



**UMT – MMS SEA TURTLE CONSERVATION INITIATIVE**

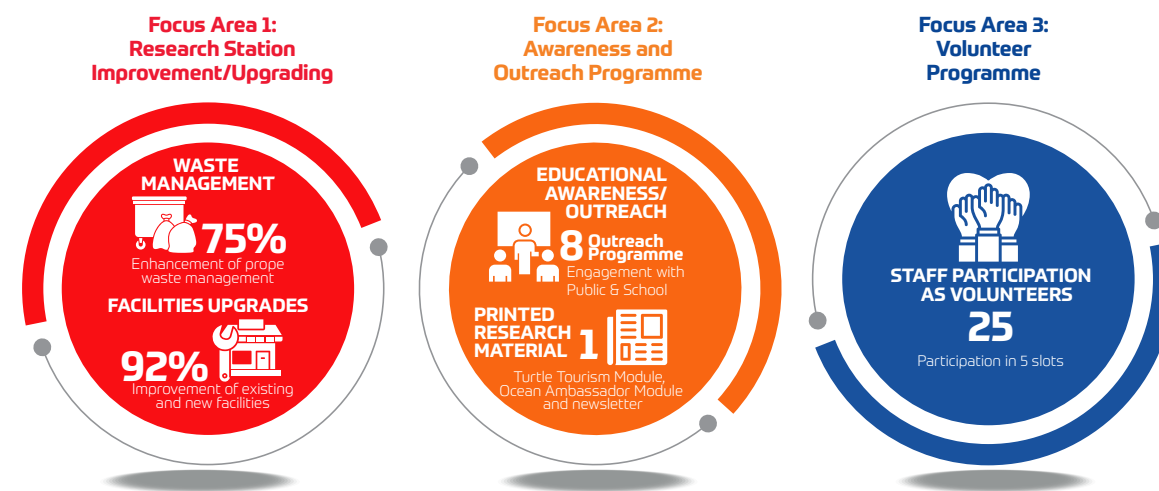
Despite having survived and thrived in the waters for 150 million years, sea turtles are now at risk of extinction mostly because of alterations caused by humans. MMS, a key player in the marine industry, has taken significant action by partnering with UMT – SEATRU (Universiti Malaysia Terengganu – Sea Turtle Research Unit) and endeavouring to conserve this critically endangered species through three main pillars:

- Improve facilities management of the research station;
- Enhance participation and involvement in the outreach programme; and
- Increase active employees' participation in the volunteering programme.

2022 has marked MMS' halfway point in our journey on the programme since its inception in 2020. As at end 2022, MMS has sponsored a total of RM200,000.00 to support this

programme. This year, through MMS sponsorship of the facilities improvement of Chagar Hutang research station for waste management, SEATRU has constructed a waste recycling corner and is in the process of collecting recycled waste for upcycling projects. The kitchen has also undergone a complete renovation and a new washroom has been successfully constructed as per the project implementation plan to cater a larger volunteer base at the research station.

On top of that, MMS also has taken internal initiatives to strive towards embedding awareness of sea turtles by sharing monthly information on the Workplace platform, reinforcing MMS' seriousness and commitment to ensuring all MISC fraternities are well equipped with the necessary knowledge on sea turtles and their conservation practices. By doing this, the ocean's well-being will be sustained for a longer time, so that our future generations have the benefit of the marine life.



**SEA TURTLE CONSERVATION INITIATIVE: VOLUNTEER / OUTREACH PROGRAMME**

Through its outreach programme, SEATRU continued to raise awareness on sea turtles through educational daytrips to the station and Kem Prihatin Penyu where people are equipped with the theory and practical knowledge of sea turtle conservation. As for the EPP, this year MMS began to open the volunteer opportunities to the rest of the MISC Group of Companies, which resulted in 25 volunteers experiencing a once in a lifetime opportunity of the sea turtle conservation seven-day programme which has increased their knowledge on sea turtle and its life cycle. This practical exposure will not just raise awareness but also make them appreciate this incredible creature.

	2019	2020	2021	2022
<b>Number of Nest</b>	1,523	1,731	1,825	2,181
<b>Hatching Success (%)</b>	71	62	72	78.12
<b>Number of Volunteers from MISC Group</b>	-	11	6	25

## MANGROVE CONSERVATION PROGRAMME

In 2022, we expanded our HOTO Programme by embarking on a mangrove conservation initiative on a plot of land belonging to ALAM to complement our marine biodiversity conservation efforts. The land – which is a mangrove forest – forms part of ALAM’s land concession with the State Government of Melaka and is situated 4.5 km away from the ALAM campus in the Kuala Linggi district.

Partnering with Global Environment Center, an NGO with expertise on mangroves conservation, we initiated a baseline assessment to understand the health and degradation level of the mangroves. The assessment included biological, ecological and community baseline studies. Findings from the biological-

ecological assessment indicated that the ALAM Mangrove Plot is of high biodiversity value and the mangrove ecosystem is productive and healthy.

In spite of the mangroves being healthy, implementation of a conservation management strategy would provide support for the mangroves ecosystem to remain healthy and protected in the future.

Going forward, based on the outcome of the baseline assessments, we intend to initiate and execute a plan to conserve the mangroves.



A community survey was completed as part of the mangroves baseline assessment to understand the local community’s level of awareness and knowledge of the ALAM mangroves and to get their feedback on interest to be part of the ALAM mangrove conservation action plan. Based on the survey completed, majority of the people engaged works in the fisheries sector. They are generally aware on the ecosystem benefits of mangroves and are interested to participate in the mangrove conservation activities of the ALAM plot. Illegal cutting of mangroves in the Kuala Linggi area were highlighted as one of the threats during the community survey.

### Biological-Ecological Assessment Findings

#### FLORA ASSESSMENT



In the 3.52 ha ALAM plot, there are **18 mangrove tree species**. Average age of the oldest tree is predicted >20 years

High potential to establish semi production area for various mangrove species.

For above-ground biomass (AGB) estimation, the ALAM plot houses:

TOTAL **2,240 trees** = **1,305 tCO<sub>2</sub>\***  
(>10cm diameter) emission release if cleared

\* equivalent to emissions of at least 283 passenger vehicles’ emissions per year.

ALAM plot is active carbon storage plot and can remove more carbon if continue to be preserved in undisturbed condition.

#### FAUNA ASSESSMENT

**7** mammals species **40** bird species **6** reptilia and amphibian species **17** gastropod species **12** butterfly & dragonfly species **15** fish species

**6** Mangrove specialist\*\* species  
**3** Critically Endangered/Endangered/  
Vulnerable species under IUCN Red list  
**1** Malaysian protected species

\*\* species that are unique and only found in mangrove that represents healthy mangrove biodiversity

#### CRAB MOUND ANALYSIS



**~800** crab mounds found. (up to 1.5m tall)

High density of crab mounds directly correlates to the high density of adult mangrove and indicates high productivity of the mangrove forest in nutrient and carbon cycling.

#### WATER QUALITY

The water quality in ALAM plot shows undisturbed mangrove forests or moderate to least disturbed mangrove forests

The current water quality are able to support the biodiversity of the ALAM plot and livelihood of locals.

## RAISING BIODIVERSITY AWARENESS



At MISC, we actively promote a deeper understanding of ocean health among our employees through various awareness campaigns and internal postings.

As the world celebrated World Ocean Day on 8 June, closer to home, this annual celebration was also commemorated across the Group both virtually and through physical sessions in various offices and locations. Hosted by Group Health, Safety, Security and Environment (Group HSSE), approximately 300 employees participated in the live broadcast of the virtual event to observe and be enlightened on the significance of revitalising our ocean, which is the sustenance of our livelihood and protector against climate change.

The event televised two eye-opening films, Vaka and Speechless, that portray how climate change is not just threatening our environment but also mortally harming human beings.

The event then continued with a video highlighting the achievements of our two HOTO conservation programmes, namely the HOTO – Mersing Islands Initiative and UMT-MMS Sea Turtle Conservation Initiative. Since its commencement in 2020, we are proud to observe the initiatives’ positive progress towards achieving its five-year goal in improving the ocean health via reef and sea turtle conservation.

In our effort to increase employee awareness, in conjunction with the International Coastal Cleanup celebration held in September, beach cleaning activities were implemented across the MISC Group. Cleanups were held at 9 separate locations globally with more than 300 employees participating and about 1 tonne of waste collected in total from all cleanups done throughout the year.



# OUR ENVIRONMENTAL PERFORMANCE

## KEY HIGHLIGHTS FOR 2022



Invested **RM55** million in environmental protection initiatives



Invested **RM2** million on mitigating climate change



Performed **122** environmental-related audits throughout the Group and our contractors

Refer to our Performance Data section for full listing of environmental data performance



## ENVIRONMENT POLICY

At MISC, our environment policy is captured as part of our HSE Policy. Key elements of our Environment Policy include:

- Ensuring compliance with relevant environmental laws and regulations
- Commitment to continuous improvement of environmental performance
- Commitment to set targets and objectives to reduce environmental impacts
- Measures to raise stakeholders' awareness on relevant environmental matters

## ENVIRONMENT MANAGEMENT SYSTEM

Our Offshore Business, Marine & Heavy Engineering and Integrated Maritime Services segment have been certified with ISO 14001:2015. The scope of ISO 14001 covers our functions, activities and services including fleet management services, engineering, procurement, construction, installation, commissioning, operations and maintenance, decommissioning and demobilisation (EPCICODD) of offshore floating facilities and heavy and marine engineering services.

As part of MISC's HSE Management System, we have established minimum environmental requirements in six key areas for each business to comply. Under each key area, prescriptive requirements have been established to strengthen governance on key environmental risks as well as to clearly define the scope for environmental assurance within MISC Group.

### 6 Key Areas of the Group's Environmental Minimum Requirements Procedure

- Air Emission Management
- Hazardous Waste Management
- Wastewater Management
- Soil and Groundwater Management
- Environmental Management of Projects
- Environmentally Hazardous Substances Management

## ENVIRONMENT AUDITS

MISC Business Units and subsidiaries undergo environmental audits to assess the effectiveness of environmental-related procedures implementation. These audits were carried out through integrated HSEMS assurances and internal audits for ISO 14001 and ISO 50001.

For further information on HSEMS-related assurance programmes conducted in 2022 for the Group, please refer to Operating Safely section

## GREENHOUSE GAS MANAGEMENT

### MISC GROUP GHG INVENTORY

#### ORGANISATIONAL BOUNDARIES

MISC's Group's GHG organisational boundary adopts the GHG Protocol Corporate Standard's financial control approach. In accordance with the Group's revised GHG organisational boundary definition, MISC Group's GHG inventory (Scope 1 and 2) include emissions from all assets/facilities owned or leased that are used by MISC to gain economic benefits. The adopted approach excludes emissions from the following assets/facilities:

- Downstream leased assets where MISC has no control;
- Assets where MISC has minority equity ownership and no control;
- Upstream leased assets where MISC has no control; and
- Assets on short term leases of six months or less.

For more details on our accounting principles, please refer to our Reporting Principles and Data Assumption section.

#### OPERATIONAL BOUNDARIES

##### SCOPE 1 & 2

All direct GHG emissions emitted from assets and operations falling within MISC's GHG organisational boundary are accounted as Scope 1 GHG, while electricity and energy purchased for use on these assets are accounted as Scope 2.

Scope 1 GHG emissions from shipping operations accounted for 98% of the MISC Group total GHG emissions (Scope 1 and 2) in 2022.

Scope 2 GHG emissions mainly comprise of purchased electricity by MHB as well as our FSUs operating in Sg Udang Melaka.

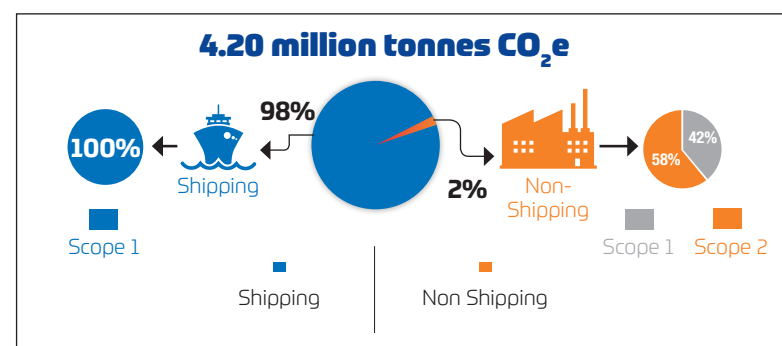
##### SCOPE 3

In 2022, we conducted a materiality assessment of our Scope 3 emissions according to the Greenhouse Gas Protocol – Technical Guidance for Calculating Scope 3 for our key businesses i.e. shipping, offshore and marine and heavy engineering business. This materiality assessment will be reviewed on an annual basis.

MISC Group entities account and report Scope 3 emissions in accordance with the following materiality definition:

- Categories covering the top 2/3 of the total Scope 3 emissions
- Operational emissions from assets not accounted as Scope 1 and 2 of which fall under the following Scope 3 categories:
  - Leased vessels where MISC has no financial control;
  - Vessels owned by MISC but leased out to other parties and MISC has no control; and
  - Vessels which MISC has equity ownership but not accounted in Scope 1 and 2.

#### Overview of MISC Group FY2022 GHG Emissions (Scope 1 and 2)



Based on the materiality definition adopted and screening of emissions on all relevant Scope 3 categories, the following categories were assessed as material for MISC:

- Category 1 (Purchased Goods and Services from MISC's marine and heavy engineering operation);
- Category 3 (Fuel- and Energy-Related Activities);
- Category 8 (Upstream Leased Assets) - In-chartered vessels where MISC is the commercial operator only (neither the vessel owner nor have technical control);
- Category 13 (Downstream Leased Assets) - Assets owned by MISC and leased out to customers for offshore oil and gas extraction; and
- Category 15 (Investments) - Vessels which are jointly owned by MISC and other parties, where MISC has equity ownership and does not have control.

Please refer to our Performance Data section for our available material Scope 3.

### CARBON INTENSITY MEASUREMENT METRICS

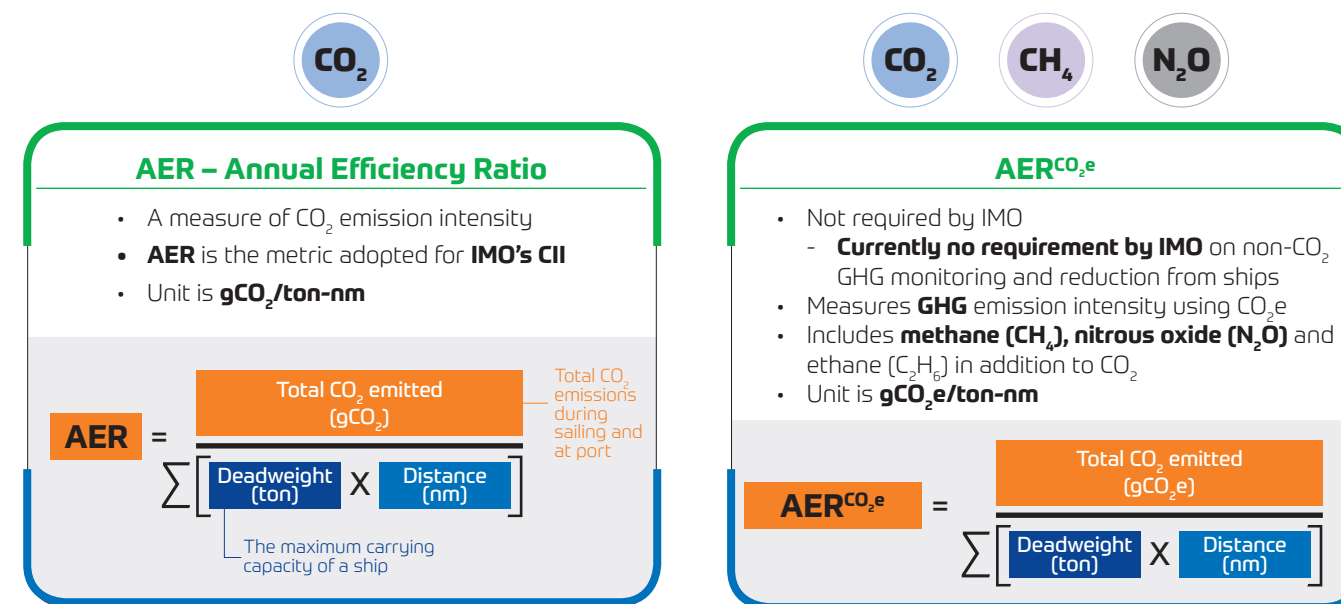
We measure our carbon intensity using Annual Efficiency Ratio (AER) which is aligned with IMO's mandatory scheme on operational CO<sub>2</sub> reduction known as Carbon Intensity Indicator (CII). AER measures a vessel's total CO<sub>2</sub> per unit of transport work (unit: gCO<sub>2</sub>/t-nm). Transport work is calculated by multiplying the vessel's deadweight with the distance travelled.

However, the AER metric only measures CO<sub>2</sub> and not other GHGs converted into CO<sub>2</sub> equivalent (CO<sub>2</sub>e). Therefore, in addition to AER, we also track and report our vessels' GHG

performance in unit of CO<sub>2</sub>e per t-nm which includes all relevant GHGs from our operations i.e., carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O). This metric is referred to as AERCO<sub>2</sub>e.

For our very large ethane carriers (VLEC) which consumes ethane as fuel, GHG from ethane (C<sub>2</sub>H<sub>6</sub>) is also included in the CO<sub>2</sub>e calculation. In the AERCO<sub>2</sub>e measurement, the same transport work measurement as AER is used. Currently, IMO does not mandate GHG measurement other than CO<sub>2</sub>.

#### MISC Shipping Fleet Operational CO<sub>2</sub> and CO<sub>2</sub>e - AER and AERCO<sub>2</sub>e



#### ENERGY EFFICIENCY EXISTING SHIP INDEX (EEXI) & CARBON INTENSITY INDICATOR (CII)

The IMO adopted new regulations mandating the reduction of CO<sub>2</sub> emission from ships during the Marine Environment Protection Committee (MEPC) 76<sup>th</sup> Session held in June 2021. Enforced from 1 January 2023, these technical and operational measures aim to reduce the carbon intensity of international shipping in line with the industry's goals as established in IMO's Initial Strategy for Reducing GHG Emissions from Ships.

In 2021, we conducted a study to assess the implications of both EEXI and CII requirements on our fleet. In 2022, compliance plans were developed for each vessel. Although this presents challenges for our older vessels, MISC will continue to make energy efficiency performance improvements to ensure that the fleet keeps pace with evolving regulatory standards in 2023 and beyond.

OUR ENVIRONMENTAL PERFORMANCE

GHG EMISSIONS PERFORMANCE

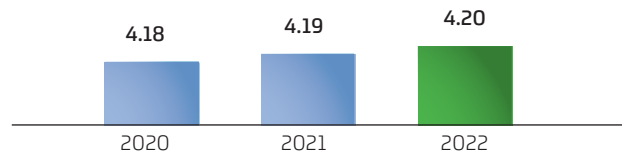
MISC Group has set a mid-term target to achieve 50% GHG intensity reduction for shipping operations by 2030. Our long-term target remains to achieve Net-Zero GHG emissions for all operations by 2050.

In 2022, we achieved a 17% reduction in our fleet average CO<sub>2</sub>e intensity (GAS and Petroleum) compared to 2008. In comparison to our performance in 2021, our fleet average CO<sub>2</sub>e intensity improved slightly by 1% in 2022. This improvement was contributed mostly by the addition of newbuild vessels with improved energy efficiency capability as well as overall increase in existing vessel's distance travelled.

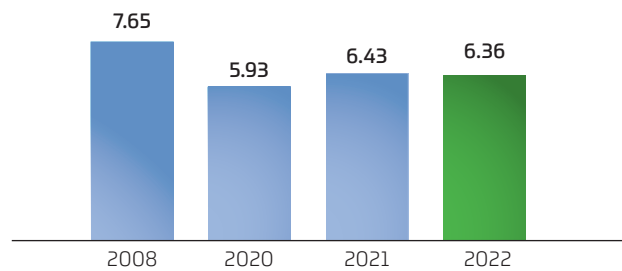
We will continue to work on improving efficiency through both operational and technical improvement initiatives as well as our focus on low-carbon design of newbuild vessels.

In absolute term, our GHG emissions from all operations (Scope 1 and 2) were recorded at 4.20 million tonnes CO<sub>2</sub>e, which is a slight increase from 2021 emissions. This is mainly due to the increased activity in our shipping and heavy engineering operations.

MISC Group Total GHG Emissions (million tonnes CO<sub>2</sub>e)



MISC Shipping Carbon Intensity (gCO<sub>2</sub>e/ton-nm)



Note: 2020 and 2021 data for carbon intensity was restated due to updates in vessel's deadweight values

GHG DATA ASSURANCE

DNV, our appointed third-party classification society, verified our vessels' fuel consumption and relevant data. The verification confirmed that our fuel consumption data collected and reported in accordance with the methodology and processes set out in the Ship Energy Management Plan (SEEMP) and Regulation 22A of Annex VI of the MARPOL Convention.

ENERGY MANAGEMENT SYSTEM

Our GAS and Petroleum fleet have been certified with the ISO 50001:2018 Energy Management System, which provides a continual improvement framework to improve the energy efficiency of our shipping operations. The standard requires stringent monitoring, planning, checking and continuous improvement by reducing fuel consumption from the vessels. The standard improves awareness among the internal stakeholders and increases the efforts in this respect.

Over the years, various operational initiatives in support of our ISO 50001 Energy Management System were implemented for the fleet. Hull cleaning and propeller polishing are carried out based on performance monitoring and condition assessment basis. Vessels' dock-to-dock performance trend analysis and continuous monitoring of

the vessels' performance for detection of deviation have triggered hull cleaning and propeller polishing in timely manner while avoiding excessive fuel consumption. Energy efficiency performance of vessels during discharging and loading operations at ports are also calculated. All vessels' performance is evaluated under specific established baseline depending on sea trial data on a quarterly basis. The opportunities for fuel saving in these operations are highlighted to the operations and commercial teams for enhancement of the performance.

Additionally, we are progressively implementing advanced technologies, such as optimised newbuild designs, advanced anti-fouling paints and energy-saving fittings on newbuilds.

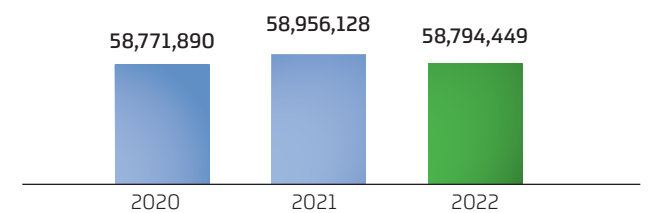
ENERGY CONSUMPTION

The energy consumption for MISC Group consists of fuel used for our shipping operations and non-shipping operations.

For our shipping operations, our main energy usage is the fuel for main engine (motor and steam vessels), auxiliary engine, auxiliary boiler, inert gas generator, emergency generator and gas combustion units.

For our non-shipping operations, our energy usage mainly comes from the electricity consumption to run machineries used in our Marine & Heavy Engineering business repair yards.

MISC Group Energy Consumption (GJ)



Note: 2021 data was restated due to recalculation of our data.

RENEWABLE ENERGY

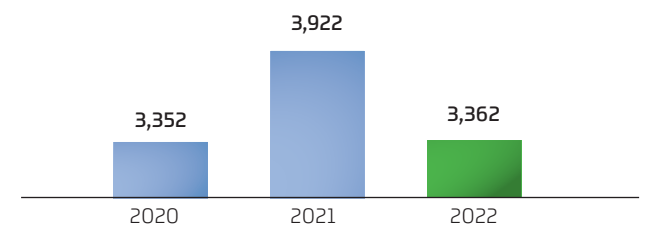
In 2021, we started to use renewable solar energy in our Marine & Heavy Engineering business segment, MHB. Total renewable energy used amounted to 8,957 MWh in 2022 which is a 47% increase compared to 2021.

AIR EMISSIONS

The IMO 2020 Global Sulphur Cap, effective from 1 January 2020, stipulates that the sulphur content in fuel oil used by ships must not exceed 0.50% m/m. Since its implementation, we have introduced several initiatives to meet this requirement, including:

- Changing our fuel to low sulphur fuel and LNG; and
- Retrofitted a few of our vessels with scrubbers.

MISC Group SO<sub>x</sub> Emissions (tonnes)



OZONE DEPLETING SUBSTANCE

We are committed to phasing out Ozone Depleting Substances (ODS), under the provisions of the Montreal Protocol. Almost 100% (for shipping only, exclude workboats) of the refrigerants used on our vessels are non-ozone-depleting with zero ozone-depleting potential. We switched to non-ODS refrigerants on vessels and offshore floating assets, implement Refrigerant Management Procedures onboard vessels and offshore assets and regularly monitor our refrigerant consumption. In 2022, we also recorded a 75% reduction in ODS compared to 2021.

## WASTE MANAGEMENT

We operate on land and at sea and our waste management complies to the specific regulatory requirements in the geographical areas we operate. In 2021, we have developed a set of 4R (Refuse, Reduce, Reuse and Recycle/Recover) targets for hazardous, non-hazardous, paper and plastic waste to be achieved in 2025.

[More details on our targets can be found in the Promoting Circular Economy section in this report.](#)

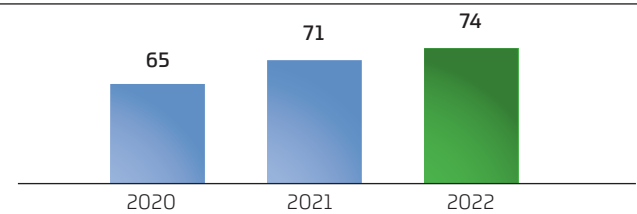
### WASTE MANAGEMENT AT SEA

Waste management at sea is governed by MARPOL. All our vessels have garbage management plans and waste is separated on board according to the requirements. Most of the wastes generated onboard our vessels are sent to shore reception facilities for onward recycling, treatment, recovery, or disposal. Wastes that are not sent to shore are incinerated onboard using type-approved shipboard incinerators while food wastes are discharged to sea in compliance with the requirements of MARPOL Annex V.

In 2022, we continue to implement actions to reduce single-use plastic usage in our operations. We replaced disposable drinking bottles with use of water filter and encourage our suppliers to provide bulk packaging and use reusable packaging materials. However, we have observed a slight increase in plastic waste generation per vessel largely due to increased use in disposable plastic bottles and single-use food packaging for visitors. This is mainly due to controls implemented during the COVID 19 pandemic on the basis of hygiene concern. In contrast, the performance for plastic waste reduction for Offshore Business has improved. This is mainly driven by the initiative to reduce plastic packaging from supply chain. The requirements for suppliers to minimise plastic usage for packaging are introduced and included in the purchase material and service requisition and purchases are made in bulk to reduce plastic packaging waste.

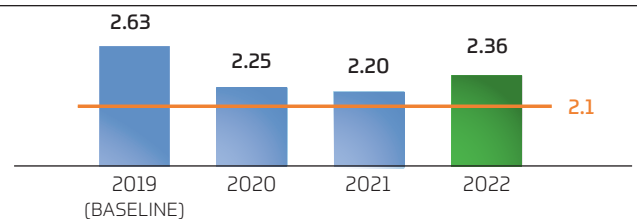
To reduce our paper consumption, we have progressively introduced digitalised system for our paper-based work processes on board our vessels. The permit-to-work (PTW) processes are digitalised through implementation of SOL-X system.

**MISC Fleet Garbage Generation per Vessel (m³)**



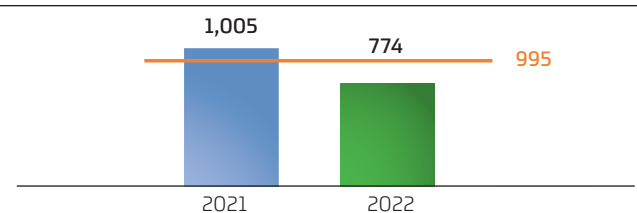
Note: Data for 2021 and 2022 includes our owned vessels that are operated by third party.

**MISC Fleet Plastic Waste Generation (m³ per month per vessel)**

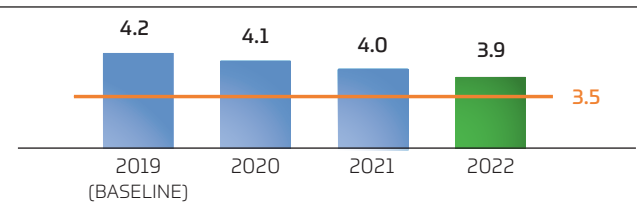


Note: The above data exclude our owned vessels that are operated by third party (these vessels are not included in the waste 4R target)

**MISC Offshore Plastic Waste Generation (kg per month)**



**MISC Fleet Paper Consumption (ream per month per vessel)**



Interim 2022 Target

### WASTE MANAGEMENT AT SHORE

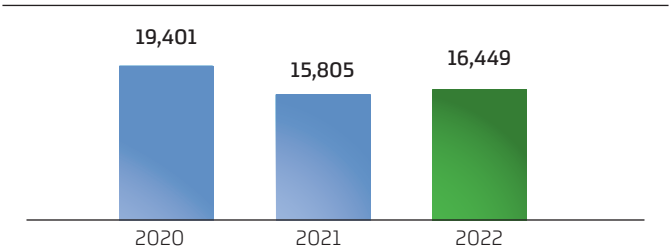
In 2022, approximately 99% of hazardous waste generated from our shore operations were recycled, reused, or recovered. Our Marine & Heavy Engineering operations continued to send spent blasting materials generated from yard operations to licensed cement manufacturing facility where they are recycled and used as raw material in the production of cement. Additionally, the use of durable abrasives for certain operations allowed the reusing of materials, which reduced waste from blasting.

In 2022, our Marine & Heavy Engineering business received two fines from the Department of Environment for non-compliance on hazardous waste management. We have taken immediate actions to rectify the situation and to prevent recurrence of such incidents. A waste task-force to enhance compliance at site was established and internal work processes are currently being enhanced to improve efficiency of waste services procurement.

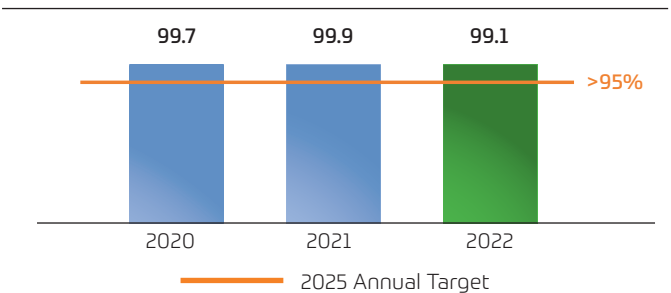
Our total hazardous waste in 2022 increased by 4% due to higher generation of oily water from increased marine operations at our Marine & Heavy Engineering business segment.

To improve our non-hazardous waste 3R rate for non-shipment, we have continued sending segregated recyclable waste such as paper, aluminium and glass to 3R facilities and also send our used wooded pallets for reuse. However, we continue to face challenges on 4R practices in our marine and heavy engineering business largely due to the nature of operations involving large manpower employed on project basis and we have identified key measures to address the challenges. Amongst others, we will focus our effort to improve our waste segregation at source to enable more effective waste recycling and source for alternative packaging material to replace single use plastic packaging.

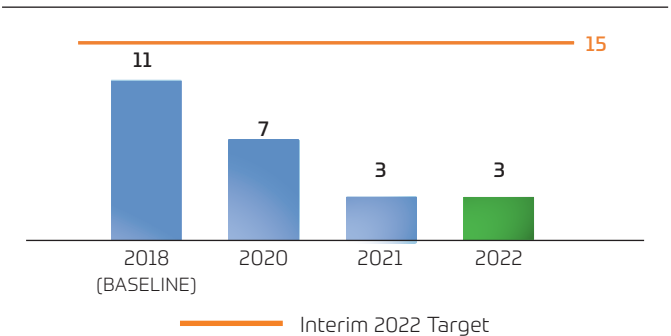
**MISC Group Hazardous Waste Generation (tonnes)**



**MISC Group Hazardous Waste 3R Rate (%)**



**MISC Group Non-Hazardous Waste 3R Rate (%)**



## WATER MANAGEMENT

### WATER MANAGEMENT AT SEA

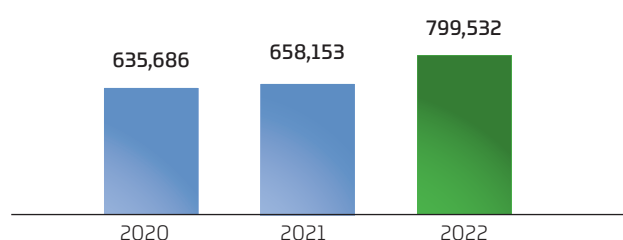
Freshwater consumption by our vessels is produced onboard by each vessels' freshwater generator, hence, depletion of freshwater resources is not considered material for our shipping operations.

We manage our operational effluent discharge from our vessels through proactive action in rectifying leakages to reduce water and oil accumulating in the engine room.

### WATER MANAGEMENT FOR NON-SHIPING OPERATIONS

In 2022, our non-shipping operations recorded higher total freshwater withdrawal by 21% compared to year before. This is due to increased activities in our marine and heavy engineering yard post lockdown period.

**MISC Group Total Freshwater Withdrawal (m³)**



We implement a performance monitoring programme for effluent treatment systems at our marine and heavy engineering yard. We have a system to regularly monitor

### BALLAST WATER MANAGEMENT SYSTEM

Since the introduction of steel-hulled vessels, water has been used as ballast to stabilise vessels at sea. Ballast water is essential for safe and efficient modern shipping operations. Unfortunately, when not properly managed, it can cause adverse ecological, economic, and health problems due to bacteria, microbes, small invertebrates, eggs, cysts and larvae. The transferred species may survive to establish a reproductive population in the host environment, becoming

and track our water discharges, including surface water and marine water, to identify potential deviation and to ensure the discharges comply with the following standards:

- Environment Quality (Industrial Effluent) Regulations 2009 (Standard B);
- Malaysia Marine Water Quality Standard (MMWQS);
- Site Screening Level DOE for Contaminated Land Management and Control Guideline; and
- National Water Quality Standard.

Corrective action to address any non-conformances will be monitored until closure.

Our Marine & Heavy Engineering business segment adopted the Self-guided Regulations by the local Department of Environment (DOE), encouraging companies to take responsibility in their monitoring and reporting by submitting our monitoring results through DOE's online system.

invasive, out-competing native species and multiplying into pest proportions.

All newbuild vessels of MISC delivered since 2016 are equipped with a Ballast Water Treatment System (BWTS). A Five-Year Ballast Water Management Retrofitting Plan has been implemented to ensure timely compliance for all vessels. In 2022, 96% of our vessels has been retrofitted with the BWTS.

## ENVIRONMENTAL AWARENESS PROGRAMME

Environmental sustainability is centred on our impact on ecological and natural resources. Inviting our employees to contribute to our environmental programmes inspires them to contribute to the future green world by playing their roles today.

In 2022, we held several environmental programmes with the aim of raising awareness and encouraging employee participation. These include the Employee Participation Programme (EPP), World Ocean Day Celebration and MMS Plastics Free and Recycling Campaign.

### WORLD OCEAN DAY

This year, our hybrid World Ocean Day was celebrated at Menara Dayabumi and other offices where we operate with numerous engaging workshops focusing on the Waste-to-Value concept. Our employees learned about upcycling activities where they converted used cooking oil and repurpose single-use plastic by building eco-bricks. We also had a hands-on composting workshop, a live demo on upcycling plastic waste into useful everyday products using an extruder machine, playing the Reef Stakes card game, a marine ecosystem virtual tour, and a pirate race eco-challenge.

In conjunction with World Ocean Day, we also launched the EPP 2022 under the Heart of the Ocean initiative, which gives our employees an opportunity to contribute and give back to our blue planet.

[More details on our EPP programme can be found in the Conserving Marine Biodiversity section.](#)

### MMS PLASTIC FREE AND RECYCLING CAMPAIGN

MMS continued its Plastics Free and Recycling Campaign to reduce consumption and usage of biodegradable plastic and ban single-use plastic throughout its offices and operation areas. Since its inception in 2021, campaign activities include replacing small bins with centralised recycle bins and encouraging the reuse of containers for takeaway food as well as monitoring the usage of single-use plastic among employees.

### EARTH DAY AT OFFSHORE BUSINESS

In conjunction with Earth Day, our Offshore Business organised the Earth Day 2022 Forum entitled 'Invest in Our Planet'. The forum saw a mix of experienced internal and external speakers talking about the role of stakeholders to be forward thinking and drive the development of green alternatives and solutions in line with the Paris Agreement commitment, as well as to accelerate fair economic transition and the need to strengthen collaborations and engagement among stakeholders for a better future. The forum also served as a platform to educate our employees on climate change issues and our responsibility as change agents to drive the growing green economy.

Throughout the Group, we also coordinated various environmental awareness activities to encourage our employees to live sustainably and reduce their impact on the environment where possible.

# OPERATING SAFELY

## HEALTH AND SAFETY

### Our Commitment

- To provide a safe and healthy environment for employees, contractors and our communities
- To achieve Generative HSSE Culture

### Our Initiatives

Strengthen Health and Safety Culture through the adoption of:

- Integrated Health and Safety Framework
- Contractor Health, Safety and Environment (HSE) Management
- Process Safety Management
- Health and Safety Competency

### Our Contribution to UNSDG



Promote good health and well-being of employees, contractors, and communities

The Health and Safety strategic priority directly contributes to UNSDG 3 by promoting the health and well-being of employees, contractors and communities.

All our workplaces, activities and services adhere to the applicable laws, regulations, internal standards and procedures to protect the health, safety, security, environment and well-being of our employees, contractors and communities.

As it can have a critical impact on the organisation and the environment, health and safety are prerequisites to formulating plans, procuring products and services, making investment decisions and managing total business risks.



Our Health, Safety and Environment Policy can be downloaded here

## HEALTH, SAFETY AND ENVIRONMENT MANAGEMENT SYSTEM

Our Health, Safety and Environment Management System (HSEMS) is a management system pursuant to the Health, Safety and Environment (HSE) policy instituted by MISC top management. At MISC, we implement the MISC Group Integrated HSEMS developed in reference to applicable international standards, legal requirements, and other recognised industry best practices. The HSEMS guides us

in planning and mitigating the risks of health and safety of employees and third parties as well as the environment.

The HSEMS establishes the expectations and minimum performance objectives for managing HSE within MISC Group of Companies.

### KEY ELEMENTS OF OUR HSEMS

- Top-down commitment and company's culture necessary for success in the systematic management of HSE;
- Requirements for policy, strategic objectives, and development of HSE Plan, considering the overall risk levels of business activities and taking into consideration the legal requirements, technological change, emerging issues, and key stakeholder's expectations;
- Description of organisation structure, roles, responsibilities, authorities, accountabilities and interrelations (e.g. partners, contractors, regulators);
- Identification of HSE hazards and evaluation of HSE risks, for all activities, services and development of control and recovery measures to reduce HSE risks to as low as reasonably practicable (ALARP);
- Planning of work activities, managing changes, and development of emergency response measures as well as ensuring systems are in place to verify that tasks and activities are carried out in accordance with procedures and work instructions;
- Conducting assurance programmes to review and verify the effectiveness of the management system; and
- Conduct periodic review of HSEMS for suitability and effectiveness.

Our Offshore, Marine & Heavy Engineering, Port Management & Maritime and Integrated Marine Services business segment are certified with the ISO 45001:2018 Occupational Health and Safety Management System which recognises the pursuit for HSSE excellence.

Details of the scope of our certification can be found in Performance Data section



SHAPING OF GENERATIVE HSSE CULTURE

We believe that Health, Safety, Security and Environment (HSSE) is everyone's responsibility. The HSSE culture of an organisation encompasses individual and group values, attitudes, perceptions, competencies of the entire workforce and patterns of behaviour that determine the commitment of the organisation's HSSE management. We aim to institutionalise a Generative Culture within MISC Group where everyone is doing the right thing all the time even when no one is watching.

MISC Group has embarked on a journey towards achieving a Generative Culture in 2021 and since then have identified five focus areas on interventions to foster Generative Culture.

In order to understand our HSSE culture, we conducted Culture Maturity Survey (CMS), with the last survey conducted in 2021. The 2021 CMS results indicated that as a group, MISC has attained proactive culture level. However, we cannot be complacent and therefore must concentrate our efforts towards achieving Generative Culture.

During the year under review, we conducted leadership trainings and coaching on Generative Culture for various level of employment such as frontliners, middle managers and top leaders. The objective of these sessions was to establish better connections with employees and, more importantly to provide inspiration to their teams by demonstrating the Generative Culture Behaviours as well as to encourage the Generative Culture to do the right thing all the time even when no one is watching.

Moving forward, we will continue to strengthen Generative HSSE Culture by developing leaders at all levels with the right attitude and skills to promote HSSE culture and ensure forward accountability across the Group.

A total of **177 employees** trained on Generative Culture



FOCUS AREA	DESCRIPTIONS
<p><b>Communication</b></p>	<ul style="list-style-type: none"> <li>To uplift employee awareness, knowledge and enhance transparency</li> <li>Effective communication mechanisms are critical to engage employees in HSSE activities, to gain cooperation and support, and to maintain a positive HSSE culture</li> <li>Clear and constructive HSSE communication can improve knowledge and understanding that prevents at-risk behaviours and enhances safe work practices</li> </ul>
<p><b>Visible Leadership</b></p>	<ul style="list-style-type: none"> <li>Role model to build trust and demonstrate leaders' care</li> <li>Leaders at all levels of the organisation – top management, senior management, middle management, executives, team leaders and supervisors must take HSSE seriously and role model safe behaviours to other employees</li> <li>This encourages buy-in from other employees because HSSE culture is ingrained in the company's culture from the top</li> </ul>
<p><b>Compliance</b></p>	<ul style="list-style-type: none"> <li>Deliver compliance with sustainable HSSE performance</li> </ul>
<p><b>Capability Development</b></p>	<ul style="list-style-type: none"> <li>Shape HSSE mindset and behaviour</li> <li>All employees should receive regular training on HSSE processes and policies</li> <li>Steps should be taken to monitor the effectiveness of the training. Any gaps or inconsistencies should be addressed through further training or one-to-ones.</li> </ul>
<p><b>Recognition</b></p>	<ul style="list-style-type: none"> <li>To reward demonstration of excellent HSSE culture compliance</li> </ul>



HSSE PARTNERS' SUMMIT 2022

Our strong HSSE culture is defined by a broad spectrum of interventions and initiatives to promote great collaboration. On 8 November, the MISC HSSE Partners' Summit 2022 took place at Johor Bharu, with more than 250 employees and partners in attendance.

The Summit served as an excellent avenue for us to consistently enrich the commitment between MISC and our business partners for better HSSE quality, work efficiency and to leverage HSSE best practices in achieving safe and efficient operations.

Our President/Group CEO, Captain Rajalingam, began the session with his keynote address. He emphasised the importance of culture alignment with partners in our effort towards achieving Generative Culture. The Summit continued with a series of sharing sessions by our HSSE experts. A fruitful panel discussion took place with an insightful sharing on the role of leaders in shaping Generative HSSE.

During the event, HSSE Excellence Recognition Award were presented to eight deserving Partners for their HSSE best practices in achieving safe and efficient operation. Following the award session Captain Raja Sager, Vice President of Group HSSE moderated a dialogue session with our award-winning Partners on the event theme "Together Towards Generative HSSE".

OUR BEHAVIOUR-HEALTH, SAFETY, SECURITY AND ENVIRONMENT CULTURE

It is not always about what we do, but how we do it that results in accidents. In 2022, we continue to introduce several HSSE programmes through behavioural health, safety, security and environment (b-HSSE) to drive excellence in our HSSE culture. These programmes engender a Generative HSSE Culture that integrates HSSE fundamentals into all aspects of the business, operation systems and processes.

As part of the capacity building of a b-HSSE culture, we provide those responsible for managing HSSE hazards with the necessary training, skills and competencies.

Individual employees participated in HSSE initiatives organised throughout the year, as highlighted in the following sections.



## SAFETY

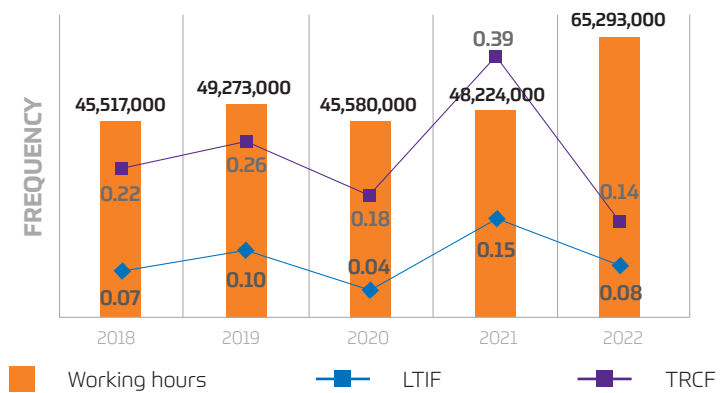
### SAFETY PERFORMANCE

#### MISC GROUP SAFETY PERFORMANCE

MISC Group's safety performance were within the set HSSE limits for 2022. Our shipping and fabrication yard business were in the top quartile for safety performance benchmarking in their respective industry.

In 2022, MISC Group recorded Lost Time Injury Frequency (LTIF) of 0.08 and Total Recordable Case Frequency (TRCF) of 0.14 which were well below the set limits of 0.21 and 0.62, respectively. Significant reduction in LTIF and TRCF were achieved, compared to 2021, through our continuous emphasis in behavioural safety and Generative HSSE.

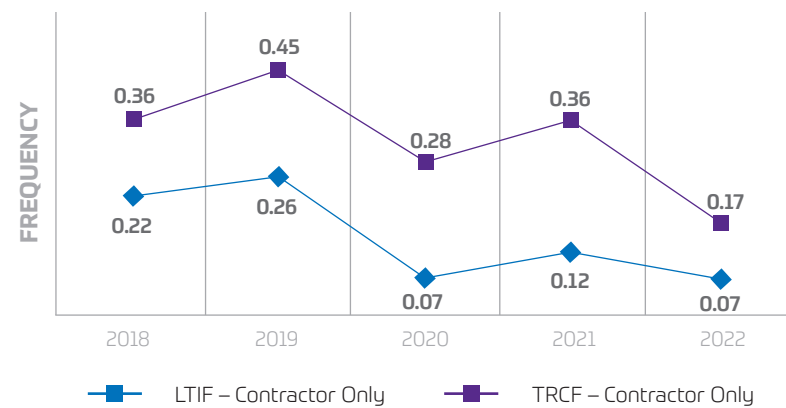
MISC Group Safety Performance



#### MISC GROUP CONTRACTOR SAFETY PERFORMANCE

In 2022, contractors' safety performance showed a reduction trends. With a significant increase in contractor man-hours this year, the LTIF and TRCF for contractors were lower than last year, recorded at 0.07 and 0.17, respectively, which is a commendable achievement.

MISC Group Safety Performance

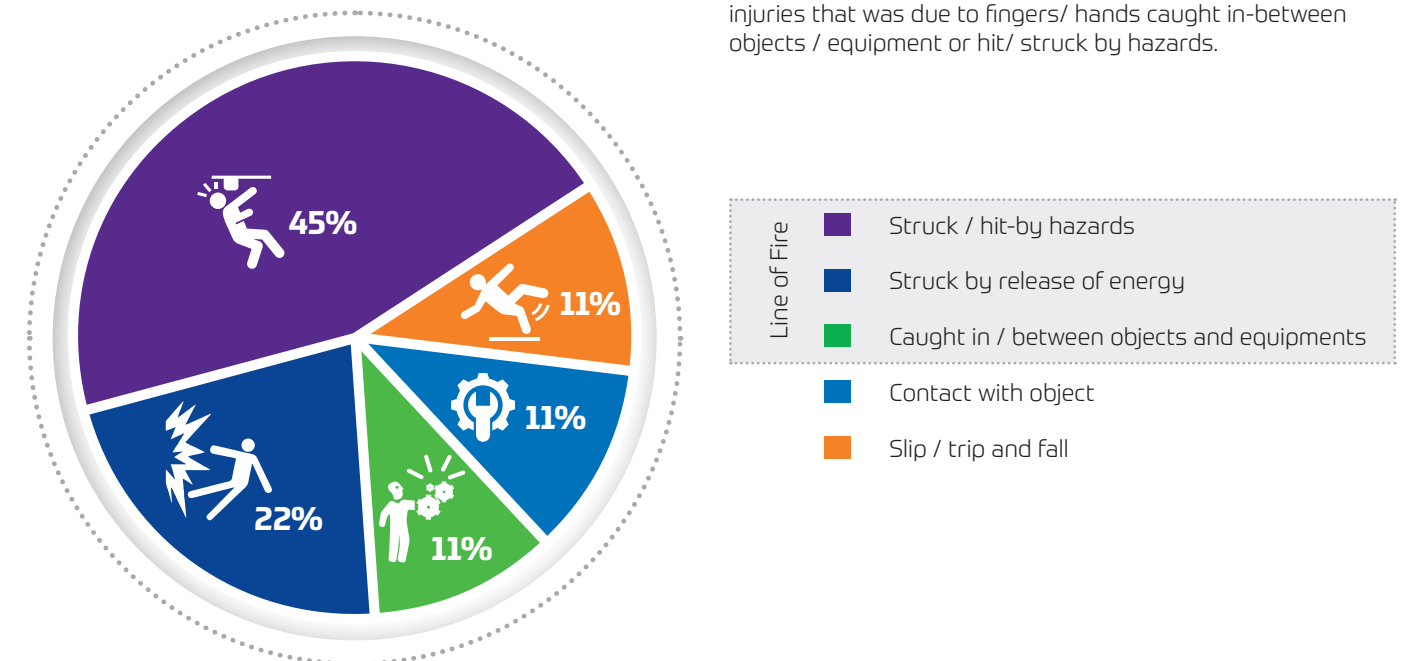


### MAIN TYPES OF WORK-RELATED INJURIES

In 2022, no fatality was recorded within the MISC Group. However, we recorded five LTI incidents involving three employees and two contractors. The injuries were associated with struck or hit-by hazards and caught in-between objects and equipment.

Based on our analysis, the incidents were divided into three main categories and Line of Fire contributed the highest number of incidents.

Most personal injury incidents were related to hand and finger injuries that was due to fingers/ hands caught in-between objects / equipment or hit/ struck by hazards.

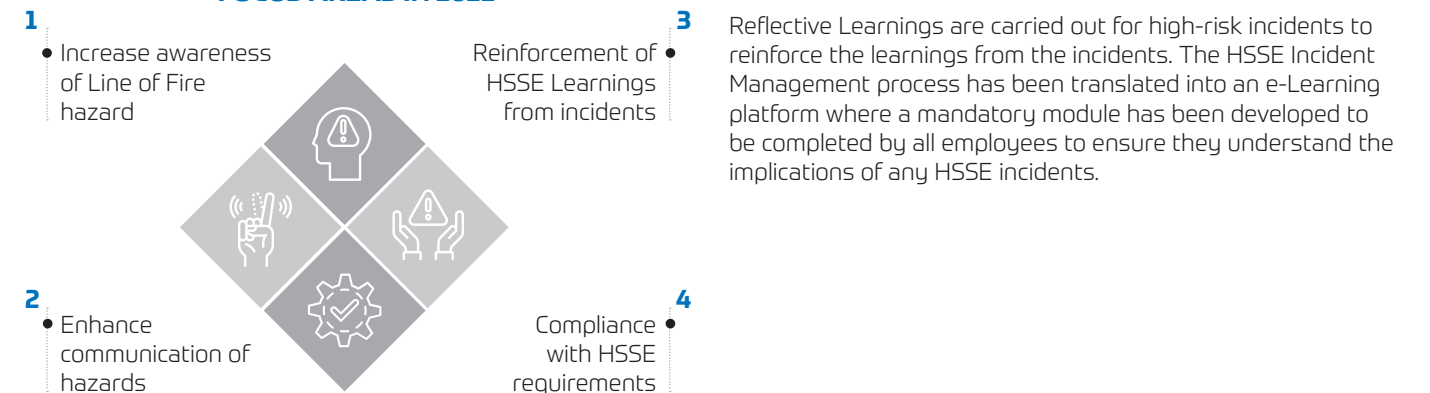


### INCIDENT PREVENTION

The Incident Intervention Plan addresses safety fundamentals such as improving onsite leadership visibility, emphasising risk evaluation and effective communication, heightening intervention, stopping work for unsafe behaviour and conditions and increasing employee engagement.

MISC Safety Rules were first introduced in 2015 to mitigate risks and reduce injurious incidents within the operations. In 2022, we performed extensive analysis of major injurious incidents within MISC Group including benchmarking with industry practices. The MISC Group Safety Rules were reviewed for improvement and to be continued in 2023 for implementation.

#### SAFETY INTERVENTION FOCUS AREAS IN 2022

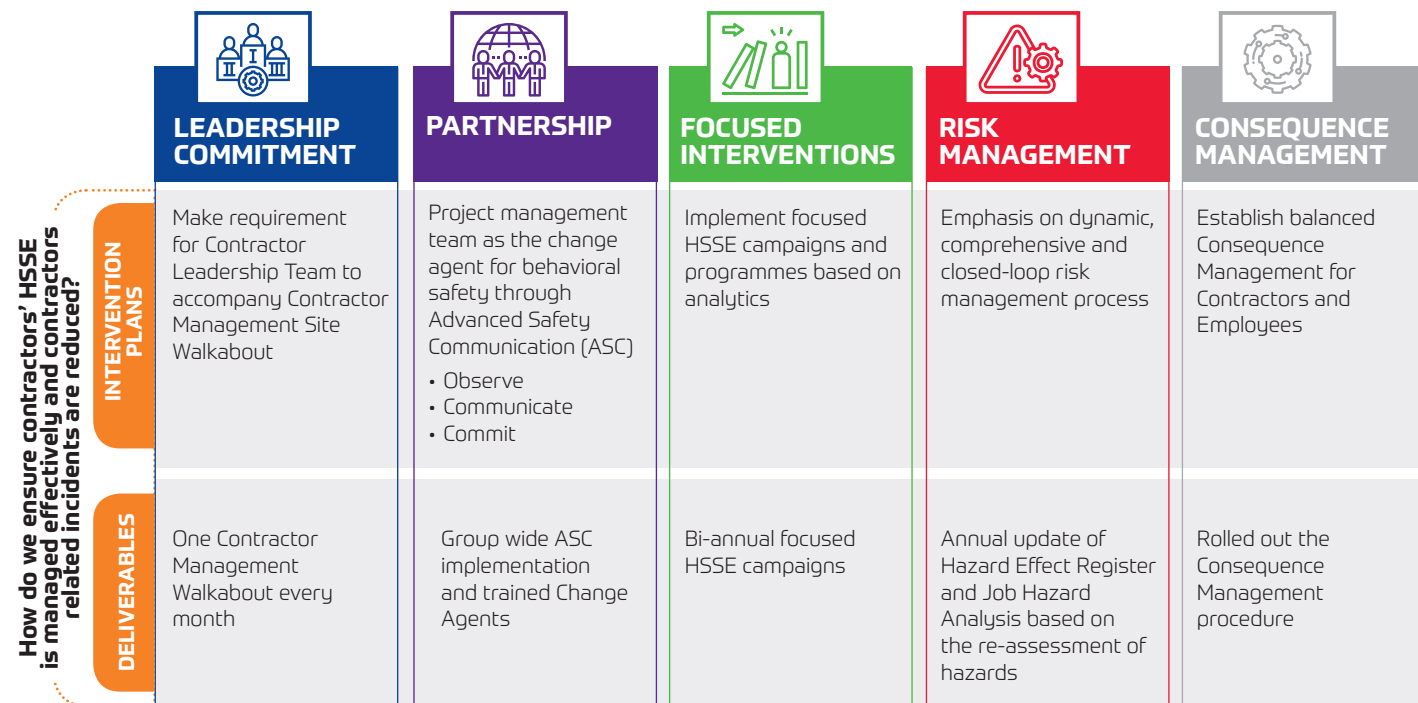




**HSSE NON-COMPLIANCE MANAGEMENT**

The HSSE Non-Compliance Management has been implemented within the MISC Group with emphasis on ensuring the identification of human factors are considered in incident and Safety Rules violations investigations. The intention of HSSE Non-Compliance Management is to identify the failures and provide support in terms of training and mentoring or rectification of behavioural concerns to prevent recurrence of incidents. The major incidents are reviewed at HSSE Council level, chaired by the President/Group CEO of MISC Group and subsequent actions to be taken for any identified non-compliance by employees and contractors are endorsed.

Based on our analysis, 28% of HSSE non-compliances recorded were contributed by human error. 10 employees and contractors have been given additional training and mentoring session on common human errors that resulted in non-compliance of HSSE requirements such as slip, lapse or mistakes.



**CONTRACTOR HSE MANAGEMENT**

Communication of hazards between project managers and contractors are intensified through the implementation of the Advanced Safety Communication (ASC) programme. ASC was developed to provide the project management team, managers, and supervisors with a systematic approach to shaping safe workplace behaviour using the 4Ps (People, Place, Process & Performance) in identifying hazards and reinforcing good practices. The Marine & Heavy Engineering and Offshore Business were first introduced to the ASC programme in 2021 and in 2022, we saw an increased in the number of ASC coaches to a total of 90 employees as it was implemented for a wider group of employees. Train-the-trainer training for ASC was carried out for our port management and maritime services business segment in August 2022. Moving forward, we plan to provide training and educate the external parties on ASC.

**Contractor HSE Management Intervention Plan**

**KEY HIGHLIGHTS**  
  
 ASC improves engagement and communication, especially with contractors

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**62** trained ASC Coaches

**804** ASC carried-out

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**100%** ASC closure rate

**PROCESS SAFETY**

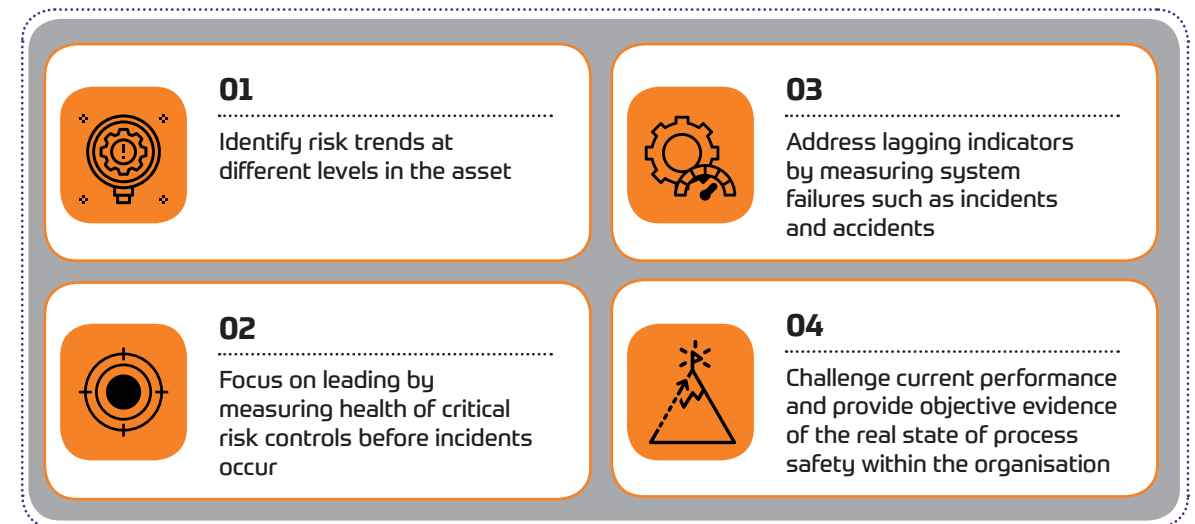
In our efforts to manage the potential damage of our assets and reputation as well as the lives of the people and environment, we introduced Process Safety Management (PSM). As part of the PSM, an updated Loss of Primary Containment (LOPC) and Fire Mitigation Prevention Framework were implemented as preventive control barriers to manage process safety risks. Through implementation of the structured framework, we actively identify and bridge the gaps for the existing technical safety standards and procedures against international standards.

integrity issues. A structured control framework serves as a guidance in ensuring the integrity and reliability of our assets so that all hazardous substances are held within the primary containment. To avoid corrosion and leakages, we put in place a robust maintenance plan for each equipment with case-specific prevention plans to maintain an As Low As Reasonably Practicable (ALARP) process safety risk and avoid LOPC.

Some of our assets are equipped with a complex processing facility that requires a complex management of mechanical

We report process safety events as per the API 754 Process Safety Performance Indicators (PSPI). PSPI detects the initial critical deteriorating performance risk controls, which allows remedial action before a catastrophic event occurs.

**PSPI PROGRAMME AIMS**



**ENHANCING SAFETY CULTURE THROUGH COMMUNICATION AND TRAINING**

**HSSE COMMITTEES**

Our employees can raise any HSSE matters to their respective HSSE committee. The HSSE committees represent all employees on HSSE matters and have been established throughout MISC Group's operations. The committees were established to ensure appropriate measures are in place when it comes to HSSE matters relating to employees as well as investigate and resolve any HSSE matters raised

by employees. HSSE performance and initiatives are also discussed regularly during HSSE Committee meetings and subsequently brought to the HSSE Council.

The HSSE committees are chaired by the respective managing director/chief executive officer of the business units/ subsidiaries and convene on a quarterly basis.

**UNSAFE CONDITION UNSAFE ACT**

Employees can raise their concerns through Our Unsafe Condition Unsafe Act (UCUA) reporting channel. We have enhanced our UCUA reporting and analytics through a digital UCUA application as proactive intervention to raise HSSE concerns and ultimately prevent incidents. Mobile and web applications are accessible to everyone and at the same time provide efficient reporting, and data can be analysed on a daily basis. In 2022, we received 135,929 UCUA reports from employees and contractors, which were then closed-out by relevant onsite functions.

We communicate UCUA analysis findings to the workforce during daily Toolbox Talks and relevant HSSE campaigns. HSSE Alerts and Lessons Learned are disseminated regularly through workplace portals, MISC intranet portal and email.

**STOP WORK AUTHORITY**

The Stop Work Authority is one of several initiatives developed to promote safe behaviour amongst all employees both at sea and shore. In 2022, we recorded a total of 3,675 stop work and all concerns were resolved before work was permitted to resume safely.

**MISC GROUP  
HSSE RECOGNITION DAY 2021**

In 2022, we conducted our 2021 HSSE Recognition Day to honour teams and individual HSSE achievements. This annual programme serves as an avenue for sharing HSSE experiences and aspirations. Due to restricted pandemic regulations, our HSSE Recognition Day was conducted virtually for the second time. It was broadcasted live to various locations. Over 1,200 employee from all offices, vessels and floaters joined this live event.

The mission to achieve Generative HSSE Culture was delivered by the top management with a call to make safety as part of each individual DNA everyday no matter where we are. In addition, the event was enlivened by the interview session between Captain Raja Sager, Vice President of Group HSSE and an employee, sharing his personal experience assisting a family during a road accident.

The event continued with award presentations to the winners of Best UCUA 2021 and HSSE Personality 2021. The HSSE Personality awards recognise exemplary individuals who have demonstrated generative HSSE behaviour and positively contributed to sustenance of HSSE performance. Besides that, our Marine & Heavy Engineering and Offshore Business segment was given a recognition award for their efforts in the implementation of the ASC programme.



**FLOOR  
SAFETY MANAGER  
AWAY DAY**

At MISC Group, we have established Floor Safety Manager (FSM) for every level and building we occupy. In 2022, we reconvene our FSM training and engagement programme with a total of 45 floor safety warden personnel from MISC Group operations.

Activities of our FSM throughout the three days programme

- Equip our FSM with required HSSE trainings such as Basic Fire Fighting, Office Safety, Hazard Identification Risk Assessment and Risk Control as well as on Environment aspects
- Improve FSM self-confidence, communication and emergency management skills
- Foster and strengthen the spirit of teamwork and collaboration between FSM and Group HSSE

**SAFETY TRAINING**

A workplace with an efficient safety training programme can reduce employee turnover, improve productivity and morale. As an employer, our responsibility is to provide our employees with knowledge and skills to perform their work in a way that is safe for them. We acknowledge the need for different safety training requirements to cater to different

job scopes and operations. Hence all our operating units have a comprehensive safety training regime for our frontliners. Based on our competency development plan, each employee has to complete at least two competencies based trainings and one leadership based training annually.



The following are some of the key trainings conducted in 2022

**ADVANCED SAFETY  
COMMUNICATION (ASC)  
TRAIN-THE-TRAINER**

**15**  
PAX

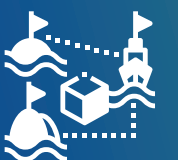
The Train-the-Trainer (TTT) training is part of the ASC roll-out programme aimed to train focal persons from respective entities and sites. The focal person will then train more employees from their entities, sites, or offices to be ASC Coaches, as well as plan and implement the ASC program for the respective entities and sites.



**PROCESS SAFETY IN  
MARITIME INDUSTRY**

**260**  
PAX

An awareness session was conducted to highlight the learning from past process safety incidents in the maritime industry and the importance of process safety management to prevent such incidents from happening. This session was timely in view of the Group-wide roll-out of Process Safety Management Manual to strengthen operational safety control barriers.



## SAFETY AWARDS



### 40TH MALAYSIAN SOCIETY FOR OCCUPATIONAL SAFETY AND HEALTH (MSOSH) AWARDS 2022

MISC Maritime Services Sdn Bhd (MMS): "Grand Award" for Sungai Udang Port in Melaka under the Logistics and Transportations Sectors

Malaysian Maritime Academy also known as Akademi Laut Malaysia (ALAM): "Gold Merit" under the Educational Sectors

Eaglestar Shipmanagement (L) Pte. Ltd. (Eaglestar): "Gold Class 1" under the Logistics and Transportations Sectors

Offshore Business - Malaysia Vietnam Offshore Terminal Limited (MVOT): "Gold Class 1" for its Floating, Storage and Offloading (FSO) asset, the FSO Orkid, under the Petroleum, Gas, Petrochemical & Allied Sectors

Offshore Business - FPSO Ventures Sdn Bhd: "Gold Class 1" for its Floating, Storage and Offloading (FSO) asset, the FSO Puteri Dulang, under the Petroleum, Gas, Petrochemical & Allied Sectors

Malaysian Marine and Heavy Engineering Sdn Bhd (MMHE): "Gold Class 2" under the Petroleum, Gas, Petrochemical & Allied Sectors



### CHAMBER OF SHIPPING OF AMERICA (CSA)

48 vessels received the Jones F. Devlin Awards



### TANKER SHIPPING AND TRADE AWARDS

Eagle Valence won the Tanker of the Year Award 2022

## HEALTH

**5,524** seafarers crew change conducted

**300** HEPA air cleaners installed in MISC headquarters

**100%** seafarers and shore employees were vaccinated

The Group remains vigilant and has continuously implemented all necessary COVID-19 mitigation measures in accordance with Standard Operating Procedures (SOP) issued by the Ministry of Health Malaysia and regulators of home countries where we operate such as staggered work hours and lunch breaks, employees to observe the Rule of 3 at all times (wear a face mask, observe 1-meter physical distancing and maintain hand hygiene) and regular workplace sanitisation. Inspections of installed True HEPA air cleaner units are conducted regularly to ensure clean indoor air quality.

Although physical events, meetings and trainings are allowed, where practicable, employees are still encouraged to use virtual platforms. However, since 1 April 2022, further relaxations of COVID-19 SOPs were announced and implemented accordingly. With relaxation of SOPs by the Health Authorities, only employees who were fully vaccinated and did not exhibit flu-like symptoms are allowed to enter office premises. International business travellers shall observe SOPs implemented by the country visited.

Employees returning from international business travel are required to observe COVID-19 SOP developed by local authorities. All seafarers and offshore crew are also required to undergo COVID-19 testing during sign-on and sign-off (joining and leaving the vessel). In 2022, we conducted crew changes for 5,524 seafarers. We also signed the Neptune Declaration on Seafarer Wellbeing and Crew Change in 2021, a worldwide call to action to end the unprecedented crew change crisis caused by COVID-19.

Continuous advisories are sent out to the employees on strict adherence to the SOPs. Online programmes are also carried out to ensure employees physical and mental wellness and well-being.

## OCCUPATIONAL HEALTH AND WELL-BEING PROGRAMMES

Employees are invaluable assets to MISC and ensuring their health and well-being is our priority. In our efforts to help employees cope with post COVID-19 pandemic challenges that may have detrimental effects to both mental and physical health, we have rolled-out numerous activities promoting active living, healthy eating and mental wellness. We have

conducted a series of healths talks, mindfulness classes, virtual walking challenges, online workout classes, and regular leaders' engagements sessions to promote physical, mental, emotional and spiritual well-being. The following are the three focus areas and its initiatives as part of our flagship b-HSSE programme.

# MIND



## HEALTH TALKS

We held a series of health awareness sessions to raise employee awareness on several health matters. Medical specialists and health professionals were invited to provide technical guidance and tips on health and wellness. In 2022, three health talks were organised by Group HSSE on the following topics:

- Living with COVID-19, what's next?
- Unlocking peak performance and fulfilment with Resilience
- Nutrition to Support Immunity



## MINDFULNESS MONDAY

Our first Mindfulness Monday Programme in 2021 was a success and due to the overwhelming response, we continued our mindfulness training this year with 59 participants. The key takeaway from the programme is the art of paying attention to the present moment. By practicing this concept, employees were able to recognise and respond to their physical, mental and emotional state, ultimately helping build employees' personal resilience to better navigate challenges in both work and personal matters.



## EMPLOYEE ASSISTANCE PROGRAMME (EAP)

MISC advocates a holistic wellness model which recognises that wellness influences various aspects of personal health. MISC myFriends is an Employee Assistance Programme in partnership with Naluri, a Malaysian digital healthcare provider, to provide our employees with pioneering next-generation digital therapeutics through digital health coaching and support. Through the MISC myFriends programme, employees have access to:

- Careline**  
a dedicated helpline where employees can reach out to certified counsellors who are available 24/7. Conversations between employees and counsellors were kept private and confidential.
- Digital Coaching**  
a structured online programme to guide and coach employee towards health and wellness.
- Remote Counselling and Consultation**  
employees may sign-up for counselling sessions with health professionals via virtual platform or face-to-face.



## MENTAL WELLNESS POCKETBOOK AND TOOLKIT



The impact of the COVID-19 pandemic on the general population's mental health has been well researched since the beginning of the pandemic. In addition to the fear of infection our employees were also exposed to other stressors including stringent public health measures imposed by the Authorities, physical distancing, isolation and quarantine.

A Mental Wellness Pocketbook and Wellness Engagement Toolkit were developed to provide a guide for employees to better manage difficult situations that may have negative impacts on their mental health.

## WELLNESS ENGAGEMENT TOOLKIT

- 01**  
Choose a topic
- 02**  
Conduct the session
- 03**  
Gather feedback
- 04**  
Log activity

**24/7 dedicated helpline available**

**Physical or virtual counselling session available**

## MOVE



### MISC GROUP WALKING CHALLENGE

In addition to the PETRONAS' virtual walking challenge which kicked off in 2019 as part of its MESTIFit4Health flagship programme, we have introduced MISC Group Walking Challenge, a three-month walking challenge from July to September 2022. The programme challenges participants to walk 10,000 steps a day to reduce the risk of cardiovascular diseases.

This year, 1,124 employees participated in the individual category along with 68 teams, with five employees in each team. The top 10 individuals and top three teams were rewarded cash prizes amounting to USD 2,460. In total, our employees have marked 274,671,062 steps during the programme.



**274,671,062**  
steps were recorded by a total of 1,124 employees



### WORKOUT WEDNESDAY SESSIONS

Wednesday is Wellness Day at MISC. In efforts to encourage and facilitate our employees coming back to work, we replaced the virtual workout session with a face-to-face physical workout session at our in-house gym facility after COVID-19 restrictions were lifted. Qualified fitness trainers hosted various workouts such as Zumba, Yoga, High-Intensity Interval Training (HIIT) and many more every Wednesday.

In addition to physical workout sessions, we also launched Video on Demand (VOD) to assist and encourage employees to stay active wherever they are. A total of ten exciting High Impact Interval Training (HIIT)/Circuit training workout videos were purchased from our Corporate Fitness partner and shared with MISC Group employees. Employees were also encouraged to involve their families and friends to participate in the online workout sessions.

## MUNCH



Healthy lifestyles begin with healthy eating. To promote eating healthy among our employees, we provided healthy snacks such as nuts and raisins, sugar-free drinks and water during company meetings instead of the traditional local delicacies which are high in calories and sugar. We also installed a coffee machine in all pantries at Dayabumi offices. These are all sugar-free.

### FATIGUE RISK MANAGEMENT

Safety and productivity of an employee at work is closely related to the employee's health. A well-rested and alert employee is critical in ensuring safe and productive operations. To prevent fatigue-related incidents, MISC has developed a guideline which prescribes the Hours-of-Service Limits (HSL requirement for shift-workers and supervisors).

The MISC Group Fatigue Risk Management Programme (FRMP) involves the following process:



### FOOD AND WATER SAFETY

The objective of the MISC Group's food and water safety programme is to ensure food safety and quality in preventing food and water-borne illnesses during company organised events. In-house caterers and external caterers providing catering services shall adhere to our standards and guidelines that include:

- Registration of catering services as per Countries' requirement;
- Catering facilities shall have valid certifications by the relevant local authorities;
- Food handlers have valid vaccination as per Countries' requirement; and
- Food handlers have valid training certificates on Food Safety by accredited training providers.

Since 2019, all in-house caterers in MISC facilities in Malaysia have received the "Bersih, Sihat dan Selamat" (BeSS) certification by the Ministry of Health providing clean, healthy and safety assurance on food and water services. Review and BeSS certificate renewal is performed two-yearly by the Health Authority.

### FITNESS TO WORK PROGRAMME

The Fitness to Work programme includes medical assessments performed by medical specialists (Occupational Health Doctors, Flag-state Doctors) to ensure employees are fit to perform specific jobs or tasks.

#### AT MISC GROUP, THE PROGRAMME IS GUIDED BY THESE PRINCIPLES:

- 1** Appropriate methods to detect significant health risk which may affect employee's ability to perform specific job/task
- 2** Performed by medical specialists e.g. Occupational Health Doctor, Flag-state Doctors
- 3** Record keeping and maintaining data privacy as per local regulatory requirement
- 4** Compliance to countries' legislations and industry's standards/best practices

### SUBSTANCE MISUSE CONTROL PROGRAMME

To eliminate the use of illegal substance and misuse of drugs in the facilities, MISC has established a Substance Misuse Control (SMC) Guidelines and updated its Policy Statement. The SMC programme consists of the following:

- Policy Statement;
- Standards and Guidelines;
- Testing programme;
- Rehabilitation Assistance programme;
- Consequence Management; and
- Awareness and training.

#### MISC GROUP SUBSTANCE MISUSE POLICY

We reviewed and refreshed MISC Group Substance Misuse Policy in 2022.

Please download a copy of our revised policy from our corporate website.



INDUSTRIAL HYGIENE



**Key health element chemical, physical (includes noise, radiation, vibration, lighting), psychosocial, ergonomic and biological risks**



**8 HRAs conducted in 2022**

HEALTH RISK ASSESSMENT

Health risk assessment (HRA) is an integral process in ensuring employee health and safety at the workplace. The assessment helps MISC to assess health risks that may be present in our facilities and operations, and we have to ensure appropriate controls are in place to safeguard our employee's health. Key health elements assessed are chemical, physical (includes noise, radiation, vibration and lighting), psychosocial, ergonomic and biological risks. MISC conducted 8 HRAs in 2022 which covers the following offices and facilities. Recommendations under these HRAs have helped us to improve the health and well-being of employees and contractors at our facilities.



**Offices:**  
Menara Dayabumi, AET Houston, AETO Galveston, AET Brazil



**Assets and facilities:**  
FPSO Kikeh, FSO Orkid and FSO Puteri Dulang and AETO Galveston support vessel



ERGONOMIC PROGRAMME

We continued our ergonomic journey in 2022 with capacity building conducted by professionals and launched our office ergonomic e-learning module.

ERGONOMIC INTERNAL CAPABILITY BUILDING

As part of ensuring good quality of ergonomic assessment carried out at workplace, MISC has invested in resource by sending representatives from each entities / business units to attend an initial (basic) and advance Ergonomic Trained Person (ETP) courses by Malaysia Department of Occupational Safety and Health (DOSH). The objectives of the training are to ensure we perform an effective quality assessment and develop intervention plans to reduce impacts on our employees' and contractors' health. To date, eleven ETPs have successfully completed their courses and registered under DOSH.

LAUNCHING OF OFFICE ERGONOMICS E-LEARNING

During the year under review, the HSSE teams across the Group came together with the help of an external consultant, and collaboratively developed an office ergonomic e-learning module. The collaboration will ensure its relevancy across the organisation. The e-learning is aimed at educating our employees on the importance of office ergonomics such as the correct sitting position, effective seating arrangement, usage of proper chairs and desks to name a few. These modules are able to directly promote Generative HSSE Culture in our workplace.

INDOOR AIR QUALITY

Research by the World Health Organisation (WHO) shows that we spend almost 90% of our time during work hours. As such, it is imperative to ensure that we have good indoor air quality in the workplace. In order to ensure our employees are safe while in our premises, we have undertaken initiatives such as periodical indoor air quality awareness and parameter checking.

We developed e-learning awareness on the importance of indoor air quality, which provided insights on tell-tale bad indoor air quality at the workplace, legal requirements, and channels to raise concerns related to indoor air quality.

To ensure our air quality is in compliance with the Industrial Code of Practice for Indoor Air Quality requirement, we conduct periodical indoor air quality parameter assessments internally on a quarterly/yearly basis. An immediate intervention will be carried out if there is any deviation detected.


NOISE AND HEARING PROGRAMME

MISC Noise and Hearing conservation programme includes identification of excessive noise at workplace, noise monitoring, audiometry and record keeping.


MISC ensures that the identification of noise levels is carried out at each of our facilities to meet local regulations as well as maritime related requirements. In addition, employees/ seafarers who may be exposed to excessive noise will need to undergo audiometry and attend awareness training on noise and hearing conservation. Where possible, noise abatement measures are implemented to reduce noise within permitted limits and PPE (earmuffs and earplugs) are provided to affected employees and visitors.

**INDUSTRIAL HYGIENE PROGRAMME**

We performed various Industrial Hygiene activities in 2022 to protect employee health and safety in accordance with regulatory requirements. Our activities included:




**Monitoring noise exposure at Menara Dayabumi allows us to introduce appropriate control measures to protect employees from noise hazards;**



**Conducting a Chemical Health Risk Assessment (CHRA) at Menara Dayabumi to ensure safe chemical storage and handling;**



**Monitoring chemical exposure at our Marine & Heavy Engineering Business (MHB) to assess and mitigate related health hazards; and**



**Testing the Local Exhaust Ventilation system at several of our various entities and assets: MHB, ALAM, MAMPU 1, FSO Orkid, FSO Puteri Dulang and FSO Mekar Bergading. The results allow us to remove airborne contaminants from the workplace through effective engineering control.**

**NURSING ROOM**



We provide mothers room in Menara Dayabumi. These accommodations are available throughout the day for nursing mothers.

**GYM**



Working out at the gym releases norepinephrine hormones which results in reduced stress, enhanced mood, and better brain function. In 2022, we reopened our newly revamped gym in our Menara Dayabumi office. We also have a dedicated instructors to help guide our employees in their working out routine.

**JAMMING ROOM**



Another way of destressing is through music. Our jamming room in Menara Dayabumi is accessible to our employees, complete with a jamming equipment such as guitar, drum, sound systems and others.

**POWER NAP ROOM**



A power nap is a short sleep that terminates before deep sleep. Ideally, power nap ranging from about 10 to 30 minutes. Research shows that short afternoon nap can help us feel less sleepy and lead to improvements in our mood, alertness, reaction time as well as focus and concentration which eventually will lead to increase in productivity in our work.

To encourage the benefits of power nap, our GAS business segment has embarked on initiative to support the well-being of its employees by launching a pilot power nap room for its Menara Dayabumi based employees. The convertible meeting room to power nap room was equipped with four reclining beds with a conducive quiet and dark environment.

**SECURITY**

MISC Group's Security Management System (SeMS) adopts international standards and guides the implementation of security measures across the Group. SEMS identifies, evaluates, and manages security risks to employees, assets, information, and our reputation. We ensure that security policies, standards and guidelines are followed throughout all operations. We promote security awareness and exercise best security practices. Mitigating security risks ensures that our business operations are conducted in a safe and secure environment.

We investigate all security incidents, fraud-related offences and other breaches accordingly as outlined in our Code of Conduct and Business Ethics. We also place great importance on processes to protect the workforce, premises, facilities, equipment and information from threats, dangers or risks (physical or commercial) through criminal or malicious acts, whether wilful, negligent or otherwise to prevent major security incidents from occurring.

We continue to implement our Security Policy throughout the year and adopted an effective security management system by:

**MISC GROUP SECURITY POLICY**

Please download a copy of our Security policy from our corporate website.



**01** Conducting assurance and investigation processes

**02** Providing regular security analysis and travel advisory for the Group to ensure the safety and security of our people, environment, asset and reputation

At MISC, our Corporate Security consists of two units, namely Risk Assurance and Corporate Investigation Unit:

<p><b>RISK ASSURANCE UNIT</b></p>  <p>conducts periodic security audits and assessments to identify potential security-related risks across the Group</p>	<p><b>CORPORATE INVESTIGATION UNIT</b></p>  <p>helps management fulfil its responsibilities of protecting resources and employees</p>
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As MISC Group shipping activities stretches beyond Malaysia territorial waters, maritime security is one of our main security focus areas. Several incidents reported around the world such as armed attack, theft incident and piracy. As part of our normal practice, onboard crews are advised to remain vigilant and maintain strict anti-piracy/ robbery watch and measures as per ISPS Code/ SSP/ BMP especially while navigating in high-risk waters.

**KEY SECURITY PROGRAMMES IN 2022**

Various initiatives have been conducted to engage with internal and external stakeholders as a way of information transfer. We have developed a security framework to provide guidelines and necessary information on the vulnerabilities and subsequently established mitigation measures that can be taken to prevent any potential threats.

OPERATING SAFELY

M2S2 COMPLIANCE ASSESSMENT

Mandatory Minimum-Security Standards (M2S2) is the commitment set towards conducting our business in a responsible and reliable manner. SEMS acts as the guideline to facilitate consistent and effective implementation of sustainability practice Groupwide.

EKSESAIS NAGA EMAS

Navy and merchant ships annual exercises were conducted onboard, as for year 2022 it was conducted on Seri Camar. The objective of this exercise is to strengthen the coordination between MISC and Royal Malaysian Navy (RMN) in combatting maritime violence. This exercise also promotes cooperation between RMN and non-military agencies in bolstering maritime security.

SECURITY AWARENESS PROGRAMME

Fraud, drug abuse, conflict of interest may pose a threat at sea and shore. Awareness programmes are conducted where employees are reminded on the Code of Conduct gravitated to the interest of the company and not personal interest. Apart from that MISC also ensures that family of its employees stays safe by imparting awareness on violence against children.

STRATEGIC ENGAGEMENT

Collaboration development was conducted with the Naval Intelligence Department, where information were shared and discussed as a significant source for critical infrastructure security and resilience. This meeting also looked into the way forward to establishing a platform to improve intelligence sharing between the RMN, Naval Intelligence Department (NID) and MISC Group.

SECURITY GAP ANALYSIS

Security gap analysis and industrial benchmarking are conducted in our efforts to continuously improve our security performance. It allows comparison between two or more approaches and offers insights into correlated relationships.

SECURITY ADVISORIES

Security alerts and advisories provide the most recent security concerns in terms of corporate security, weather alerts, geopolitical risk, travel restrictions, street rallies, and Movement Control Orders that are relevant to MISC Group. Additionally, it offers information on security risks, vulnerabilities, and safety measures.

SECURITY PROACTIVE REVIEW ANALYSIS

In addition to the general investigation process, a proactive form of investigation has been introduced namely Security Proactive Review and Analysis (SPRA) to ensure that potential security risks are attended to. Such method is used in situations when it is challenging to identify the execution of specific acts due to their latency, hidden effects of unreported incidents, and other factors (victimless crime). Such methods will be able to:

Proactively identify, evaluate, and manage security risks on our people, asset, information, and reputation:

- To verify the risk of potential occurrence of bribery and corruption based on the key risk exposure areas identified in MISC Group Bribery and Corruption Risk Assessment Report
- To investigate the probability of potentially fraudulent activity within the scope of an assigned investigation. This also includes cases reported through our Whistleblowing channel
- To assess the potential of similar occurrence of maritime fraud within MISC Group based on our internal assessment as well as from research conducted globally

Able to create awareness on possible security threats based on the identified risks and exercise best practices

- To identify areas for improvement for the potential MISC CoBE breaches in relation to the related projects and associated activities

Ensure that our business operations are conducted in a safe and secure environment

HSE AUDIT AND ASSURANCE IN 2022





MISC Group HSE conducts independent HSE audit and assurance on the operational condition of MISC's assets and the effectiveness of the HSE Management System (HSEMS). These audits and assurances are also extended to activities of our business partners as well third-party service providers.

The audit and assurance process includes obtaining reasonable assurance by reviewing and evaluating the adequacy and effectiveness of the established controls and adherence with relevant laws and regulations. The audit and assurance findings are analysed and contribute as areas of improvements on our MISC's policies effectiveness.

The following are the objectives of our audit and assurance process:

- Increase focus on specific aspects of ship/floating asset safety;
- Verify and assess risk controls and uncover issues that impact on effective implementation of risk control towards improving HSE performance; and
- Safeguard the people, environment, asset and organisation's reputation.

Our audit and assurance process are categorised as follows:

 <p>Focus Audit</p>	<p>Conducted on vessels with a focus on specific issue</p>	<p>The scope of the audits is based on the identified elements of the Oil Companies International Marine Forum (OCIMF) Vessel Inspection Questionnaires</p>	<p>Number of vessels sampled are between 10 to 16 per annum</p>
 <p>Condition Survey Audit</p>	<p>Conducted on vessels managed by third party ship's managers, Floating Production Storage and Offloading (FPSO), Floating Storage Offloading (FSO) and Floating Storage Regasification Unit (FSRU)</p>	<p>Inspections are conducted at two-year intervals and the scope of the inspection is based on the 12 Elements of the OCIMF Vessel Inspection Questionnaires, Company's Operations Manuals and all relevant legislations applicable to the assets</p>	
 <p>HSEMS Assurance</p>	<p>Conducted on MISC Group entities and third-party service providers</p>		
<p><b>MISC Group entities</b></p> <ul style="list-style-type: none"> <li>Assess the adequacy and effectiveness of the MISC Group operations HSE Management System</li> <li>Conducted on yearly basis</li> </ul>		<p><b>Covers the following topics:</b></p> <ul style="list-style-type: none"> <li>Leadership and commitment</li> <li>Policy and Strategic Objectives</li> <li>Organisation, Responsibilities, Resources, Standards and Documents</li> <li>Hazards and effects management process</li> <li>Planning and Procedures</li> <li>Implementation and Monitoring</li> <li>Assurance</li> <li>Management Review</li> </ul>	
<p><b>Third-party service providers</b></p> <ul style="list-style-type: none"> <li>HSE related governing documents and internal procedures pertaining 8 Elements of the HSEMS</li> <li>Conducted every 2-3 years rotationally</li> </ul>			
 <p>First Line Assurance</p>	<p>Conducted on MISC Group operations based on HSE Management System and HSE Functional Assessment</p>	<p><b>Covers the following HSE topics:</b></p> <ul style="list-style-type: none"> <li>Chemical Management</li> <li>Health Assessment for Fitness to Work</li> <li>Substance Misuse Control</li> <li>Medical Emergency Response</li> <li>Management of Change</li> <li>Emergency and Crisis Management</li> <li>Accident Management</li> <li>Assurance</li> <li>Security</li> <li>Environment (GHG &amp; Waste Management)</li> </ul>	
<p>The HSE Functional Assessment is a self-assurance assessment programme conducted by individual business units, subsidiaries and service units</p>			



**AUDIT AND ASSURANCE CONDUCTED IN 2022**

In 2022, our Group HSSE Audit & Assurance team conducted a total of 53 Audits & Assurances (17 focus audits, 4 condition surveys, 15 ship recycling yards, 3 group entities and 14 third-party HSEMS assurances). Since the onset of the pandemic in 2020, most of our assurance assignments have been conducted virtually through our Remote HSSE Assurance Programme. With the ease of control movement order in 2022, we conducted a mix of physical and remote audit and assurance.

**SHIP RECYCLING FACILITY ASSESSMENT**

MISC has taken a crucial first step to voluntarily support the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships. In 2009, the Hong Kong Convention, which was developed over three and a half years in collaboration with the International Labor Organisation (ILO) and the Basel Convention's parties. It covers matters of security, suitable working conditions, the environment, and how to handle dangerous substances. However, not enough countries have ratified the convention for it to go into effect.

In the transitional period before the convention enters into force, it is important for us to engaged with a ship recycling yards that comply with the Hong Kong Convention's requirements where ships can be recycled in a responsible and sustainable manner. In 2022, we visited 15 ship recycling yards in Alang, India to assess the conditions and suitability of the yards. Based on our assessment, we have shortlisted a list of preferred ship recycling yards that comply to the IMO Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships and European Union Ship Recycling Requirement (EU SRR 1257/2013).

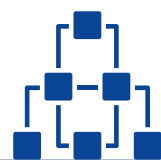
**BUSINESS CONTINUITY PLANNING**

Business Continuity Management (BCM) increases our capacity to recover and continue operating critical business functions during any disruption. Established through the BCM process, the Business Continuity Plan (BCP) enhances our preparedness to recover and restore essential business functions within a reasonable time to sustain business activities and minimise stakeholder disruptions.

We frequently simulate test scenarios to validate the effectiveness of recovery strategies and maintain a high level of competence, readiness and preparedness as identified in the BCP. Our annual Business Impact Analysis and recovery plan reviews ensure that any changes in the organisation are risk-assessed, analysed, and mitigated. In 2022, we focused on instilling awareness and strengthening communication on CM and BCM. Therefore, a series of trainings and exercises were organised throughout MISC Group which included Cybersecurity, Oil Spill and Crisis Communication.

Our established flexible working arrangement enabled all office employees to work remotely from home. We accelerated the deployment of digital platforms for communication and collaboration to ensure teams could work remotely and effectively. The recent COVID-19 pandemic has proven that office employees are able to work as efficient as working in the office with the deployment of digital platforms.

Operation resilience developed over time and well-executed recovery plans ensure that we provide uninterrupted services globally to customers and other internal and external stakeholders.



**MISC GROUP MANAGEMENT FRAMEWORK**

MISC Group has established good governance and continuously update our policies, procedures, systems and processes to strive for high business ethics and conduct.

During the year under review, we developed the MISC Group Management Framework (MGMF) which outlines MISC Group's organisational structure, operating model and governance framework.

The MGMF aims to provide the first point of reference with guiding principles for the following areas:

- 01**  
CORPORATE GOVERNANCE AND COMMUNICATION
- 02**  
VALUES
- 03**  
DECISION-MAKING PHILOSOPHY
- 04**  
APPROACH TO GOVERNANCE MANAGEMENT STANDARDISATION

The newly developed MGMF applies to the MISC Group of companies. Numerous sharing sessions have been conducted across the Group to familiarise our employees with the MGMF.

# OUR PEOPLE, OUR STRENGTH

## TALENT EXCELLENCE

### Our Commitment

- To future-proof talent and leadership agenda by accelerating talent potential
- To build a performance-driven workforce in an engaging and inclusive work environment

### Our Contribution to UNSDG



Promote female participation in the maritime industry and ensure women's full and effective participation and equal opportunities for leadership at all levels of decision making



Promote equal opportunities in the workplace irrespective of age, gender, nationality, and cultural background

At MISC, our people are our greatest asset, as they are key to deliver our strategy as well as realising our MISC 2050 ambition. Our focus remains on establishing strong employee engagement, creating an engaging and inclusive work environment, future-proofing our talent, and building a sustainable and robust leadership bench strength.



## OUR PEOPLE, OUR STRENGTH

### HUMAN CAPITAL VALUE CREATION

#### Career Management Framework

- Career Management Portal
- TMS Internal Vacancy

#### Coaching Culture

- Timely, quality career conversations

#### Succession Planning

- Building a sustainable talent bench strength
- Leadership Pathway - Leader+ Series

#### Agile Policy

- Up-to-date policy to support strategy and initiatives

#### Leadership & Functional Competency Framework

- Synergy with Talent Management System and Career Management Framework

#### Leadership Pathway - Signature & Leader+ Series

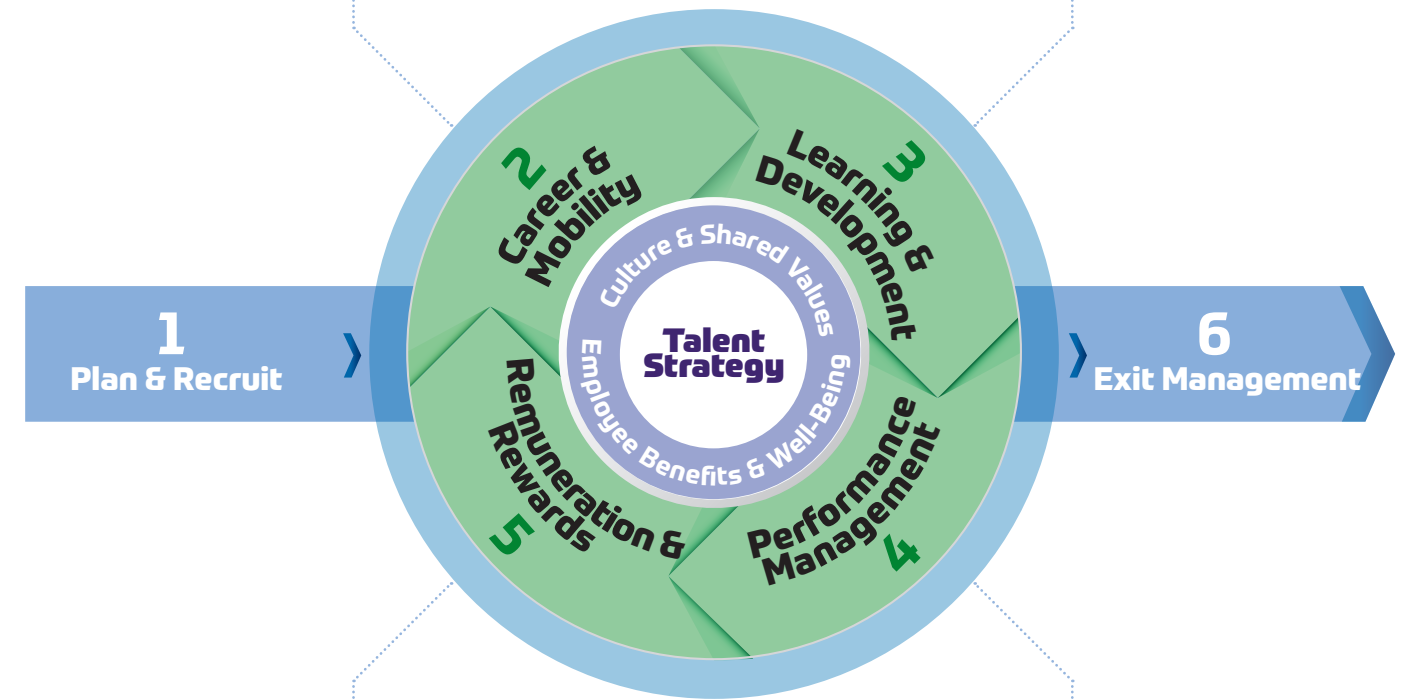
#### Structured Functional Curriculum

#### Talent Management System (TMS)

- 10% formal, 20% learning from others, 70% on-the-job
- Self-driven development
- E-learning
- Learning recommendations tailored to you

#### Coaching Culture

- Timely, quality career conversations



#### Differentiated Reward

- Higher variable pay for outstanding talent

#### Flex Reward

- Innovative packages that match market

#### Total Reward

- Beyond monetary reward

#### Agile Policy

- Up-to-date policy to support strategy and initiatives

#### Enhanced Performance Management Process

- Transparent, honest and fair performance review

#### Coaching Culture

- Timely, quality career conversations

#### Driving High-Performance Culture

- Reward the best, manage the tail

#### Agile Policy

- Up-to-date policy to support strategy and initiatives

## CULTURAL BELIEFS AND SHARED VALUES

Individual and team behaviours are influenced by our Cultural Beliefs and Shared Values, which help us sustain a solid and committed workforce. In addition to being results-driven, they also establish shared success, accountability, collaboration, trust, and transparency. Our Shared Values defines our talent's unique characteristics, one that embodies Loyalty, Integrity, Professionalism, and Cohesiveness.



### ECHO+

The ECHO+ online feedback platform helps to promote culture of feedback exchanges to strengthen cultural beliefs among employees. Real-time feedback through mobile apps enables managers to have insightful and proactive discussions with employees regarding their professional growth, which fosters more engagement and boosts productivity.

### PETRONAS ORGANISATIONAL CULTURE SURVEY

The PETRONAS Organisational Culture Survey (POCS) is one of MISC's engagement tools that was initiated to understand what matters to our people, what drives them and ways we can improve to develop an even stronger workplace culture that powers our business growth.

In November 2022, POCS was done using a simplified tool which enabled us to receive immediate feedback, in line with our aspiration to have a more frequent engagement survey. The survey garnered a record response rate of 95%.

The recent survey showed engagement favourability of 82%, with 9 questions scoring above the global benchmark. Survey results also denote that MISC Group scored high in employee engagement (80 out of 100 points), integrity (84) and alignment to the company's vision (85). In addition, employees are supportive of our effort in sustainability (79), employee well-being (76) as well as workplace safety (76).



## PLAN AND RECRUIT

### STRATEGIC WORKFORCE PLANNING

Our Strategic Workforce Planning aligns human capital needs with the business direction and optimises our manning requirement and manpower cost. The five-year strategic plan allows us to look at future resource requirement, skill gaps, and development. In addition, we are able to determine the right intervention plan to ensure manning sustainability, specifically whether to recruit, rent, redeploy, retrain, or redefine.

We have also started to collect and articulate data to identify skill gaps, evaluate recruiting channels, screen candidates and assess talent supply and demand, monitor our attrition

rate as well as conduct competitive intelligence. In addition, we believe this work process will be useful to further improve employee experience, better inform employee training and development efforts, promote fair treatment of employees and eliminate bias.

All our hiring policies are compliant with local and international labour regulations as applicable. The Group does not condone the hiring of child labour or forced labour, and all third parties who conduct work for or on behalf of the Group are subject to applicable regulations.

## CAREER AND MOBILITY

MISC aspires to be an inclusive workplace that values equal opportunity, celebrates talent diversity, and allows employees to chart their own career path. Regardless of gender, age, ethnicity, nationality, or religion, our remuneration structure is based on pay-for-job principle and merit. Our differentiated rewards programme drives a high-performance culture that recognises efforts and results which helps retain our talent.

We also develop employee's leadership and functional qualities through robust training programmes, short- and long-term assignments, and mobility between the many roles in MISC Group.

### CAREER MANAGEMENT FRAMEWORK

In 2022, we launched the Career Management platform to promote employee self-driven career pathing. Employees are provided with the tools they need to explore the many career opportunities within MISC Group, assess their readiness based on the established Leadership and Functional competencies, plan and execute their development needs, and ultimately apply for available positions within the Group.

In addition, we established Technical Management Development Committee (TMDC) to give more focus to the development of our technical professionals and engineers.

### SUCCESSION PLANNING

Succession planning is a critical aspect of our sustainable business. It is necessary for all organisations to have a consistent and dependable pipeline of talented professionals ready to fill critical roles. Our robust succession planning exercise and talent development earmarks potential successors and high potentials which enables business continuity. We ensure that our pool of talent is equipped with the necessary leadership and functional competencies, through our Leadership and Functional Competency Framework.

### Retention and Successor Ratio Targets



## LEARNING AND DEVELOPMENT

Our Capability Building agenda is built on three strong foundations, which are:

- Competency Framework;
- Leadership Pathway and Functional Curriculum; and
- Career Management Framework.

We thoroughly map the competency requirements for each role and evaluate the incumbent. Each position will require both leadership and functional competency, resulting in a holistic approach to quality that we seek for each role. The competency assessment outcomes are translated into learning and development programmes to fulfil current and future development needs.

Our upskilling and reskilling strategy encompass technical skills, long-term transferable skills as well as adjacent skills, to meet the demand in rapid advancement of technology and the maritime industry's commitment to Net-Zero Greenhouse Gas Emission by 2050. We have formed a group of leaders from various technical verticals who keep a close watch on changing industry trends and collaborate in learning interventions.

MISC has introduced Leadership Pathway, a structured leadership development programme based on the established Leadership Competency. The programme aims to build and develop a pool of enterprise leaders and strengthen leadership bench strengths in MISC. Leadership Pathway was developed in collaboration with renowned learning providers and business schools such as INSEAD, Leaderonomics and Asia School of Business (ASB), consist of two unique tracks – Leader+ Series and Signature Series.

- Leader+ Series is a six-month accelerated development programme that aims to equip MISC Group's Successors and High Potentials with new skills, experience, and perspective, enabling them to immediately drive impact at work, close their gaps and increase their readiness to take bigger roles. The programme is delivered in a blended format that combines experiential and cognitive elements such as engaging lectures, exercises, case studies, simulations, role play and action learning projects.
- Signature Series caters to large groups with the goal of providing our employees with critical leadership competencies. Throughout the one or two-year programmes, participants engage in a variety of engaging activities, lectures, and role play.

Several functional curriculums were established based on the Competency Framework that complement the Leadership Pathway programme. Other than providing the baseline understanding of each employee's role, the functional curriculum also aims to upskill employees on technical and emerging skills such as digital fluency and low-carbon transition.

We strongly believe in supporting our employees' career progression. Filling 36% of shore vacancies internally in 2022 demonstrates the success and agility of our competency and career progression programmes.

Our seafarers are also steadily moving up their career ladder with 37 Senior Officers, 128 Junior Officers, 3 Other Officers, 93 Trainees and 30 Ratings promoted in 2022.

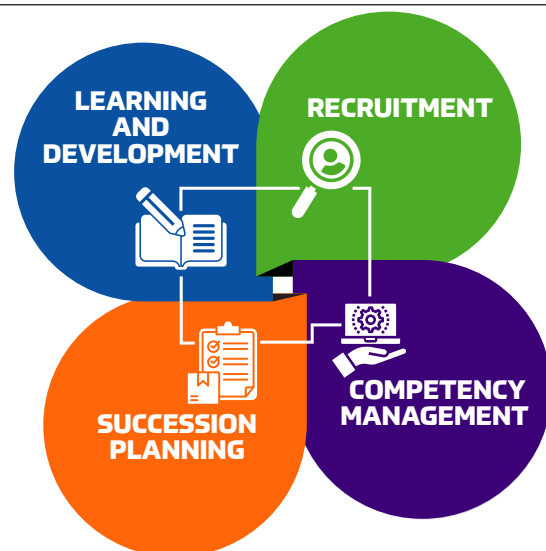
### TALENT MANAGEMENT SYSTEM

The Talent Management System (TMS) is an online learning platform that caters to employees' development needs as well as ensuring that Group-driven e-learning content such as Sustainability, Compliance and Safety are assigned automatically to every employee. A wide range of topics are available from reputable providers such as Harvard ManageMentor and SkillSoft. This information is accessible anytime, anywhere and on any device.

Our Leadership and Functional competency assessments are conducted via TMS and the results are leveraged to identify employees learning and development opportunities. With the ability to track, review and analyse the competency gaps, employees are encouraged to self-drive their development.

Apart from that, we have centralised succession planning in TMS, which acts as a data repository and helps potential successors track their progress.

#### Talent Management System (TMS) Four Main Modules



## KEY DEVELOPMENT FOR SEAFARERS

As one of the leading global providers of international energy related maritime solutions and services with a modern and diversified fleet of vessels, a significant portion of our human capital comprise of seafarers who execute our business strategies on the high seas. Eaglestar is our Integrated Marine Services subsidiary which is responsible for managing our pool of seafaring employees.

To ensure a sustainable pool of seafarers with the right skill sets and knowledge to perform their job well, Eaglestar has in place a comprehensive human resource management programme that specifically focuses on seafarers. Employees training and re-training programmes, talent development, and succession planning are among the initiatives in place to boost

employees' competency levels, while simultaneously improving and expanding their proficiency and capabilities across various aspects of the business and operations. In 2022, Eaglestar invested a total of RM24.2 million in training and development programmes for seafarers.

Our approach on multiskilling focuses on building and expanding our crews' capabilities to ensure that they have the ability to operate more than one type of vessel, for example, very large ethane carriers (VLEC), LNG bunkering vessel (LBV), LNG carriers (LNGC), LNG dual-fuel and eco-friendly petroleum tankers and dynamic positioning shuttle tankers (DPST), LNG floating storage units (FSU) and modular capture vessels (MCV).

### SEAFARERS DEVELOPMENT PROGRAMMES

Our seafarers are being trained in their technical skills in order to be future-ready and to support the growing number of specialised vessels.

- 1. Future Ready:** In alignment with MISC's commitment towards Net-Zero Green House Gas (GHG) Emissions, we have progressively renew our fleet with greener vessels. To ensure career continuity and preparation towards low carbon transition, our seafarers are constantly upskilled to support our green vessels.
  - i. Oil to Gas Conversion Programme:** Reskilling of seafarers from the oil fleet to a greener gas fleet continues to be a key focus as this provides an interchangeable pool of crew that is capable of manning our growing and specialised fleet. In total, 11 Senior Officers, 37 Junior Officers, three Trainee Officers and 48 Ratings successfully underwent the programme.
  - ii. Capability Development for Dynamic Position Shuttle Tanker (DPST) and LNG Dual-Fuel Vessel:** Upskilling our home-grown talent and preparing them to operate our incoming fleet additions of DPSTs and VLCC LNG dual-fuel ships is integral to the career and personal development of our seafarers. Together with the Oil to Gas Conversion Programme, these efforts help reduce the risk of employment dislocations due to the low carbon transition.
  - iii. Navigation and Engineering Workshops:** Regular focused workshops conducted for Senior Officers enhance teamwork between the onboard Navigation and Engineering teams. With a focus on establishing behavioural change, Senior Officers are encouraged to be more proactive in addressing operational performance and highlighting issues, and improving their confidence to take decisive action and intervention when required.
- 2. Human Element:** Under this component, Eaglestar is steadfastly growing human capability through focused programmes that enrich non-technical skills.
  - i. Behavioural Competency Assessment and Verification Assessor Training:** Major industrial incidents suggest that the human element is one of its root causes. The ability to conduct operations safely and without incidents relies on human competency, which comprises technical skills (hard skills) and non-technical skills (soft skills). This programme enhances non-technical skills to instil a positive safety culture that promotes a safe working environment and prevents incidents.
  - ii. Mind Guardian Programme:** The Mind Guardian programme, developed in-house, raises seafarers' awareness of fundamental mental health issues. It equips them with the skills to recognise signals of well-being hazards to provide foundational support to colleagues, especially when they are sailing onboard vessels. This training aligns with the Neptune Declaration on Seafarer Wellbeing and Crew Change, of which we are signatories. This programme continued throughout 2022, with the aim of raising awareness among seafarers on basic mental health issues and to equip them with the skills to recognise signals of well-being hazards and to provide foundational support to colleagues, especially when they are sailing onboard vessels.

OUR PEOPLE, OUR STRENGTH

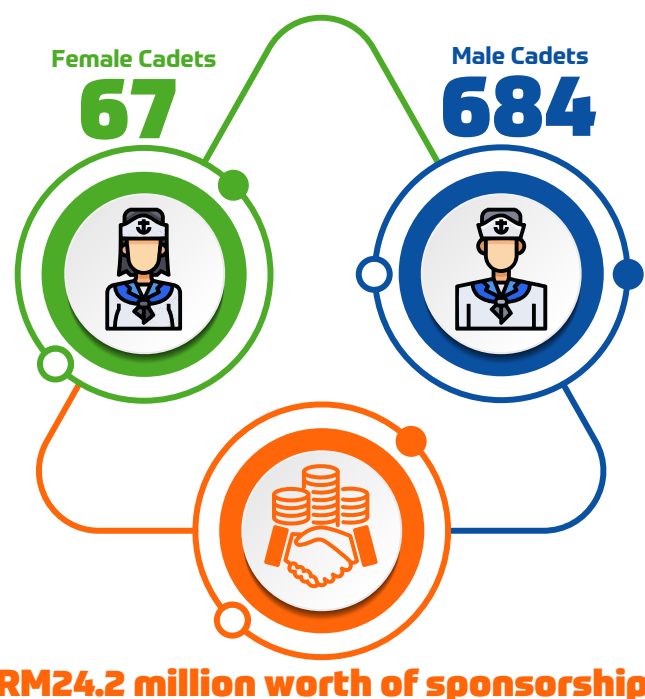
- iii. **Seminars and Conferences:** Engagements with seafarers continued with 163 seafarers attending two sets of Navigation and Engineering workshops, 77 attending webinar-based Ratings' Seminar and 174 seafarers attending Eaglestar's first hybrid Junior Officers' and Senior Officers' Focus Seminars. Nominated employees were also given the opportunity to attend conferences such as World Maritime Week 2022 and Maritime Professionals: Legalities of the New Norm in order to expand their network and update their knowledge on the maritime profession. In addition, physical workshops on Diversity & Inclusion were also conducted for the Malaysia and Singapore office.
- iv. **Shipman's Agreement Training**  
To better equip employees to changes arising from operating under the Agency Model, the Shipman's Agreement training was conducted for all shore-based employees. The programme highlighted the concept of Shipman, its best practices and risks, along with the importance of rights, obligations and care of operating under the agency model.
- v. **Competency Enhancement Training**  
Through a variety of focused programmes, Eaglestar is enhancing its people's capability and competencies, especially in enriching technical and non-technical skills. These include among others:
  - a. Project Management Professional (PMP) Certification Training – an industry recognised credential for project managers that demonstrates the experience, education, skills and competency required to lead and direct projects.
  - b. Tripod Beta Practitioner Training – An investigation framework and method for incident analysis leading to proactive process control measures. This programme aims to provide superintendents and nominated employees with skills on how to investigate and analyse operational disturbances.
  - c. Theoretical UNIC Controlled X-DF Engines Course – With the arrival of new vessels, participants were nominated for this programme to better equip them with knowledge and understanding of dual-fuel engines that will be in operation.

FACILITATING SEA TO SHORE CAREER ADVANCEMENT

On top of that, opportunities for our seafarers to transition onto a shore-based career are available as they are also exposed to shore development training whereby they go through a six-month to a year-based training in office-based tasks to understand the requirements of shore management of vessels and other related functions. This training effectively prepares seafarers for the transition from sea to shore careers. Unified Term and Conditions are in place across our fleet to ensure high retention rates which covers compensation packages that properly remunerate our people.

SUSTAINABLE POOL OF FUTURE SEAFARERS TALENT

Eaglestar and ALAM are collaborating to develop a pool of dedicated and specialised crew to create a sustainable pool of future seafaring talent. In 2022, Eaglestar in collaboration with shipowners, provided cadet sponsorship for a total of 751 students at ALAM.



PERFORMANCE MANAGEMENT

MISC, in its aspiration of building a high performing workforce, has introduced a refined performance rating scale that is commensurate with our rewards programme. The new rating scale acknowledges employees who demonstrate excellent performance within their peer group, deliver high quality results and display outstanding behaviour as required for the role.

HIGH PERFORMANCE CULTURE

We continue to promote a culture of trust and leadership effectiveness, where leaders provide a psychologically safe workplace and encourage courageous conversation. To ensure that employees are aligned with the organisation's goals, expectation setting conversation is initiated at the start of each year. In addition, we conduct mid-year and year-end performance reviews and competency conversations to ensure that all employees (both permanent and on contract) self-assess, reflect on their progress to date and close any potential gaps.

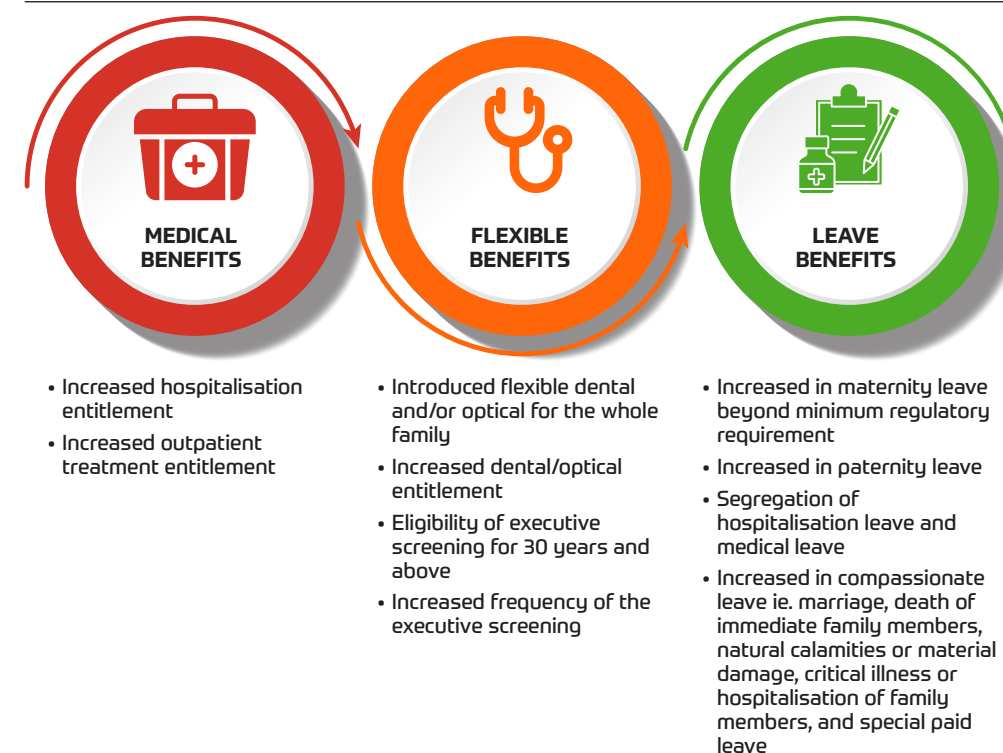
REMUNERATION AND REWARDS

MISC is committed to ensuring fair and competitive remuneration in alignment with our talent attraction and retention strategy. In order to ensure competitiveness in attracting external talents and retaining internal employees, our remuneration is reviewed on an annual basis to make sure employees are offered equitable wages in relation to the market. Emphasis has also been placed on fairness and balance with regards to remuneration for male and female employees based on their performances and work values. We believe that robust employee benefits can help us differentiate our business from competitors.

Our employee wages abide by all applicable laws such as working hours, minimum living wages, overtime hours and legally mandated benefits. We also compensate our employees fairly according to remuneration structures that comply with the Minimum Wage Order set by the governments of the jurisdictions where we operate. Refer to Performance Data section for details on our average wages.

In 2022, we revised our medical benefits, flexible benefits and leave benefits to remain competitive and provide benefits in line with employees' expectations.

Enhanced Benefits Introduced in 2022



## DIVERSITY AND INCLUSION

MISC strives to have an inclusive workplace by removing barriers and creating equal opportunities for all of our employees. Our three strategic priorities for Diversity and Inclusion (D&I) are to grow our diversity in gender, nationality and multi-generations, build an inclusive culture and work environment and drive leadership accountability.

We have made great progress in our commitment to D&I. In October 2021, MISC Group established its D&I Statement. Subsequently our D&I Policy was approved by the board of directors in April 2022. We have also established the overall D&I Journey Map and Aspirational Target, which looks at the following areas:



To keep up the momentum, various D&I activities and awareness sessions have been rolled out. In March 2022, 21 change agents were upskilled via Train-the-Trainer Workshops, who subsequently rolled-out the D&I Awareness Sessions across MISC. We also conducted the D&I Awareness Reinforcement module, incorporated as part of our HR Quarterly Engagement Sessions during the year under review.

Our D&I journey map encompasses all facets in the employee life cycle, from recruitment up until exit management. Aside from promoting diversity in the application process, our hiring managers and recruiters are trained to identify unconscious bias and how to address them. Employees go through D&I awareness programme, courageous conversations programme and sharing sessions that promote psychological safety at workplace. Employees are empowered to drive their career progression through our Career Management Framework, ensuring equal opportunities for all. Our D&I aspirational target ensures that our talent bench strength is diverse, inclusive, and sustainable.

Moving forward, MISC will continue its D&I journey with plans for D&I Embedment Programmes, promoting conscious inclusion amongst our leaders and further providing a psychologically safe workplace.

Employees' diverse knowledge and skills foster creativity. Enhancing our organisational resilience and responsiveness allows us to rise to current challenges and engender a sustainable future.

At Board level, female is well represented, making up 42% of the Board composition.

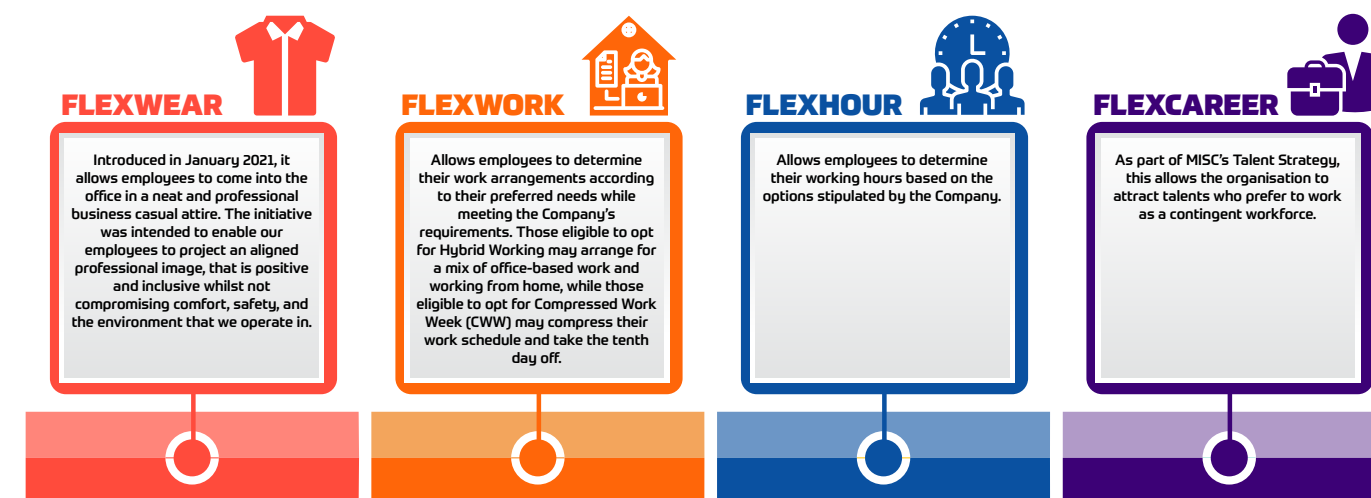
As of 31 December 2022, we have 9,355 employees coming from 44 nationalities. At shore, MISC Group has 25% female employees, with MISC Berhad, AET and Eaglestar Shore recording 40%, 46% and 32% respectively. This is above the recommended industry average of 30%. Our shore employees' male-to-female gender ratio stands at approximately 3.08:1. We also have a significant number of female leaders at management level, with 24% in middle management and 17% in senior leadership (shore employees only).

Of our 62 female seafarers, we are proud to have 2 female captains with the first appointed in 2021, and the second one to be officially instituted in early 2023. In addition, we also expect two more women to assume leadership roles of Master and Chief Engineer at Eaglestar in 2023.

## WELL-BEING

Coming out of the pandemic, MISC acknowledges the importance of well-being and mental health, in promoting a healthy, inclusive and productive workforce. Our well-being initiatives goes beyond physical well-being to focus on a more holistic definition, and is supported by leaders who inspire, are inclusive, and provide psychologically safe workplaces.

In addition, MISC affords our employee the right to working flexibility, balancing between reasonable business and personal needs and includes options to work from home or from our satellite office in Wisma MISC, Cyberjaya. Since 2021, a working committee has been formed to look at various flexible working arrangements.



## EMPLOYEE ENGAGEMENT

### TOWNHALL WITH THE LEADERS

Our former President/Group CEO, Datuk Yee Yang Chien, unveiled our 2022 theme, "Future Made Possible", at the MISC President/Group CEO's Townhall. More than 2,200 MISC employees and colleagues from various vessels attended this virtual event. During the townhall, Datuk Yee discussed at length MISC 2050's vision towards net-zero greenhouse gas emission, our inevitable transition towards low-carbon operations and the need for employees to be future-ready. Employees were also given the MISC 2050 Playbook as reference to the Group's vision and commitments.

Engagements with seafarers continued with 1,800 seafarers attending 180 online events, including townhall meetings, special mental well-being meetings and various seminars that raise awareness of the current challenges and opportunities to enhance Operational Excellence. This includes the MD/CEO Virtual Ship Engagement Session, a virtual meet-up that aims to improve two-way communications with individual vessels and HR operational activities. A total of 17 vessels have participated in this direct dial-in by Eaglestar MD/CEO sessions to date, which will continue throughout 2023.

Refer to Building Trusted Relationship section for more details on our employee engagements.

### EMPLOYEE ASSISTANCE PROGRAMME

Our Employee Assistance Programme (EAP) provides holistic support encompassing physical, mental and emotional well-being. In collaboration with Naluri, employees have access to personalised support and guidance from professionals, to effectively take charge and monitor their health and well-being. They have access to a selection of self-help lessons and are able to connect external health devices to sync progress tracking as follows:

- Digital Coaching App – A tool to guide, support employee's holistic health and well-being;
- Wellness Website – A one-stop hub for the myFriends EAP resources and services;
- Remote Therapy – A one-to-one video consultation with a clinical psychologist; and
- 24/7 Careline – A 24/7 careline to support our employees remotely for their psychological safety.

HR DIALOGUES

MISC conducts a series of talks and programmes to ensure our employees remain engaged. The Platform talk series focuses on topic of psychological safety at the workplace and courageous conversations. TGIF: Take a Break with Our Leaders serves as an informal sharing session where employees get close and personal with their Leaders, many of whom share their personal experiences dealing with COVID-19, their life outside of the office and their career stories. HR Quarterly Engagement updates employees on policies and initiatives and promotes transparency.

SAFEGUARDING OUR PHYSICAL AND MENTAL HEALTH

HSSE has also taken a proactive approach to promote well-being by introducing many programmes that promote psychological and physical health. This includes Mental Health Framework (Assist, Breathe and Care), Mindfulness Programme, Virtual Walking Challenges, Workout Wednesdays and Quarterly Health Talks. Additionally, our Sports Club resumed its activities to organise in-house competitions as well as participating in the PETRONAS Central Region Games.

Eaglestar continued with its Mind Guardian programme to create awareness among seafarers on basic mental health issues and equip them with the skills to recognise signals of well-being hazards which helps them provide support to colleagues, especially when they are sailing onboard vessel. Our seafarers are also offered 24/7 access to the Psychological Counselling Programme by Mental Health Support Solution.

During the pandemic, we partnered with ministries and local authorities to ensure that all our shore and sea employees had access to the vaccination and booster shot programmes. Financial assistance was granted on a case-to-case basis for seafarers in need.

More details on our wellness programme can be found in Operating Safely section

FLOOD RELIEF

In December 2021, Malaysia was hit with torrential rains that caused some of the worst flooding and displaced more than 30,000 people in many parts of the country. Many, including our employees, were impacted by the aftermath, as their houses and personal belongings were severely damaged by the flood.

The organisation, recognising the magnitude and severity of the flood, conveyed its sympathy and support and donated RM390,000 of flood relief assistance to the employees who were affected.

MAINTAINING SOUND LABOUR RELATIONS

We support fair treatment practices such as ensuring equal remuneration and supporting freedom of association. In accordance with international standards on labour and human rights, companies are increasingly expected to adhere to and apply these standards equally across all operations within the organisation.

Our collaborative and consultative approach guides employees in achieving corporate and personal goals. We support workers' rights to exercise freedom of association or collective bargaining. In 2022, 1,302 unionised employees and management held engagement sessions with employee representatives on remuneration. MISC conduct a bipartite negotiations with its unions, particularly for the collective agreements between the company and the union on a 3-year term basis. The Company enjoys a cordial relationship with its unions whereby Company representatives are invited to the union's Annual General Meeting, as well as a periodical review of the Collective Agreement with the latest collective agreement concluded in 8 January 2020. Towards the end of 2022, MISC and the union started a bipartite discussion towards the next Collective Agreement.

We apply the principles of the Basic Conditions of Employment Act, International Labour Organisation (ILO) and the Maritime Labour Convention (MLC). We have adopted these principles in our Human Rights Commitment and Modern Slavery Policy, Whistleblowing Policy and Grievance Mechanism Procedure. These documents are available on the company website.

Our whistleblowing channel provides a mechanism for employees to report any mismanagement. Our grievance mechanism platform allows employees to raise any work-related grievances. For more details on our Grievance Mechanism and Whistleblowing, please refer to our Respecting Human Rights at Sea and Shore section. We also communicate our labour standards to employees through our intra-portal and other platforms.

Our policy on labour standards has been set in the Code of Conduct and Business Ethics under the workplace culture and Employee Handbook which is made available on their first day of work.

In 2022, we recorded zero non-compliance with labour standards.

PARTNERING WITH THE COMMUNITY

COMMUNITY INVESTMENT

Our Commitment

- To foster youth development towards becoming future leaders through education

Our Initiatives

- Establish multi-stakeholders community investment programmes aimed at upskilling entrepreneurship skills of youth
- Continuation of maritime cadet sponsorship programme

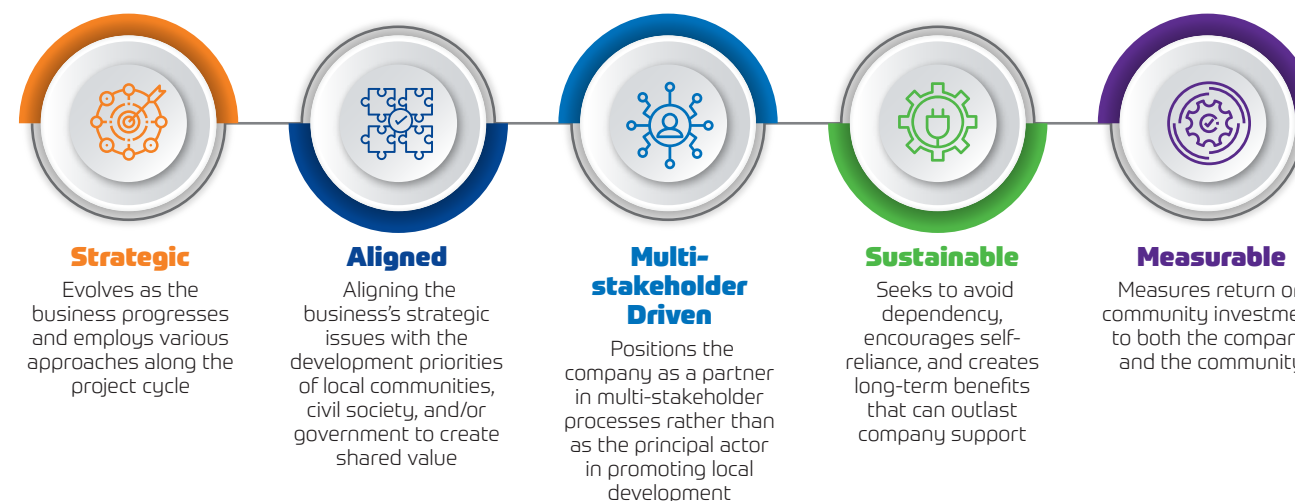
Our Contribution to UNSDG



Promote skills, including technical and vocational skills, for employment, decent jobs, and entrepreneurship

Giving back to the community has always been part of MISC's social responsibility commitment through our Sustainability Community Investment Strategy which focuses on the themes of education, environment, health, safety, and well-being. MISC Group Community Investment Guideline was developed in 2021 and defines our strategic Community Investment (CI) programme's good practices.



Our Community Investment Principles




We align our strategic community investments with the UNSDGs, and our investments have positively benefitted both the community and MISC.

PARTNERING WITH THE COMMUNITY

List of Strategic Community Investment

Theme	Programme	Community Investments in 2022	Value Creation for Beneficiaries	Value Creation for MISC
<b>Education</b> 	Eaglestar Cadet Sponsorship	Contributed RM24.2 million benefitting 751 cadet	<ul style="list-style-type: none"> <li>Provide educational and skill development opportunities to students and contributing to improve socio-economic status through employment</li> <li>Maritime industry exposure through education and placement programmes</li> <li>Empowering students with skills to become valuable members of the global maritime sector</li> </ul>	<ul style="list-style-type: none"> <li>Sustainable talent attraction and retention</li> <li>Broader talent pool which benefits future recruitment</li> </ul>
	AET Scholarships for 3-year Diploma in Maritime Business at Singapore Maritime Academy - Singapore Polytechnic	Sponsored 2 more AET-MaritimeOne students, supporting 5 students in total		
	AET Scholarships for undergraduate students majoring in Maritime Transportation in partnership with the Texas A&M Foundation	Sponsored 10 students at Texas A&M University Galveston Campus		
<b>Environment</b> 	MISC Group Mersing Island Reef Conservation Programme - Employee Participation Programme	<ul style="list-style-type: none"> <li>Carried out reef monitoring and mapping, beach clean-ups and community engagement activities</li> <li>Conducted awareness talks on Safety Management: General awareness on HSSE and Boat Safety for local tourism operators and relevant government agencies</li> </ul>	<p>Maintain healthy coral reefs to enhance marine habitats, fisheries stock, and livelihood of local communities</p>	<ul style="list-style-type: none"> <li>Minimise environmental impact on marine life</li> <li>Maintain good relationships with the local community and local authorities</li> <li>Improve employees' environmental awareness, strengthen employee relations and engagement</li> </ul>
	UMT – MMS Sea Turtle Conservation Initiative	<ul style="list-style-type: none"> <li>Spent RM300,000 in sponsorship over five years (2020 – 2024)</li> <li>Constructed a new kitchen, washroom and recycling corner</li> <li>25 employees participated in the volunteer programme</li> </ul>		


List of Strategic Community Investment

Theme	Programme	Community Investments in 2022	Value Creation for Beneficiaries	Value Creation for MISC
<b>Environment</b> 	MMS Marine Biodiversity Conservation with SMK Suai, Miri	<ul style="list-style-type: none"> <li>Involved 150 students from SMK Suai in the programme</li> <li>13 volunteers participated in the programme</li> <li>Spent RM3,100 on the programme</li> </ul>	Educate the students with information on environmental protection	<ul style="list-style-type: none"> <li>Support the Heart of the Ocean Programme</li> <li>Maintain good relationships with local community</li> </ul>
	MHB River Rehabilitation Programme	<ul style="list-style-type: none"> <li>Launched the MHB River Rehabilitation Programme</li> <li>Adopted Sungai Buluh as part of the rehabilitation programme</li> <li>More than 500 participants comprised of MHB's employees, MMHE Flat Residents and community around Pasir Gudang area participated</li> <li>70 volunteers (MHB River Warriors) were involved during the launch of the programme</li> <li>Planted 50 forest trees at Laman Rekreasi Sungai Buluh, Pasir Gudang</li> <li>Fabricated 5 units of Floating Wet Land</li> <li>Produced 50 macrocomposite</li> <li>Distributed 200 plants to the community</li> <li>Conducted water quality test and river awareness session</li> <li>Contributed RM150,000 over the span of 3 years</li> </ul>	<ul style="list-style-type: none"> <li>Reduce pollution threats to river water biodiversity</li> <li>Increase community knowledge through engagement and environmental education</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrate our commitment to biodiversity</li> <li>Collaborative partnership that promotes and spreads awareness on biodiversity activities</li> </ul>
	MHB mangrove planting	<ul style="list-style-type: none"> <li>Planted 500 mangrove trees at Hutan Simpan Banjar Utara Kampung Bagan Pasir, Tanjung Karang, Selangor</li> <li>38 participants took part in the event</li> </ul>	<ul style="list-style-type: none"> <li>Address climate change and improve the quality of life</li> <li>Spread awareness on the vital role played by mangrove trees in protecting biodiversity</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrate our commitment to biodiversity</li> <li>Supporting global decarbonisation efforts</li> </ul>




PARTNERING WITH THE COMMUNITY




List of Strategic Community Investment

Theme	Programme	Community Investments in 2022	Value Creation for Beneficiaries	Value Creation for MISC
 <b>Environment</b>	MMS Hawksbill Sea Turtle Conservation Programmes	<ul style="list-style-type: none"> <li>60 employees involved in cleaning the pond, hatching area, and the beach, as well as painting a turtle themed mural at the Turtle Conservation Information Centre Melaka (TCIC)</li> <li>Donated cleaning supplies during the "gotong-royong" session</li> <li>Spent RM13,000 on the event</li> </ul>	<ul style="list-style-type: none"> <li>Promote awareness and educate the public in caring for and sustaining the habitat of sea turtles through volunteerism programmes.</li> <li>Creating a safe environment and clean landing sites for hawksbill sea turtles</li> </ul>	<ul style="list-style-type: none"> <li>Minimise environmental impacts.</li> <li>Maintain good relationships with the local community and local authorities</li> </ul>
	ALAM Eco Walk	<ul style="list-style-type: none"> <li>30 participants and 20 volunteers took part in the event</li> <li>Contributed 270 total manhours</li> <li>Spent RM250 on the event</li> </ul>	Promote neighbourhood cleanliness while learning of ALAM initiatives and improving awareness on sustainability and 4R	Strengthen relationships between ALAM's employees and cadets as well as with the local community

List of Philanthropic Programmes

Theme	Programme	Philanthropic Efforts in 2022	Value Creation for Beneficiaries
 <b>Donation Drive</b>	AET COVID-19 Donation Campaign: Charity/Foodbank Programme	<ul style="list-style-type: none"> <li>Provided impacted families with cooked meals, food packs and/or necessities working with charities and foodbanks in Norway, Brazil, the Philippines, the UK, the US and Singapore</li> <li>Expanded to Norway with 34,000 underprivileged receiving a meal either cooked or through food packs</li> <li>4,100 (about 16,500 individuals) underprivileged families benefitted in Rio de Janeiro translating into nearly 600,000 meals; 1,700 impacted families in the Philippines received food packs translating to over 180,000 meals; redistribution of fresh surplus food in London which translated to over 96,000 meals; 60,000 meals catered in Houston and 80,000 meals in Galveston; funded groceries, fresh foods, and necessities for 24,000 daily meals in Singapore</li> </ul>	Supporting communities impacted by the pandemic in ongoing partnerships with charities including foodbanks

List of Philanthropic Programmes

Theme	Programme	Philanthropic Efforts in 2022	Value Creation for Beneficiaries
 <b>Donation Drive</b>	MHB Flood Relief e-Donation Drive	Raised RM10,000 through employee donations and provided monetary benefits and groceries	Provide flood relief for those affected by natural disasters and the pandemic
	MHB Donation to the underprivileged residents around Pasir Gudang	Contributed RM19,110 to 31 underprivileged families	Supporting underprivileged communities and those impacted by natural disasters and the pandemic
 <b>Sponsorship</b>	MHB Sponsorship to SMK Dato' Penggawa Timur	Contributed RM2,000 to upgrade the school's sports room	Providing conducive educational facilities for students
	Toastmaster Internal District 102 - Hall of Fame 2022	Sponsorship of RM3,000 (silver sponsorship)	Promoting Toastmaster Club to more than 2,800 members of District 102, to encourage participants to reach their greatest potential and become confident communicators and leaders
 <b>Volunteerism</b>	AET and Felix Project London	Employees in London volunteered helping at the food kitchen to prepare over 2,770 meals as well as at the warehouse sorting and managing donated food for distribution to support the underprivileged	Providing support to the underprivileged
	AET and Singapore Children's Society	Partnered once again to organise a cooking workshop to encourage youths to make healthy food choices and equip them with basic cooking skills	
	ALAM Beach Cleaning Activity 1.0	35 cadets and 1 employee volunteered and collected a total of 47.5kg of rubbish	Contributing to a cleaner beach, preserving the coastal seashore and support the conservation of marine life
	ALAM Turtle Conservation Centre Cleaning	<ul style="list-style-type: none"> <li>Contributed special paper to clean the pool</li> <li>26 cadets and 8 employees volunteered during the event with a total of 204 volunteer hours</li> </ul>	<ul style="list-style-type: none"> <li>Raising awareness on conservation of sea turtles and the marine environment</li> <li>Stabilise and increase the sea turtle population through awareness programme as well as releasing 50 hatchlings into the sea.</li> <li>Volunteers at the Turtle Conservation and Information Centre participated in gotong-royong activities such as cleaning up the pool, beach and surrounding areas</li> </ul>

## EMPLOYEE PARTICIPATION PROGRAMME

### HEART OF THE OCEAN

In conjunction with World Ocean Day 2022, we launched our Employee Participation Programme (EPP) as part of the Heart of the Ocean programme. Through the programme, employees were not only given the opportunity to contribute and give back to our planet, but to also give back to society through engagements with the local community. This initiative was carried out in collaboration with Reef Check Malaysia – a flagship initiative housed under our Heart of the Ocean Programme - which aims to improve ocean health by supporting coral reef conservation and undertaking proactive action to prevent and reduce plastic litter in our ocean.

Throughout the programme, a variety of activities were conducted for each of the EPP such as reef monitoring, beach clean-up and community host assessment, where participants were given the opportunity to engage more with the local community and give back to the nature.

Learning about coral reefs during an interactive briefing conducted by Reef Check proved informative and handy for colleagues to gain first-hand experience in reef monitoring, which is an important step in coral conservation. The programme also continued with beach clean-up activities where more than 400kg of trash which included 2825 plastic bottles were collected within 700 meters of the coastline.

Apart from that, participants were also engaged directly with the local community through the community host assessment that was conducted at Kampung Sibu. It was an eye-opening experience for most of our employees as they were able to better understand the villagers' way of life, as well as we equip the Kampung Sibu community with some alternative livelihood opportunities such as recreation activity operations and workshops which will enhance their knowledge on the marine ecosystem and reinforce the importance of protecting the environment.



### MANGROVE PLANTING

In 2022, our Offshore Business and Corporate Planning division employees participated in mangrove planting programme at the Kuala Selangor Nature Park (Taman Alam Kuala Selangor) on two separate occasions. The aim of the programme is to create impactful awareness among employees on mangrove conservation and its importance to our ecosystem.

The programme was conducted in collaboration with Malaysia NATURE Society and is aligned with supporting the "100 million Tree-planting Campaign" that was initiated by the Malaysian Ministry of Energy and Natural Resources. A total of 98 units of Mangrove Trees (Rhizophora Apiculate s.p.) were planted during these two separate EPP events. Apart from that, Corporate Planning team also collected 200kg rubbish from the mangrove area during the events.



## AET's INITIATIVES

### COVID-19 DONATION CAMPAIGN: CHARITY / FOODBANK PROGRAMME

Our global 2021 COVID-19 donation campaign continued to support communities impacted by the pandemic in partnership with national and local charity organisations including foodbanks.

As part of our COVID-19 donation campaign, we partnered with Matsentralen Rogaland in Norway, RioContraCorona in Brazil, Philippine Business for Social Progress (PBSP), The Felix Project, Houston Foodbank and Galveston County Foodbank as well as Singapore Children's Society. Several of our colleagues joined the handover ceremonies in 2022 with the charity organisations and learned more about their operations.

For our expansion into Norway, we partnered with Matsentralen Rogaland providing 34,000 underprivileged a meal either cooked or through food packs.

In Brazil, our partnership with RioContraCorona provided a total of around 4,100 underprivileged families (about 16,500 individuals) in Rocinha, Vidigal, Cantalago and other communities in Rio de Janeiro with food packs to have two daily cooked meals for up to two weeks, translating into nearly 600,000 meals.

PBSP provided over 1,700 impacted families food packs with fresh and dried goods, translating into over 180,000 meals. A total of 300 local farmers and fishermen families also received much needed income from the produce they provided for these food packs.

The Felix Project funded the redistribution of fresh surplus food to prepare around 96,000 meals for vulnerable community members in London. In the US, over 60,000 meals were provided for the underprivileged community from the wider Houston area while the foodbank in Galveston served over 80,000 meals.

In Singapore, our donation supports the day-to-day operational needs of the Sunbeam Place @ Singapore Children's Society providing groceries, fresh foods, and necessities for 24,000 daily meals as part of the Centre's operations.

**PARTNERING WITH THE COMMUNITY**

**VOLUNTEERING WITH FELIX PROJECT LONDON**

During the year, quarterly a group of six employees in London volunteered one day with The Felix Project.

Early in the year, at the Felix's Kitchen, they helped to prepare 2,776 nutritious ready-made meals for distribution to families in need. Felix's Kitchen in Poplar, East London, was opened last year by The Felix Project, a UK charity that rescues good quality, unsold surplus food to tackle food waste and hunger and the charity has also been supported by AET's COVID-19 donation campaign.

Continuing our support for The Felix Project, our colleagues volunteered at the warehouse in Poplar where they sorted and managed donated food, which was later distributed to Londoners in need of food. In December last year, six colleagues helped to organise donated food items which were delivered to charities and their beneficiaries for the holidays.

AET remains strongly committed to supporting the underprivileged and giving back to society to build a better world.



**VOLUNTEERING WITH SINGAPORE CHILDREN'S SOCIETY**

AET partnered with the Singapore Children's Society once again to organise a cooking workshop to encourage some of their youths to make healthy food choices and equip them with basic cooking skills. Youths aged 12-18 years old teamed up with six of our colleagues and learned how to prepare three healthy dishes guided by the chefs in a kitchen studio. AET has been supporting the Singapore Children's Society and its aim to protect and nurture children and youth's welfare and needs since 2019.



**SCHOLARSHIPS THROUGH SINGAPORE MARITIME FOUNDATION AND TEXAS A&M FOUNDATION**

Committed to contributing to the growth of the maritime industry and nurturing future leaders, AET sponsored two more students who received the AET-MaritimeOne scholarships at the MaritimeOne Scholarship Award Ceremony in Singapore.

Our two scholarship recipients are part of 66 recipients under the Singapore Maritime Foundation this year. For the third year running, AET is supporting students for the three-year Diploma in Maritime Business Programme at Singapore Maritime Academy – Singapore Polytechnic.

Across the Atlantic, we have awarded 10 scholarships in partnership with the Texas A&M Foundation at the Texas A&M University Galveston Campus. The university is home

to the Texas A&M Maritime Academy – a highly specialised maritime training and education programme. It is also one of seven maritime academies in the US. Our scholarship initiative supports undergraduate students majoring in Maritime Transportation for their bachelor's degree programme. By awarding scholarships, we aim to empower students with skills to become valuable members of the global maritime sector.

These initiatives and more are part of our commitment to the UNSDGs which we subscribe to — #3 Good Health and Well-being, #4 Quality Education, and #10 Reducing Inequalities.

**BEACH CLEANING INITIATIVE: COMMITTED TO PROTECTING LIFE BELOW WATER**

AET colleagues and their families across our offices in the US, the UK, Singapore, and Brazil volunteered in our annual beach clean-up. Aside from helping to remove trash and marine debris from coastal shorelines, our beach clean-ups promote awareness among our employees to become more conscious of their overall consumption while encouraging them and surrounding communities to act responsibly. In total, an estimated 178kg of trash was collected including single-use plastics, foam pieces, masks, gloves, cigarette butts, fishing lines, nets and many more.

This initiative forms an integral part of our sustainability strategy as it marks our commitment to care for the environment and supports the UNSDG 14 - Life Below Water which we subscribe to.



## MHB INITIATIVES

### BIODIVERSITY CONSERVATION PROGRAMME – MHB RIVER REHABILITATION PROGRAMME

Malaysia Marine and Heavy Engineering Holdings Berhad (MHB) launched its long-term environmental initiative, the River Rehabilitation Programme, with the adoption of Sungai Buluh in Pasir Gudang, Johor in December 2022. This programme is a joint effort with Majlis Bandaraya Pasir Gudang (MBPG) and Universiti Teknologi Malaysia (UTM) and also involves teaming up with local communities within the Sungai Buluh vicinity.

The collaboration was kicked off with the signing of a Memorandum of Understanding (MoU) between MHB and MBPG as represented by the Managing Director & Chief Executive Officer (MD & CEO) of MHB and the Mayor of MBPG at the launching ceremony.

The River Rehabilitation Programme seeks to improve river health through ecological rehabilitation while raising local communities' awareness through engagement and environmental education, thus ensuring sustainable development and improving the quality of life.

Through the River Rehabilitation Programme, MHB has established a strategic three-year roadmap to drive key initiatives in supporting four core elements which cover

stakeholder awareness and education, river revitalisation, greening and decarbonisation, and capacity building and training. MHB is also the first company to collaborate with MBPG on a long-term environmental conservation initiative in Pasir Gudang.

The primary goal of the River Rehabilitation Programme is to improve river health by reducing pollution threats to river water. In supporting MBPG's Local Agenda 21, a local government initiative to engage in sustainable development activities through the participation of the private sector, local authorities and surrounding communities, we are committed to work together with all our stakeholders to sustain optimum river management through our rehabilitation and conservation programme.

Aligned with our mission to be a responsible corporate citizen, MHB is passionate about creating a sustainable future and generating positive environmental and community impacts. Aside from keeping our rivers and environment clean, we believe that the River Rehabilitation Programme will further strengthen our long-standing relationships with community in the areas in which we operate.

### MHB FREE MARKET

Giving has always been part of MHB's culture. To put a smile on the faces of people who are less fortunate while lending out a hand to ease some of their burdens, MHB organised a Free Market event for more than 500 family members across the Pasir Gudang area in which we operate.

Approximately five tonnes of new and pre-loved items were donated by generous MHB employees ranging from clothes, shoes, handbags, strollers, toys, medical support equipment, kitchenware, books and many more. The families were transported from their home to the event venue where they were given the opportunity to pick anything they wanted on display at absolutely no cost.

The event was hosted by the MD & CEO of MHB, and graced by the Mayor of the City Council of Pasir Gudang and the representative from Mukim Plentong, Pejabat Daerah Johor Bahru as well as all the village heads (Ketua Kampung) involved.

MHB is committed to contribute to society and in line with the UNSDG 3 - Good Health and Well-being.

## MMS INITIATIVES

### MARINE BIODIVERSITY CONSERVATION WITH SMK SUAI, MIRI

MMS' Miri-based Offshore Terminal Operations were invited to Sekolah Menengah Kebangsaan Suai (SMK Suai) located in a rural area in Miri, Sarawak to share and raise awareness on marine biodiversity conservation with the students. The programme started with an awareness talk, followed by engaging games and a drawing competition.

The following day, all students including MMS representatives conducted beach clean-ups at Peliau Beach, Miri where students showed their support and commitment towards keeping the environment clean and safe.

The event received immense cooperation from government authorities, state organisations and the neighbourhood community. All in all, we managed to strengthen our relationship with the local community, especially with SMK Suai's students. It was a rewarding opportunity for us to be able to give back to the community.



### MMS HAWKSBILL SEA TURTLE CONSERVATION PROGRAMME



As a marine industry player, Sungai Udang Port Sdn. Bhd. (SUPSB) aspires to be a responsible corporate citizen and contribute to nature conservation. In 2022, SUPSB in collaboration with Turtle Conservation and Information Centre Melaka (TCIC) (an entity under the Department of Fisheries Melaka) conducted a Hawksbill Sea Turtle Conservation CSR Programme. The TCIC is located along the coast of Padang Kemunting Beach, about 16.4 km from SUPSB. As part of the programme, we cleaned the pond, hatching area and the beach at TCIC.

Through our efforts, we hope to create a safe environment and clean landing sites for hawksbill sea turtles. In demonstrating SUPSB's commitment towards environmental sustainability, we decorated the conservation centre by contributing



a sea turtle themed wall mural drawing with the intention of creating awareness amongst locals and tourists on the importance of conserving hawksbill sea turtles which is one of the critically endangered species in Malaysia, to maintain a balanced biodiversity ecosystem.

## ALAM INITIATIVES

### INVESTING IN EDUCATION

As part of our commitment to the growth and sustainability of the maritime industry, MISC continues to help develop capable seafaring professionals via our wholly-owned maritime education & training business segment, ALAM. Over 14,000 seafarers have been trained in nautical studies and marine engineering since its inception in 1977. The Group through our subsidiary, Eaglestar continues to sponsor cadets for Diploma in Nautical Studies and Diploma in Marine Engineering under the MISC Cadet Sponsorship Programme. In 2022, we sponsored 751 students with the total annual scholarship worth RM24.2 million.

### ALAM ECO WALK

In December 2022, in collaboration with ALAM maintenance contractor and local community, ALAM Sustainability Team organised an Eco Walk 2022. This inaugural event was held on a small scale adopting the plogging concept.

The objective was to create awareness on sustainability and 4R (Refuse, Reduce, Reuse and Recycle) among ALAM's employees, students, contractors, and the nearby local community. Notable positive strengthening of relationship between the stakeholders and the local community cheered the group for helping to clean their neighbourhood.

The activity took place along a 5km beachside route and at the finishing line, participants were required to segregate rubbish according to the 4R rules. A total of 30 participants and 20 volunteers participated and a total of 38kg of rubbish was collected. Gifts were given to the top five participants who collected the most rubbish.

Through this initiative, we were able to strengthen ALAM's relationship with the local community and contractors, while providing knowledge and beneficial information on sustainability and 4R practices.



### BEACH CLEANING ACTIVITY 1.0

ALAM as a contributor to maritime industry providing training to seafarers, we believe that we have a responsibility to keep our sea and shore clean from rubbish and waste. This year, ALAM conducted twice beach cleaning activities surrounding the coastline along the campus ground. A total of 70 cadets and six employees participated in the programme and 132kg of various waste and rubbish were collected.

Another beach cleaning activity was held on in October 2022 in collaboration with Maritime Institute of Malaysia (MIMA) and Majlis Bandaraya Melaka Bersejarah (MBMB). During the event, participants were briefed on the methodology used to study the beach cleanliness index and three employees participated in the activity.

### BLOOD DONATION AND HEALTH SCREENING

ALAM's annual blood donation programme in collaboration with Blood Bank Hospital Melaka resumed in 2022 after a hiatus during the COVID-19 pandemic. Over 200 employees and students came forward to donate their blood however 113 packs of blood were successfully collected.

In ensuring our employees and contractors are in their best health, we worked together with Klinik Kesihatan Kuala Sungai Baru to organise screening programmes which includes blood pressure tests, glucose tests, Body Mass Index (BMI) and mental health screenings for employees and in-house contractors. A total of 54 employees and contractors took part in the screening programme.



### TURTLE CONSERVATION CENTRE CLEANING

ALAM Student Affairs Department successfully led the Turtle and Conservation Centre Cleaning in October 2022 where 26 cadets and 8 employees volunteered during the event with a total of 204 volunteer hours.

# OPERATING RESPONSIBLY

## VALUES, ASSURANCE & BUSINESS ETHICS

### Our Commitment

- To continuously embed a culture of strong corporate governance and business ethics and conduct
- To enhance cybersecurity framework and safeguard our operations

### Our Initiatives

#### Corporate Governance

- Include ESG Risks in Enterprise Risk Management
- Increased Board Oversight on ESG Risks and Opportunities including cyber risk governance

#### Compliance & Business Ethics

- Continue to embed compliance culture in business processes through awareness and assurance programmes
- Continuously improve our Anti-Bribery Management System
- Implement human rights assessment and grievance mechanism
- Create cyber security capabilities and awareness among MISC community across all levels
- Elevate and continuously improve on cyber security framework

### Our Contribution to UNSDG



Promote sustainable economic growth and decent work for all by ensuring labour rights and promote safe and secure working environments for all



Foster strong governance and business ethics culture against corruption and modern slavery and promote fair practices

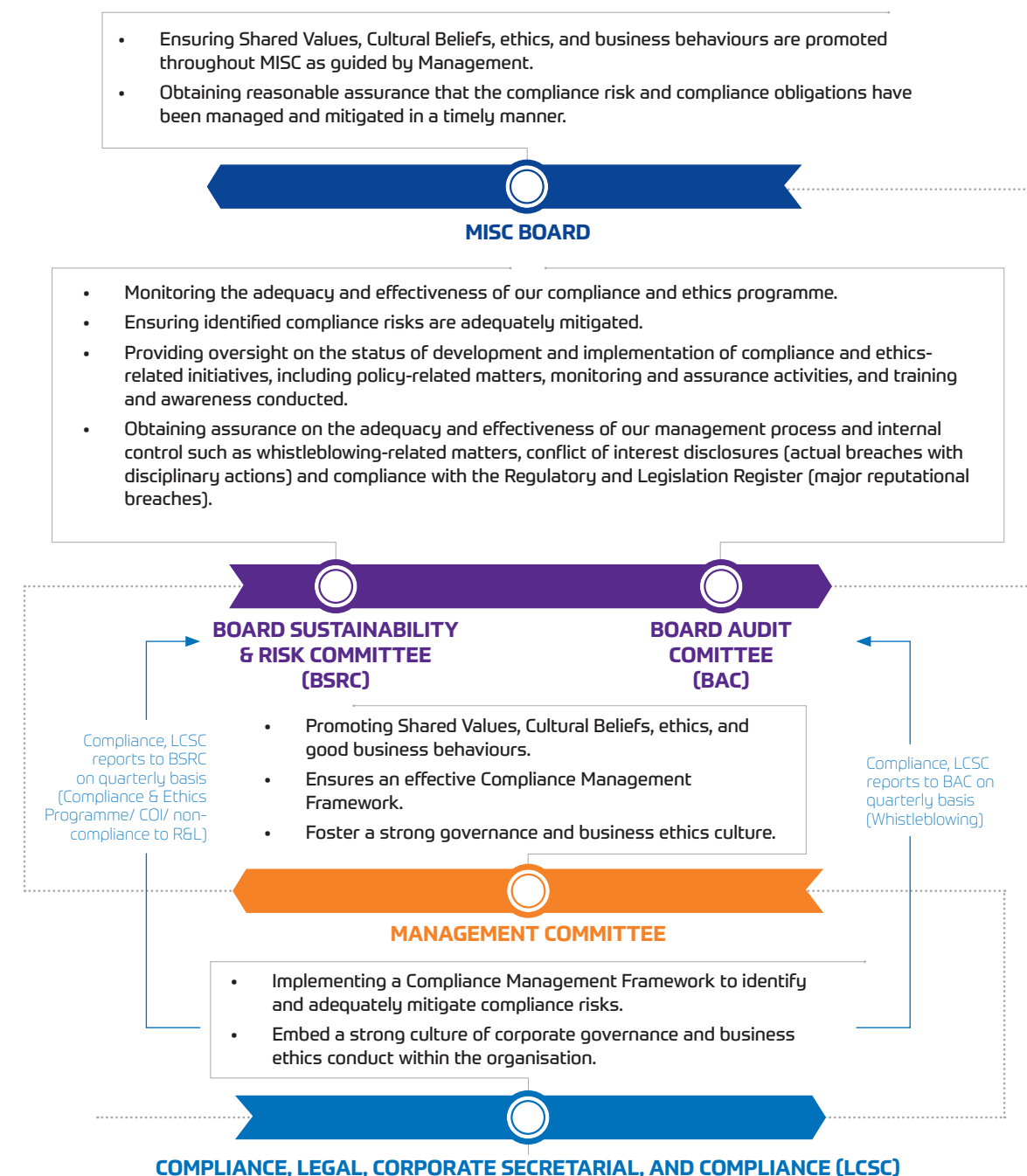
Maintaining high standards of governance is critical to our strategy and long-term success. The Values, Assurance and Business Ethics strategic priorities, under the Governance pillar, reinforce strong governance, business ethics and culture. Robust governance and ethical culture preserve and strengthen stakeholder confidence while providing the foundations for a high-performing organisation that demonstrates long-term resilience. Governance is a crucial sustainability component for sustainable growth and the organisation's licence to operate.

Adopting a proactive rather than a reactive approach demonstrates our commitment to conduct business according to sound corporate governance principles. Our ethical, accountable, and transparent business culture generates meaningful, sustainable stakeholder value. Adhering to the highest principles of transparency and accountability, we align our governance standards to the relevant regulatory frameworks and adoption of best practices.

## COMPLIANCE GOVERNANCE STRUCTURE

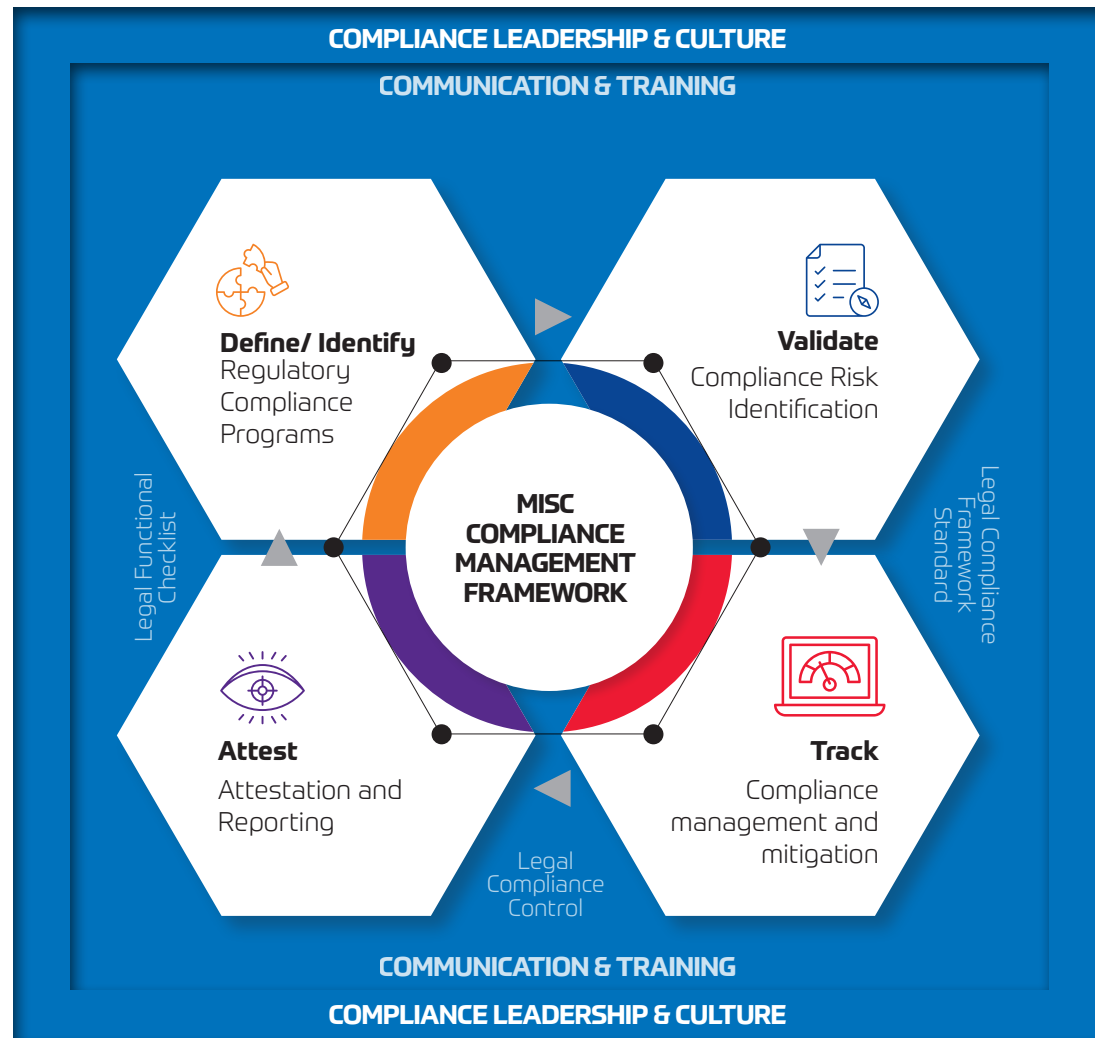
We have a clear governance structure and mechanism to monitor our operations according to relevant policies and regulations. Our Governance structure provides a mechanism to manage our operations compliance risk and obligations proactively and effectively, with the embedment of the compliance culture across all business activities and operations to ensure Group Policies and relevant laws and regulations are complied with.

### MAIN ROLES AND RESPONSIBILITIES



OPERATING RESPONSIBLY

The Board of Directors (Board) and the Board Committees' designated roles and responsibilities are of utmost importance to the sustainable development of the MISC Group. The Compliance department under the Legal, Corporate Secretarial and Compliance (LCSC) assists the Board of Directors, Board Sustainability & Risk Committee (BSRC), Board Audit Committee (BAC) and Management Committee in compliance risk management based on the Compliance Management Framework as illustrated below.



All business units, service units and subsidiaries follow the highest standard of corporate governance practices and business ethics. We also established the Commercial Governance and Acquisitions Department at MISC Gas Assets & Solution and Offshore Business to inculcate sound governance principles in all aspects of the business and project management.

EFFECTIVE MANAGEMENT SYSTEMS

A sound management system is key to good corporate governance. Our management systems and internal controls apply the core principles of good governance: fairness, accountability, responsibility, and transparency.



## LEADERSHIP



We recognise the diverse nature, size, and location of MISC’s business operations. As the leadership team of MISC, the Board and Management set the premise and guide the acceptable behaviours and actions expected from employees (‘top-down’ approach).

Board and Management shall:

- i. Set the appropriate ‘Tone from the Top’;
- ii. Provide clarity on expectations for compliance;
- iii. Ensure behaviours and actions are consistent with the messages delivered; and
- iv. Reward appropriate behaviours and penalise unacceptable practices.

## MANAGEMENT SCORECARD

MISC continuously embeds a culture of robust corporate governance, business ethics and conduct within the organisation while demonstrating a strong tone from the top and ensuring effective compliance culture. In 2022, the Group implemented company-wide and management compliance scorecards to measure the compliance levels of every business unit, service unit and subsidiaries (both management and employees).

The management scorecard is principally intended to:

- Demonstrate the top-level commitment to curtail bribery, corruption, and compliance risk; and
- Strategically embed compliance culture into day-to-day activities within MISC.

## CULTURE



We seek to instil a strong compliance culture throughout the Group. At MISC, every employee is expected to have the right attitude and behaviour towards business ethics in order to create a sound compliance culture. A compliance culture is critical to support and sustain an effective Compliance Management Framework and to achieve its intended outcome.

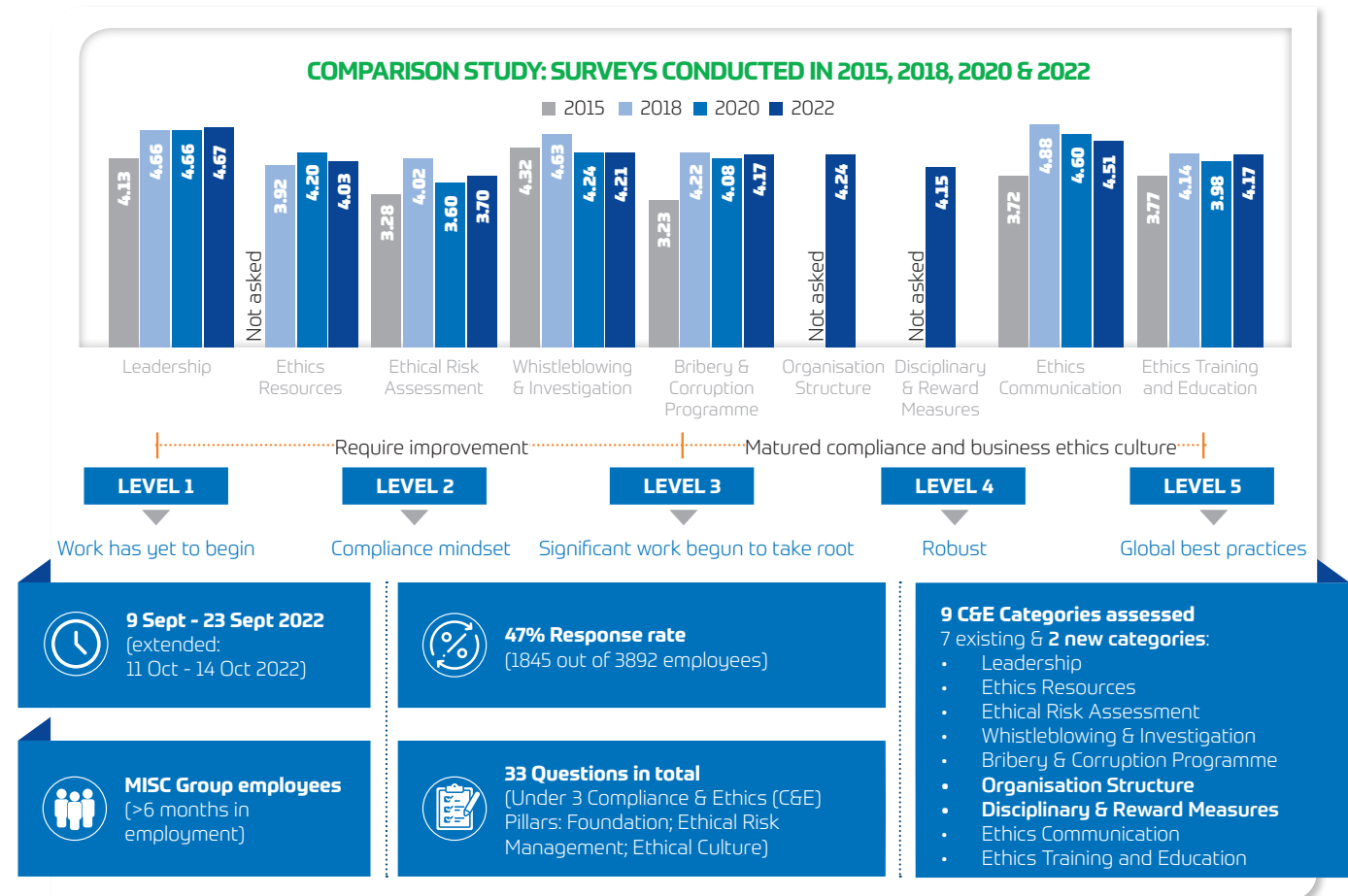
Compliance culture is built on having mechanisms to communicate, demonstrate and reward expected acceptable compliance behaviours:

<p><b>01</b> Clear set of published values and expected compliant behaviours</p>	<p><b>04</b> Feedback mechanisms are put in place to ensure that mechanisms and processes to achieve the desired results and drive appropriate behaviours are working</p>
<p><b>02</b> Management is seen as the role models for implementing and abiding by compliance requirements</p>	<p><b>05</b> Issues raised are turned into lessons learnt and appropriate actions are taken</p>
<p><b>03</b> Employees are aware that they are accountable for their actions and equipped with the necessary skills and knowledge</p>	<p><b>06</b> A consistent approach to rewards or consequence management is used to reinforce behaviours</p>

## COMPLIANCE & ETHICS SURVEY 2022

The Compliance and Ethics Survey is one of the tools used to gauge the Compliance and Ethics culture within MISC Group by measuring the effectiveness of the Compliance and Ethics Programme’s initiatives as perceived by employees as well as to assess the depth of understanding and assimilation of the MISC CoBE since its adoption and roll out in August 2012.

In 2022, the survey was rolled out to MISC Group of employees to assess the effectiveness of the Compliance and Ethics initiatives. The survey results were analysed and key takeaways further formulated into action plans for continuous improvement.



## COMPLIANCE & ETHICS FEEDBACK FORM

Understanding the importance of obtaining feedback, a simplified compliance feedback form was rolled out to serve as talking points during the employees’ performance review sessions.

## COMPLIANCE COMMUNICATIONS & AWARENESS

Compliance obligations evolve and change over time. Therefore, compliance knowledge and awareness must be continuously refreshed, reinforced, and communicated to all employees so that compliance obligations can be met.

We have undertaken various initiatives to strengthen the Group’s Compliance and Ethics framework and oversight of

the Group’s Business Ethics and Conduct. Communication and awareness programmes which include:

- Raising awareness of the Code of Conduct and Business Ethics (CoBE) and Whistleblowing through our ‘See. Speak. Support.’ campaign;
- Delivering comprehensive six critical laws and CoBE training and refresher sessions for employees, directors and third parties; and
- Regular communications on various channels such as the MISC Compliance and Ethics Intranet Portal, email newsletters and workplace postings.

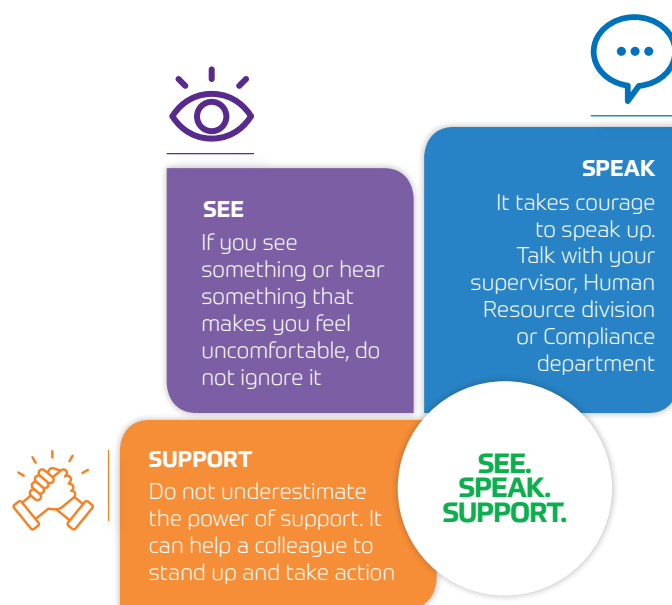
Our communications and awareness programmes are monitored, reviewed, and assessed for their effectiveness in order to gauge employees’ understanding of MISC’s Compliance and Ethics culture through periodical surveys.



OPERATING RESPONSIBLY

SEE. SPEAK. SUPPORT.

We launched the ‘See. Speak. Support.’ Campaign in 2017 to highlight and raise employees’ awareness of MISC’s principal elements of the CoBE. The campaign familiarises employees with our Whistleblowing Channels, six critical laws, and other relevant policies and guidelines. The campaign revolves around three main themes:



The ‘See.Speak.Support.’ awareness sessions are conducted on a quarterly basis with Groupwide participation via physical or online platforms.

In 2022, the following ‘See. Speak. Support.’ awareness sessions were conducted:

i. **Upholding Integrity: A Perspective of Whistleblowing Management:**

The session was delivered by the Chief Integrity Officer (CIO) of PETRONAS which touched areas such as the whistleblowing process in PETRONAS, types of cases that are reported through the channels, whistleblower protection as per Whistleblower Protection Act 2010 and others. The session was also attended by representatives from Group Integrity PETRONAS.

ii. **Balancing Data Security and User Experience:**

The session covered an overview of cybersecurity threats happening in the country followed by sharing on data breach, data leak, data security, the impact of data breach, Do’s and Don’ts as well as what the company is doing internally to enhance and safeguard cybersecurity efforts.

iii. **Sexual Harassment at Workplace:**

The session focused on the definition of sexual harassment as covered in the MISC CoBE, the Employment Act 1955, interpretations on sexual harassment by the court via case studies as well as some updates on the Anti Sexual Harassment Bill that was passed by the Parliament.

iv. **Anti-Money Laundering: What Businesses Should Look Out For?:**

The session touched on what is money laundering, the mechanisms, case sharing and what the company can do to protect itself from such exposure.

TRAINING AND AWARENESS

In 2022, we delivered 18 awareness and engagement programmes on ‘Six Critical Legal Areas’ as follows; Ethics and Integrity, Personal Data Protection, Sanctions, Export Control, Competition and Human Rights and Modern Slavery.

These sessions reinforced the Group’s expectations of employee conduct in their daily business and work functions. Apart from these sessions, we also shared bite-sized communications across the Group to provide compact information on the related areas.

We conducted annual CoBE Refresher Training, which is mandatory for directors and employees with a minimum passing mark. Our annual CoBE training were also extended to third parties to ensure they are familiar with MISC CoBE and other requirements and expectations for complying with similar standards. Third parties are required to complete a mandatory assessment post the training. In 2022, 64 third parties attended the CoBE training session from various industries across MISC Group of which 11 are critical suppliers.

As part of the MISC Group Compliance Learning initiative, MISC implemented the mandatory Compliance e-Learning modules on the six Critical Legal Areas that are being rolled out on a staggered basis commencing June 2022.

RISK MANAGEMENT



REGULATORY COMPLIANCE PROGRAMME

At MISC, the identified six Critical Legal Areas (CLA) that can pose a risk on us are international laws with an extra-territorial effect which, if breached, could result in high civil and criminal penalties with severe reputational damage to the company.

SIX CRITICAL LEGAL AREAS



We monitor all relevant regulations and legislations that can potentially impact the organisation through the Regulatory & Legislation (RGL) Register. The register serves as a “live” document and will be continually updated to ensure we adhere to all statutory needs from time to time. In providing the Board and Management with assurances that MISC is complying to all applicable laws and regulations, Legal Functional Checklists (FCs) were introduced through an Integrated Assurance platform called MyAssurance.

CODE OF CONDUCT AND BUSINESS ETHICS

Our Code of Conduct and Business Ethics (CoBE) applies to all directors, employees and third parties performing work or services for or on our behalf. The CoBE outlines the standards of behaviour and ethical conduct expected from each individual. Employees must act in the best interests of MISC and not engage in conduct or activities which may adversely affect our best interests. We believe the CoBE reflects our commitment to effective corporate governance compliance measures in the conduct of the Group’s business both domestically and worldwide.

The CoBE’s Four Key Areas

1. Core Values and Culture
2. Duties of Good Faith, Fidelity, Diligence, and Integrity
3. Discipline, Disciplinary Process and Sanctions
4. Workplace Culture and Environment

The MISC Group has adopted a zero-tolerance policy against all forms of bribery and corruption. Anti-Bribery and Corruption (ABC) Manual elaborated guidance to the key principles set out in CoBE on how to deal with improper solicitation, bribery and other corrupt activities issues that may arise in the course of business which includes but not limited to these following topics:

1. Gift, Entertainment, and Corporate Hospitality;
2. Dealing with Public Officials;
3. Corporate Social Responsibilities (CSR), Sponsorships, and Donations;
4. Political Contributions;
5. Facilitation Payment;
6. Money Laundering;
7. Dealing with Third Parties;
8. Recruitment of Employees; and
9. MISC Whistleblowing Policy.

OPERATING RESPONSIBLY

**ANTI-BRIBERY AND CORRUPTION POLICY PROGRAMMES**

As MISC operates worldwide and with various international clients, there is a need to ensure that good business ethics and conduct of employees with integrity are embedded in our operations.

To reiterate MISC’s Policy on Anti-Bribery and Corruption, we at MISC Group are committed to applying the highest standards of ethical conduct, integrity and accountability in all our business activities and operations.

The Policy applies to all MISC business dealings and relationships. Simply put, MISC has a zero tolerance policy towards any form of bribery and corruption by or of its employees, or any persons or companies acting for MISC or on its behalf.

**ANTI-BRIBERY MANAGEMENT SYSTEM**

The effects of bribery are felt globally and pose a serious threat to sustained economic progress, business reputation, sustainability, and growth. We are committed to fighting corruption by encouraging and educating our directors, employees and third parties not to engage in either direct or indirect corrupt activities.

MISC Group is certified with the ISO 37001: 2016 Anti-Bribery Management System (ABMS) to ensure adherence to the Adequate Procedure Guidelines and to demonstrate to stakeholders that MISC has put in place internationally recognised best Anti-Bribery and Corruption practice and internal controls.

The ISO ABMS certification status for MISC Group is illustrated below.

MISC Group	Certification Status
	✓
	✓
	✓
	✓
	✓
	Planned certification in 2023

Having an effective ABMS may act as a defence to the corporate liability for the following:

- The Malaysian Anti-Corruption Commission (MACC) Act; and
- Foreign jurisdictions such as the US Foreign Corrupt Practices Act (FCPA) and the UK Bribery Act.

MISC has been recertified by SIRIM QAS in February 2022 for the next three-year cycle following a successful recertification audit in January 2022. Following recertification, annual audit reviews performed by Group Internal Audit continues to evaluate the effectiveness of ABMS implementation in MISC in October - September 2022. This will be followed by external audit by SIRIM QAS planned to commence in January 2023.

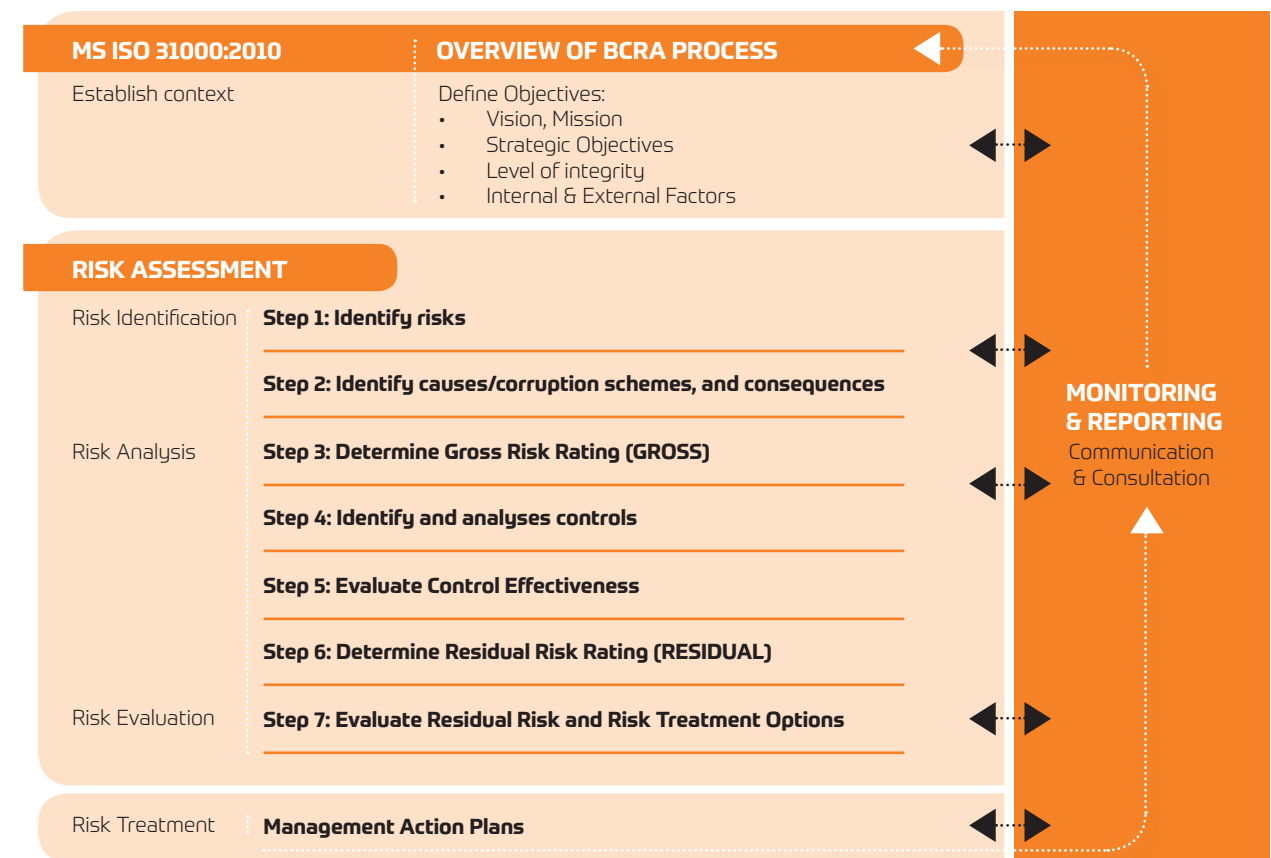
**83%**  
of MISC Group certified with ISO ABMS

**No monetary losses**  
as a result of legal proceedings associated with bribery or corruption

**CORRUPTION RISK EXPOSURE & MITIGATIONS**

Bribery and corruption risk management framework was developed by benchmarking these following documents:

- Transparency International (TI) (UK)’s Guidance for “the Conduct of Effective Bribery Risk Assessment”;
- United Nations Global Compact’s “Guide for Anti-Corruption Risk Assessment”;
- PETRONAS’ Guide on “How to Implement an Integrity Programme – A Guide for MDs/CEOs, PETRONAS Group of Companies”;
- Corporate Anti-Corruption Compliance Centre (CACCC) Risk Methodology;
- MS ISO 31000:2010 Risk Management; and
- ISO 37001 Anti-Bribery Management System (ABMS).

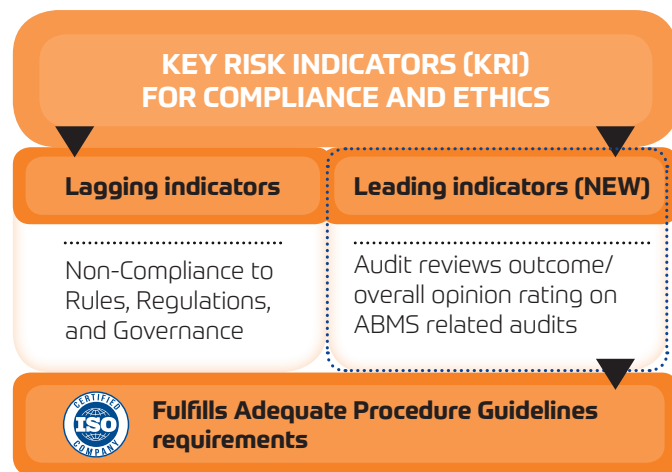


MISC performed its first Bribery and Corruption Risk Assessment (BCRA) to identify, assess and evaluate bribery exposures within MISC in December 2017. Following that, the Bribery and Corruption Risk Register is updated and reviewed annually to ensure the bribery and corruption risks, including its ratings and mitigation measures, are adequately captured to fulfil the requirements of ISO 37001:2016 ABMS and the Adequate Procedures Guidelines.

The 2022 BCRA annual review for MISC Group has identified, analysed, evaluated and documented 194 potential bribery and corruption risks clustered into 16 bribery and corruption risk categories where 76 existing mitigations have been put in place across MISC Group and 15 new mitigations planned to be developed and rolled out in 2023.

**MONITORING OF BRIBERY/CORRUPTION RISK MITIGATION CONTROLS**

Bribery and Corruption risk is linked to MISC's Risk Register under Risk Event category; Compliance to Rules, Regulation, and Governance under the Component of Compliance and Ethics.



**KEY RISKS INDICATORS FOR BRIBERY AND CORRUPTION**

- Lagging Indicator KRIs: Reputational and Non-Reputational
- Leading Indicator KRI: ABMS related audits "Overall Opinion Rating"

In 2022, there were no monetary losses as a result of legal proceedings associated with bribery or corruption.

**COMPLIANCE RISKS COVERED UNDER TPCDDOG**



- Bribery and corruption
- Money laundering
- Conflicts of Interest
- Economic sanctions
- Export control
- Competition
- Human rights and modern slavery
- Personal data protection

**COMPLIANCE DUE DILIGENCE TOOLS**



- Know Your Counterparty Questionnaire
- Standard Compliance Due Diligence (Online screening via KYC platforms)
- Enhanced Compliance Due Diligence
- Associated Compliance Risk Assessment using the Due Diligence Risk Assessment Checklist

**THIRD-PARTY RISK MANAGEMENT**

Our third-party compliance due diligence process follows the Group's Third-Party Compliance Due Diligence Operational Guidelines (TPCDDOG). MISC undertakes compliance due diligence in all business dealings and relationships with new and existing third parties and business partners as part of the Know Your Counterparty (KYC) process. KYC helps us understand and evaluate counterparties more effectively to ensure they comply with all applicable laws and the MISC CoBE requirements, policies and obligations.

Our operations must perform due diligence on third parties before engaging them. Due diligence comprises completing the KYC Questionnaire and/or internally screening third parties using KYC online checks and assessing potential Associated Compliance Risk using the Due Diligence Risk Assessment Checklist. We undertake an Enhanced Compliance Due Diligence (ECDD) upon identifying medium or high Associated Compliance Risk including all proposed transactions involving mergers and acquisitions and business joint ventures. We execute appropriate mitigation plans upon identifying possible red flags.

**WHAT'S IN THE MISC'S THIRD PARTY COMPLIANCE DUE DILIGENCE OPERATIONAL GUIDELINES?**

The MISC TPCDDOG contains basic guidelines and procedures for performing compliance due diligence on third parties entering into or having existing contractual transactions and business relationships with us. Third-party assessments ensure that business relationships do not pose any significant Associated Compliance Risk.

**COMPETITION**

Our Competition Law Guidelines outline the main competition laws applicable in most international jurisdictions and ensure that we strictly comply with these rules in our day-to-day business. We have adopted two Competition Law Compliance Protocols that support the Competition Law Guidelines:

- MISC's Competition Law Compliance Protocol on Meetings and Information Sharing; and
- MISC's Competition Law Compliance Protocol on Merger and Acquisition Transactions.

In 2022, we recorded no non-compliance related to competition law.

**SANCTIONS**

We are committed to complying with relevant economic sanctions and export control regulations by identifying, mitigating, and managing the related risk in the jurisdictions we operate. The Economic Sanctions and Export Control Policy and Guidelines are our governing document for all sanctions matters.

As part of our third-party compliance due diligence requirement and Project Risk Assessment (PRA) undertaken by business units, we ensure that we do not enter into a business relationship with any entity or person which is the target or subject of Sanctions, including those directly or indirectly owned by a sanctioned entity or person. We will also not engage in any activity that would result in MISC being in breach of any Sanctions laws.

In 2022, we recorded no non-compliance related to economic sanctions.

**PERSONAL DATA PROTECTION**

MISC is committed to complying with applicable privacy and personal data protection laws. Our Corporate Privacy Policy and its Master Guidelines applies to all operations to ensure that the collection, use, processing, and storage of personal data relating to our employees, contractors, directors and other third parties are consistent with our policies.

Our Privacy Statement, which is available on our corporate website, explains the processing of all personal data collected from MISC's website, social media pages and emails. Our employees, directors and third parties are also provided with the relevant Personal Data and Information Notice to inform them on our practices regarding the treatment of personal data.

The relevant Personal Data and Information Notice provided to our employees, directors and third parties upon collection of their personal data further explains on their consent withdrawal rights including rights to access, rectify, modify, delete, object, restrict, receive, transfer their personal data and to make a complaint in relation to MISC processing their personal data. Any queries, comments or complaint can be made by our employees and the public to our Compliance department at [compliance@miscbhd.com](mailto:compliance@miscbhd.com).

In 2022, we recorded no non-compliance related to data privacy.

**CUSTOMER PRIVACY INFORMATION**

Customers are informed of our Corporate Privacy Policy through the Personal Data and Information Notice.

In 2022, we recorded no non-compliance related to customer data privacy.



OPERATING RESPONSIBLY

POLITICAL INVOLVEMENT POLICY

Employees are prohibited from using their position in MISC to influence political contributions and support politicians or their parties in any country as stated in our CoBE Part II G: Section 29.3.

No form of financial assistance is received from the government



Political contributions are not permitted

Facilities, resources and equipment cannot be used for political-related activities, campaigns or functions

LOBBYING APPROACH

Employees are required to comply with local laws concerning lobbying in any jurisdiction in which MISC engages in lobbying activity, if any. Prior to engaging in lobbying activities, guidance from Head of Department is to be obtained. MISC currently does not engage in any lobbying activities.

CONFLICT OF INTEREST ANNUAL DECLARATION

A conflict of interest occurs when one's personal interests, be it family, friends, financial, or social factors, could compromise their judgment, decisions, or actions in the workplace. Conflict of Interest (COI) Disclosure is part of the assurance exercise in relation to Avoidance of Conflict of Interest, where potential or actual situations of conflicts are identified and adequately mitigated.

We have to ensure that appropriate measures are being taken so that it poses no risks to our business as well as our directors and employees. 100% of MISC Berhad employees have completed the Annual COI Disclosure for 2022.

Our directors, employees and third parties are required to declare any conflict of interest through the following platforms:

- A dedicated email address coideclaration@miscbhd.com; or
- during the Annual Conflict of Interest Declaration period.

All declarations are properly reviewed and analysed according to the COI Analysis and Review Procedure, and any necessary mitigation steps are communicated to relevant employees.

MECHANISM FOR ADDRESSING ETHICS CONCERNS

Employees and members of the public can report any suspected unethical, unlawful conduct and/or CoBE non-compliance (including Human Rights) involving MISC or its employees, using our Whistleblowing platforms. Our Whistleblowing Policy applies to every employee, director and officer of MISC. Moreover, we also encourage our joint venture companies in which we are not a controlling stakeholder and associate companies to adopt this policy.

Whistleblowing Channel



**Email**  
whistleblow@miscbhd.com



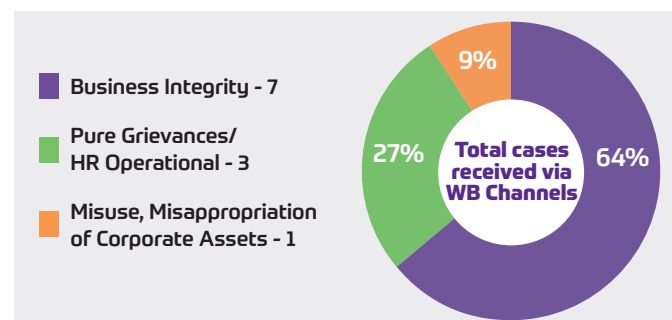
**Whistleblowing e-Form**  
(<https://whistleblow.misc.net.my/Whistleblowing/>)



**Hotline** +603 2264 0807  
from Monday to Friday during office hour (9 am - 5 pm)

Any employee or members of the public who wishes to make a report through our whistleblowing channels is not obliged to disclose his identity and may remain anonymous. We provide secured and confidential channels in which a whistle-blower will be accorded with protection of confidentiality of identity, as well as protection against any adverse and detrimental actions, to the extent reasonably practicable, provided that the disclosure is made in good faith.

In 2022, the whistleblowing channels received 27% lower whistleblowing complaints in comparison to 2021. A total of eleven (11) cases have been received and processed by MISC. Nine (9) cases were closed with no delinquency or disciplinary action as there were no wrongdoings concluded following the investigations and two (2) cases are still under investigation as at December 2022.



Business Integrity category contributes the largest number of complaints, followed by Pure Grievance/ HR Operational and Misuse, Misappropriation of Corporate Assets categories.

MONITORING & REPORTING



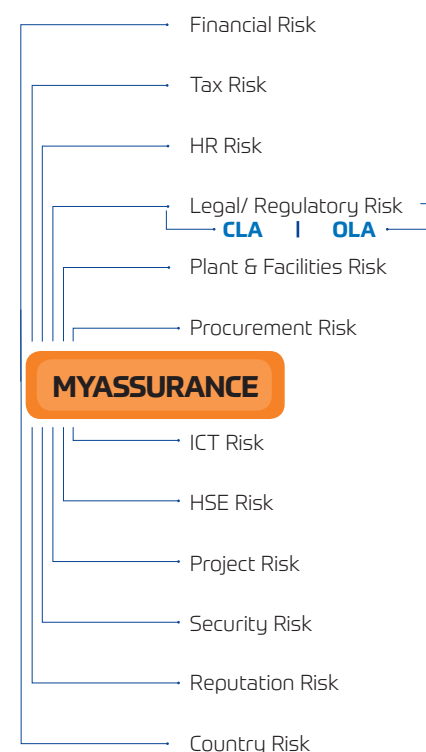
COMPLIANCE ATTESTATION

Our implementation of Head of Department (HOD) Compliance Attestation Programme is one means of gauging the compliance status of the applicable laws and regulations to MISC. In 2021, the HOD Compliance Attestation initiative was rolled out on a bi-annual basis to demonstrate the 'Tone from the Top' and management's commitment to inculcate a compliance culture throughout operations. This self-assessment attestation programme will boost transparency in line with the Guidelines on Adequate Procedures principles. The Compliance Attestation programme aims to:

- Assure the Board and management of MISC's compliance with all applicable laws and regulations; and
- Immediately document and address any concerns that may lead to potential or actual breach.

MYASSURANCE

An Integrated Assurance platform called MyAssurance is in place to capture all lines of assurance throughout the business. Legal/Regulatory risk is one of the twelve (12) Focused Risk Areas identified under the Group Risk Management where MISC group of companies shall uphold and practice good corporate governance as well as comply with all laws governing the conduct of its business operations.



Within the Legal/Regulatory Risk areas, there are two domains of laws identified:

1. Critical Legal Areas (CLA) – Reputational
2. Operational Legal Areas (OLA) – Non-reputational

CRITICAL LEGAL AREAS

The Critical Legal Areas (CLA) Functional Checklist (FC) embedded in MyAssurance is a self-assessment tool to assess our operations' legal compliance status and potential areas of weakness, non-compliance and/or unsound practices, including bribery and corruption, money laundering, conflicts of interest, sanctions, export control, competition, human rights, modern slavery, and personal data protection. Corrective actions are put in place to address any identified gaps.

OPERATIONAL LEGAL AREAS

Commencing 2022, 145 Operational Legal Areas (OLA) FCs were introduced in the same platform to capture assurances to applicable laws and regulations other than CLA. The other areas covered under OLA include health, safety and environment, petroleum, energy and utilities, financial and tax, employment, land and real property, intellectual property and building and construction among others.

Three mandatory OLA FCs were identified to be completed in 2022 as below:

1. Environment Quality Act
2. Occupational Safety and Health Act
3. Factories and Machineries Act

The rest of the OLA FCs will be done on a risk-based basis.

INTERNAL AUDIT ON COMPLIANCE RELATED AREAS

In 2022, our Group Internal Audit conducted a review on the CoBE and Compliance Governance for MISC as part of its approved 2022 Annual Internal Audit Plan with the objective of assessing the effectiveness of existing internal controls such as Conflict of Interest declaration process, Corporate Privacy Policy compliance and others. One minor improvement was identified from the audit where the agreed corrective actions shall be followed through until completion.

**CONTINUOUS IMPROVEMENT**

Continuous improvement is necessary when it comes to detecting and mitigating potential non-compliance. We continually improve the suitability, adequacy and effectiveness of our compliance and ethics programmes through reviews by the internal audit including the annual ISO ABMS internal and external audits. We monitor and report all compliance and ethics-related matters regularly.

Compliance and ethics related matters are reported quarterly to the Board via the BSRC as the governing body for good governance to ensure the objectives of the Governance Pillar strategic priorities are effectively implemented.

Whistleblowing related updates are reported quarterly to the Board via the BAC platform in line with the highest standards of integrity expected of the Company and its employees and the Malaysian Code on Corporate Governance 2021.



# RESPECTING HUMAN RIGHTS AT SEA & SHORE

As we continue to advance our Net-Zero Greenhouse Gas 2050 Commitment, we recognise that human rights play a vital role in ensuring that everyone has the right to health, well-being, safety, clean air and environment, among others. The United Nations Guiding Principles on Business and Human Rights guide us and provide the global framework to prevent and address business impacts on human rights which include climate change impacts. We also comply with guidelines of The International Labour Organisation (ILO) Declaration and The Maritime Labour Convention (MLC).



## MISC Human Rights Commitment

MISC is committed to respecting internationally recognised human rights in areas of its operations, complying with its Code of Conduct and Business Ethics (CoBE), and all relevant legal requirements.

RESPECTING HUMAN RIGHTS AT SEA & SHORE

With strong governance, forward-looking advocacy, and leading transparency, the following policies and management systems have been established to support us in this area:

- Human Rights Commitment;
- Modern Slavery Policy and Statement;
- Code of Conduct and Business Ethics (CoBE);
- Code of Conduct and Business Ethics for Third Parties (CoBE Third Party);
- Our ESG Supply Chain Assurance Programme;
- Health, Safety and Environment Policy and Safety Rules; and
- Diversity & Inclusion Statement.

Our Modern Slavery Policy and Statement is aligned with our disclosure obligations under the UK Modern Slavery Act 2015, which clearly sets out our commitment to prevent and/or respect, among others, the following matters:

- Human trafficking;
- Forced labour;
- Child labour;
- Freedom of association;
- Equal remuneration; and
- Discrimination.

The Modern Slavery Policy applies to all jurisdictions in which MISC operates and covers all individuals working onshore and offshore at all levels on behalf of all companies under the MISC Group and within MISC in any capacity whatsoever. MISC is committed to act ethically and with integrity in all our business dealings and relationships and implementing and enforcing effective systems and controls to ensure modern slavery is not taking place anywhere within MISC's own business or in any of MISC's supply chains.

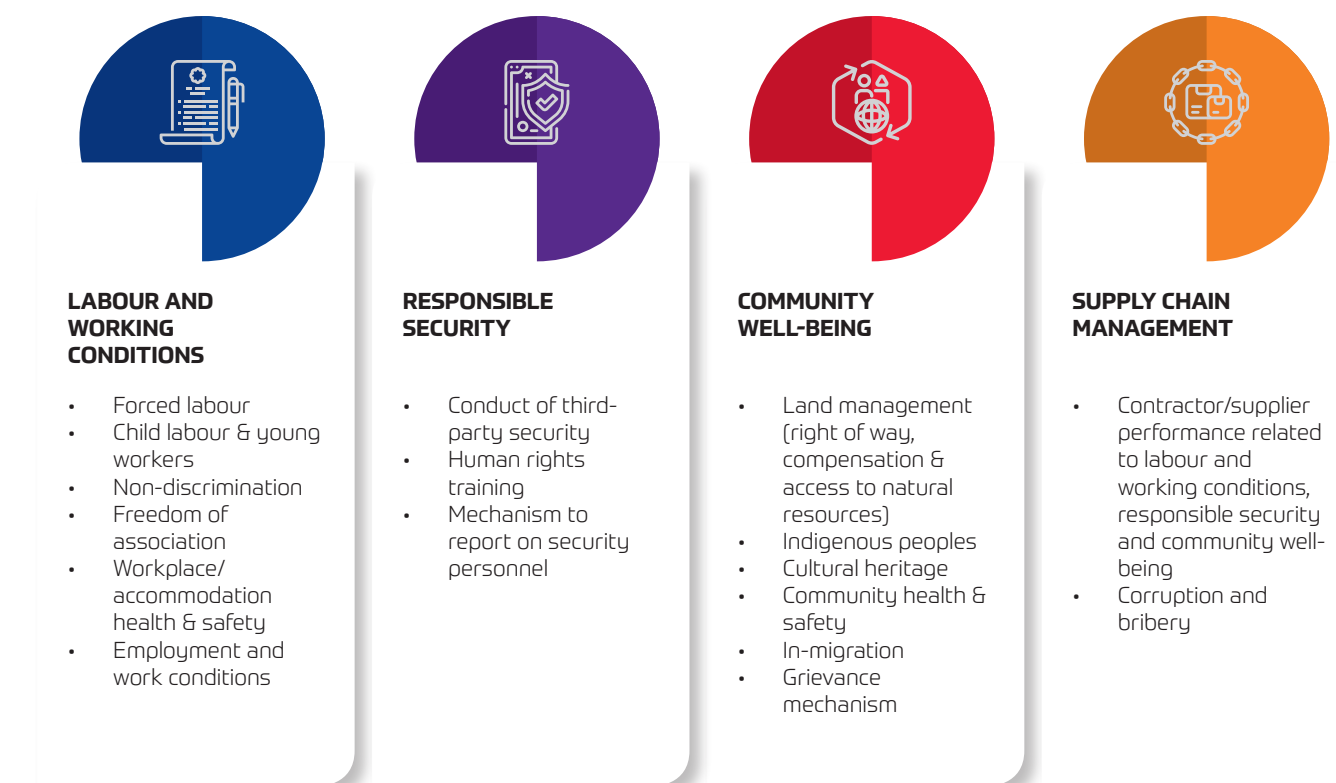
To support our commitment, we then endeavour to embed our human rights commitments into corporate practice by communicating the human rights expectations to all stakeholders, including business partners.

The table below summarises our activities in 2022:

Event	Topic / Description	Participants	No. of Participants	Total Training Hours
<b>Third Party Compliance Due Diligence Operational Guidelines (TPCDDOG)</b>	TPCDDOG's requirements in MISC operations.	Representatives from business units and subsidiaries	1,314	21,024
<b>Annual training on CoBE and Human Rights &amp; Supply Chain for third parties</b>	Understanding requirements of the CoBE which include human rights elements.	Representatives from 64 third party companies, out of which 11 companies were critical suppliers identified under the MISC Group's Supply Chain ESG assurance programme.	104	208
<b>Human Rights Management E-Learning module</b>	Provides an overview of the UN Guiding Principles on Business and Human Rights and MISC Group's Human Rights Commitments.	Employees of MISC Group of companies	2,767	2,767

ENSURING ORGANISATION SUSTAINABILITY THROUGH HUMAN RIGHTS DUE DILIGENCE

To further understand human rights impacts in MISC Group, we have identified the human rights topics and issues which form the material matters of our businesses and subsidiaries. We conducted a workshop with our internal stakeholders to take a deep dive into the risks and impacts of each business and subsidiary. The following diagram illustrates the material matters and how they are relevant to each of our business units and subsidiaries:



Material Human Rights Mapping Across MISC Group Businesses

	Community Well-being	Security	Labour & Working Conditions	Supply Chain
GAS ASSETS & SOLUTIONS		✓	✓	✓
PETROLEUM & PRODUCT SHIPPING		✓	✓	✓
OFFSHORE BUSINESS		✓	✓	✓
MARINE & HEAVY ENGINEERING	✓	✓	✓	✓
INTEGRATED MARINE SERVICES		✓	✓	✓
PORT MANAGEMENT & MARITIME SERVICES		✓	✓	✓
MARITIME EDUCATION & TRAINING	✓	✓	✓	✓

RESPECTING HUMAN RIGHTS AT SEA & SHORE

In 2019, we initiated Human Rights risks assessments on the material human rights matters for our business segments covering our shore and seafarers. The assessments were done according to PETRONAS Technical Standards on Social Risk Assessment (PTS 18.90.05). The identification and mitigation of human rights risks enables us to manage actual or potential impacts created through our business activities, including through our relationships with partners and contractors. Our robust human rights risk assessment process enables our businesses and projects to:

- Identify and address risks and impacts;
- Develop and prioritise the appropriate mitigation measures;
- Develop a monitoring and reporting programme;
- Develop effective and systematic stakeholder engagement;
- Contribute towards a robust social baseline;
- Enable the allocation of resources to manage social impacts; and
- Determine if an in-depth assessment is required to further mitigate the risks.

The figure below illustrates the human rights risks assessment process:



Our assessments confirmed our human rights practices follow the International ILO and MLC guidelines as well as other applicable laws and regulations.

The table below summarises salient human rights issues that have been identified through our human rights risk assessments:

Salient human rights issues	Business units/ subsidiaries that were assessed	Action plan for improvement
<p><b>Supply Chain Management</b> We discovered areas for improvement in the way we conduct human rights assessments in our supply chain.</p> <p>Our next step is to carry out onsite human rights assessment programme for supply chain.</p>	<ul style="list-style-type: none"> <li>• Marine &amp; Heavy Engineering</li> <li>• Integrated Marine Services</li> </ul>	<p>MISC Group has incorporated the MISC Code of Conduct and Business Ethics for third parties which is part of the Responsible Supply Chain management programme, under the MISC Group 2021-2025 Sustainability Strategy.</p> <p>As per our plan, in 2023, we will initiate human rights assessments on selected critical suppliers/vendors.</p>
<p><b>Labour &amp; Working Conditions</b> We discovered that there were improvements to be made on the level of awareness on human rights among employees.</p> <p>It was also found that there were no recent adverse cases related to Labour &amp; Working Conditions in MISC Group.</p> <p>The assessments also found that there were no incidents of violations involving rights of indigenous peoples in our operations.</p>	<ul style="list-style-type: none"> <li>• MISC Group's subsidiary and business units</li> </ul>	<p>MISC Group has developed a Human Rights e-learning module launched in 2022. The e-learning is mandatory for all employees, aimed at improving the level of awareness on human rights among employees.</p>
<p><b>Community Well-being</b> We recognise the rights of communities to a healthy and safe living environment. Our assessments confirmed that our businesses and assets are aligned to our commitment through the implementation of an emergency response plan that is suited to the needs of the relevant internal and external stakeholders. However, we also found that there is a lack of awareness among key stakeholders on the roles and details of the emergency response plans.</p> <p>Furthermore, the establishment of MISC's Grievance Mechanism Procedure ensured that communities within which we operate are provided access to remedial actions through accessible grievance mechanisms. However, some communities comprising pensioners and elderlies who have limited access to digital platforms and technology prefer to submit feedback and grievances in-person.</p>	<ul style="list-style-type: none"> <li>• Marine &amp; Heavy Engineering</li> <li>• Maritime Education &amp; Training</li> </ul>	<ul style="list-style-type: none"> <li>• We will conduct more awareness programmes and close engagements with communities and local authorities to brief them about the Emergency Response Plan.</li> <li>• Businesses and assets that have close engagements with communities are directed to appoint a grievance focal person to assist and support the reception, monitoring and remediation of grievances, in line with MISC Grievance Mechanism Procedures</li> </ul>
<p><b>Responsible Security</b> To support the Group's Security Policy and Security Management System (SeMS), MISC Group's Security Department had conducted security risk assessment for premises including the selection of potential long-term office/premise rental/relocation etc.</p> <p>The department also conducted periodical security inspections/assessments for land-based premises to ensure that security measures are compliant with relevant laws and guidelines.</p> <p>We found that all third-party security vendors/contractors underwent MISC's Third-Party Compliance Due Diligence Process.</p> <p>Our assessment also concluded that 100% of our security personnel have attended human rights training.</p>	<ul style="list-style-type: none"> <li>• MISC Group's subsidiary and business units</li> </ul>	<p>Continue reinforcing our SeMS and conduct regular risk assessments on selected premises and assets.</p>

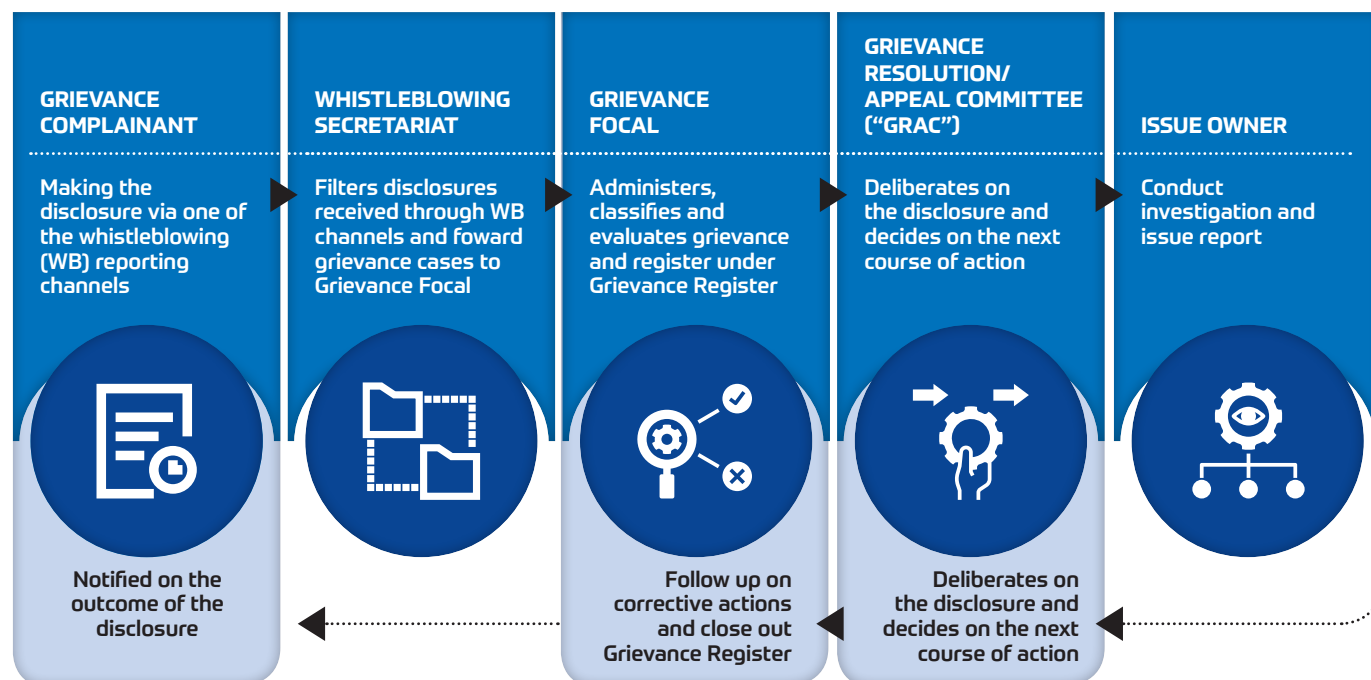
**HUMAN RIGHTS RISK ASSESSMENT FOR ALAM CAMPUS**

In 2022, we conducted a human rights risk assessment for the Maritime Education & Training (ALAM) campus in Melaka focusing on the element of Community Well-being. During the assessment, the ALAM team hosted a meet and greet with representatives of communities and local authorities on 24 May 2022 at its Sri Tanjung Hall. A sharing session was conducted to brief the attendees on MISC Group's Human Rights journey, which outlined the business's point-of-view of respecting human rights through commitment, due diligence and providing access to remedy. At the conclusion of the session, a survey was conducted with the attendees to gather their feedback.

**PROVIDING ACCESS TO REMEDY**

At MISC, we recognise that the access to remedy forms one the basic principles in respecting human rights. In this regard, we embarked on the development of our Grievance Mechanism Procedure in 2021, which plays a critical role in opening channels for dialogue, problem-solving, investigation and remedy. The Grievance Mechanism Procedure is applicable throughout the lifecycle of all projects and is a requirement for all operations regardless of the level of perceived risks. It guarantees confidentiality and is available to all internal and external stakeholders. It is also in line with our goal of promoting fair labour practices and allow us to monitor the number and type of formal individual or collective appeals received each year. The scope of grievance accepted in these mechanisms are limited to human rights impacts related to MISC Group's operations, employees and third-parties.

The detailed responsibilities of all functions that oversee and protect human rights at MISC are presented below.



**Whistleblowing / Grievance Channels**

MISC is committed to the highest standards of integrity, openness and accountability and as such, provides an avenue for all employees of MISC and members of the public to disclose any improper conduct that happens within MISC; be it misconduct or criminal offences through MISC's established internal Whistleblowing/Grievance channels such as emailing to [whistleblow@miscbhd.com](mailto:whistleblow@miscbhd.com), filling up the Whistleblowing/Grievance e-Form as well as calling the MISC Hotline at 03-2264 0807.



**HUMAN RIGHTS IN OUR SUPPLY CHAIN**

We are firmly committed to responsible business conduct throughout our supply chain. Customers not only care about the value of our delivery but also how those deliveries are produced. Addressing human rights and other critical issues in our supply chain are a business imperative and sustainability priority.

Establishing standards for our supply chain partners to follow when conducting business with us help identify and manage potential risks. Our Environment, Social and Governance (ESG) Supply Chain Assurance Programme emphasises sustainable sourcing, circular economy, health and safety, security, data privacy and business ethics compliance, which include human rights.

We introduced the MISC CoBE for Third Parties to all third parties in 2018. Then in 2021, we introduced the Third Party Compliance Due Diligence Operational Guidelines (TPCDDOG) detailing MISC's expectations on business ethics including human rights. All third parties must comply with the Human Rights Commitment and Modern Slavery Policy under Part IV: Human Rights and Modern Slavery.

We also introduced the Declaration and Integrity Pledge (DIP) for Third Parties in the same year. This mandatory document must be signed by all third parties such as joint venture partners and clients, entering into an agreement with us. Referencing compliance with the CoBE for Third

Parties, third parties must comply with MISC's Human Rights Commitment and Modern Slavery Policy as well as relevant laws and regulations.

Third parties with an actual or potential contractual business relationship with us are assessed as well as our due diligence process. Continuous stakeholder engagements are carried out to ensure human rights risks in our supply chain are managed which include risks related to:

- Modern slavery, which is one of the most common human rights issues in the maritime industry;
- All other forms of slavery such as forced labour, bonded labour, child labour, human trafficking, and other slavery-like practices;
- Responsible security practices; and
- Impact of operations to the surrounding community's well-being, if any.

We will continue to exhort our contractors and business partners to strictly comply with these principles by including human rights clauses in our contracts while performing social assessments and supporting them through awareness-raising activities.

These improvements are featured prominently in our Sustainability Strategy as part of the Responsible Supply Chain Programme.

<p><b>6</b></p> <p>Human rights assessments conducted</p>	<p><b>100%</b></p> <p>of operations that have been subject to human rights reviews or human rights impact assessments (materiality)</p>
<p><b>100%</b></p> <p>of businesses have initiated human rights reviews or human rights impact assessments</p>	<p><b>64</b></p> <p>third-party companies trained on human rights</p>
<p><b>100%</b></p> <p>Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening (human rights is a standard clause in all agreements)</p>	<p><b>2,767</b></p> <p>employees trained on Human Rights Management</p>



# STRENGTHENING CYBERSECURITY

Strengthening our cybersecurity measures is essential to protect us from potential cyber threats. Protecting our technology, assets, and critical company and operational information are our utmost priority and forms the core of our ongoing cyber risk management.

Cybersecurity is part of the Values, Assurance and Business Ethics strategic priorities under the MISC Sustainability Strategy 2021 – 2025. The five-year MISC Cybersecurity Strategic plan has been formulated to provide the roadmap for the continuous maturity of cybersecurity in MISC.

In 2022, MISC Group further increased its cybersecurity protection by introducing new controls and restrictions on confidential data. We believe it is essential to set the direction, provide a relevant security framework, build internal capabilities, pursue the information security strategy, empower the security team, and raise cybersecurity awareness within MISC to improve the Group's cyber resiliency. We train and inform our workforce on potential risks and security issues in our daily business. Both mandatory and optional training equips employees with the necessary tools to handle problems such as phishing or ransomware attempts.

## CYBERSECURITY GOVERNANCE

The cybersecurity governance framework outlines cybersecurity policies and procedures, specifies cybersecurity control standards, and ensures a consistent approach to risk management for the Group. We have established a cybersecurity team led by a qualified Chief Information Security Officer (CISO) reporting to the Group HSSE Council. Our CISO was tasked to establish and maintain our vision, strategy, and cybersecurity programmes to ensure that the Group's information assets and technologies are well protected.

The progress of our cybersecurity initiatives is reported to Group HSSE Council on a monthly basis and the MISC Board Sustainability and Risk Committee (BSRC) on a quarterly basis.

## STRENGTHENING CYBERSECURITY

Cybersecurity standards, guidelines and technologies are constantly updated and fortified across the Group to ensure alignment to the strategy and the increasingly challenging cyber landscape. In 2022, MISC Group established a new Cybersecurity Risk Management Framework and a five-year roadmap to strengthen MISC Group's cybersecurity posture. The Risk Management Framework and the five-year roadmap cover both Information Technology and Operating Technology throughout the Group. The new Risk Management Framework applies to our business and third-party operational applications as well as third-party risk.

Our Cybersecurity Control guidelines include the following:

- Data Security to protect against data breaches;
- System Development for secure standardised development of systems and applications for MISC Group;
- Computing and Mobile Devices to secure desktops, laptops, and mobile devices belonging to MISC Group users; and
- MISC Group Identity and Access Management to govern the lifecycle and management of digital identities of MISC Group user.

## CYBERSECURITY PROCESS & INFRASTRUCTURE

In line with our continuous improvement efforts to close cybersecurity gaps, we implement relevant controls to safeguard the IT infrastructure and continue with the protection of information against internal and external cyber threats.

Continuous monitoring and remediation for new vulnerabilities are carried out annually to ensure that MISC Group is not exposed to any possible exploitation attempts on potential vulnerabilities. We also regularly conduct third-party vulnerability analysis including simulated hacker attacks. During the year under review, our IT infrastructure and information security management systems were audited by external auditors. An action plan was developed to close the gaps found from the assessment.

Our cybersecurity policy is internally available to all employees. Formal and structured cybersecurity campaigns and awareness programmes were organised which included internal cybersecurity training and email phishing awareness campaigns. In developing a cybersecurity culture where everyone understands that cybersecurity is every person's responsibility, cybersecurity announcements were frequently shared to provide cybersecurity alerts and updates of cybersecurity incidents. On top of that, we have implemented our technical \*housekeeping\* measures as described below:

- MISC's Cybersecurity team constantly promote safe and secure practices when handling computer systems and data;
- New employees must undergo a cybersecurity briefing;
- All email users are subject to a monthly phishing test; and
- Frequent cybersecurity talks delivered by internal and external speakers are organised to increase cybersecurity knowledge.

## PREVENTIVE, DETECTIVE & REACTIVE MEASURES

Ensuring the security and resilience of networks and information systems is critical. Hence, we have fortified our cybersecurity efforts through the following initiatives:

- MISC Group continues to pre-emptively assess cybersecurity risks, and exploit new technologies and methods to prevent and detect occurrences by utilising various tools to monitor potential cybersecurity events;
- Additional controls were introduced on MISC Group desktops, laptops, and mobile devices in addition to Mobile Device Management to minimise attacks on these devices;
- Automation playbooks are introduced to supplement existing cybersecurity event monitoring;
- Cybersecurity incident response drills were conducted to gauge the preparedness level and knowledge of our employees on cybersecurity threats; and
- A clear escalation process is available which employees can follow in the event an employee notices suspicious cyber activity.

## KEY CYBERSECURITY INITIATIVES IN 2022


ALAM HSSE Day 2022 – <b>Maritime Cybersecurity and Email Phishing</b>	The awareness session is one of the platforms in place providing ALAM employees and sea cadets the opportunity to learn about maritime cybersecurity as well as good practices they should adopt to protect both themselves personally as well as the assets and vessels.
HSSE Leader's Forum Data – <b>Security and Proper Use of IT Systems</b>	In line with the focus on data security and protection, a session was held with MISC Group HSSE leaders to discuss the importance of data security and the proper use of IT systems especially computers and mobile devices. Apart from our HSSE leaders, we also organised an awareness session with our Board of Directors on electronic and physical data security as well as the do's and don'ts when handling data.
See. Speak. Support. Forum – <b>Data Security and User Experience</b>	A general awareness session was provided to MISC Group employees through our quarterly See. Speak. Support. Forum in collaboration with the Compliance unit to educate users on the need to protect MISC Group data and good practices that employees should adopt.

### Key highlights

**Zero**  
major cybersecurity incidents in 2022



**Zero**  
data breaches in 2022



# EMBRACING A SUSTAINABLE SUPPLY CHAIN

## RESPONSIBLE SUPPLY CHAIN

### Our Commitment

To drive sustainable practices with our suppliers

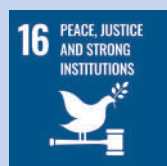
### Our Initiatives

- Implement ESG Supply Chain assurance programme emphasising on sustainable sourcing, Circular Economy, health and safety, and business ethics compliance
- Look for collaboration / partnership opportunities on pollution prevention and decarbonisation of our operations
- Promote Circular Economy across the value chain

### Our Contribution to UNSDG



Promote sustainable economic growth and decent work for all by ensuring labour rights and promote safe and secure working environments for all



Foster strong governance and business ethics culture against corruption and modern slavery and promote fair practices

At MISC, we understand that our sustainability goals cannot be achieved without the inclusion of our supply chain. Sustainable supply chain generates benefits not only for our organisation, but also brings value to society, the economy and the natural environment.

Our Responsible Supply Chain strategic initiative under the Governance Pillar of our 2021-2025 Sustainability Strategy aims to drive sustainable practices with suppliers through the following step-by-step approach:

- Define and classify critical supplier;
- Develop ESG assurance framework and conduct self-assessment;
- Awareness programmes on low-carbon, Circular Economy and ethical supply chain;
- Track Performance Improvement Plan; and
- Collaboration opportunities on sustainable products/ services.

As MISC advances on our Net-Zero GHG commitments, an effective sustainable procurement practice future-proofs our long-term objectives by enhancing our corporate reputation, lowering risk, reducing cost and growing revenue.

As we progress along our sustainability journey, our aim is to ensure that our supply chain ESG performance aligns to our ESG expectations. We expect our first-tier suppliers to comply with these standards and they in turn should demand compliance from their suppliers. The aim is to create a cascade of sustainable practices which promote a circular economy and low-carbon economy throughout the supply network.

## CRITICAL SUPPLIERS

MISC Group defines critical suppliers as suppliers whose goods, materials, services (including intellectual property (IP)/ patents) meet any of the following criteria:

- Suppliers that can cause significant impact on the competitive advantage, market success or survival of the company;
- Suppliers of critical components and non-substitutable suppliers; and/or
- Suppliers that perform high risk activities.

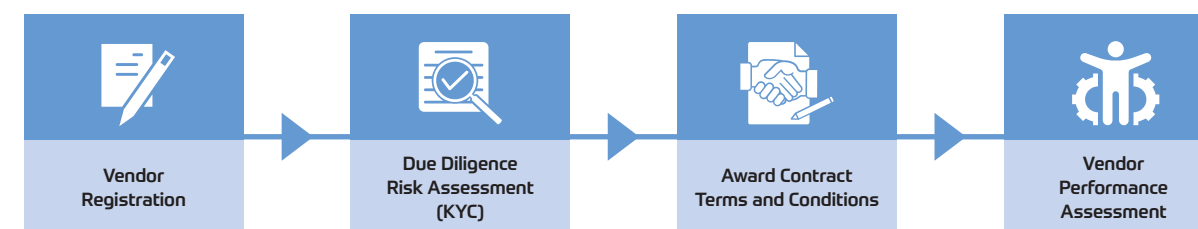
High risk activities are activities that fulfil any of the following criteria:

- High health, safety, security and environmental impacts;
- Involvement of subcontractors and/or high volume of foreign/ migrant workers participation; and/or
- Remoteness of services rendered.

## ESG EXPECTATIONS

Our Environmental, Social and Governance (ESG) requirements have been included in our supplier screening as part of the supply chain due diligence process during pre-qualification for vendor registration. This risk-based approach reviews their health, safety and environmental management systems and business ethics including human rights practices.

The ESG Touchpoints embedded within our supply chain procurement process is as below.



## VENDOR REGISTRATION DUE DILIGENCE

Prior to engagement, all third-party suppliers are also required to complete the Know Your Counterparty (KYC) Questionnaire as part of our enhanced risk assessment process.

The MISC Code of Conduct and Business Ethics (CoBE) sets out MISC's core principles with respect to ethics and integrity, competition, sanction and export control, and data privacy.

As part of our commitment, MISC expects its contractors, subcontractors, consultants, agents, representatives and others performing work or services for or on behalf of the Group to comply with all applicable laws and the relevant parts of the CoBE and any other relevant guidelines or manuals when performing such work or services.

Therefore, before MISC engages a third-party, we are obligated to conduct appropriate third-party due diligence to understand the business and background of our prospective business counter parties to ensure that we are dealing with parties that subscribe to the same values and ethical standards of integrity as MISC in the conduct of their business.

During the vendor registration stage, third-party suppliers are required to sign the Declaration and Integrity Pledge (DIP) which declares compliance with MISC's CoBE; Anti-Bribery and Corruption Manual; Human Rights Commitment and Modern Slavery Policy and policies, procedures, standards and governance relating thereto as well as to all applicable laws, rules, orders, decrees or regulations relating to anti-bribery and corruption, anti-trust/competition law, export and import controls, economic sanctions, protection of personal privacy (including personal data), human rights, anti-money laundering and occupational health, safety and environment.

EMBRACING A SUSTAINABLE SUPPLY CHAIN

ESG CONTRACTUAL TERMS

Our contracts require suppliers' performance to be guided by the principles and standards outlined in the CoBE and their policies on ethics and conduct on the following areas:

- Health, Safety and Environment;
- Corruption and Bribery;
- Economic Sanctions;
- Data Protection;
- Conflicts of Interest; and
- Human Rights.

Our Code of Business Conduct for Third Parties provides additional clarity to our suppliers regarding our expectations in the following areas:

- **Health, Safety and Environment (HSE)**  
Suppliers must comply with applicable environmental laws and regulations and conduct business with respect and care for the environment, including efforts to monitor and reduce carbon emissions, utilise energy and natural resources efficiently, and manage waste, emissions and discharge responsibly.
- **Labour Standards and Human Rights**  
We conduct our business in line with the human rights philosophy expressed in the Universal Declaration of Human Rights, the International Labour Organisation Declaration on Fundamental Principles and Rights at Work, and the United Nations Guiding Principles on Business and Human Rights. We expect suppliers and contractors working on our behalf to be guided by these principles.

VENDOR PERFORMANCE EVALUATION

After a contract has been awarded, selected critical suppliers are subjected to an ongoing Vendor Performance Evaluation process in which certain contractual obligations including ESG matters are monitored and periodically reviewed. We perform additional risk assessments of our critical suppliers and contractors, which may result in on-site audits at their premises.

MISC GROUP SUPPLY CHAIN ESG SELF-ASSESSMENT FRAMEWORK

In 2021, we developed the ESG Self-Assessment Framework in addition to our Vendor Performance Assessment. The goal is to develop a risk profile of our supply chains by identifying assessing and managing supply chain ESG risks. In 2022, we digitised this framework into our Procurement Digital System and rolled it out to 11% of our total critical suppliers.

The Self-Assessment Framework consists of seven ESG topics which are:

- Sustainability Strategy and Climate Action;
- HSE & Security;
- Ethics and Integrity;
- Competition Law;
- Data Privacy and Information Security;
- Sanction / Export Control; and
- Human Rights.

We classify our suppliers' ESG profile into the following categories:

- Needs Improvement: The organisation's ESG practices fall below industry best practice expectations and/or legal requirements and would require attention to improve in order to be aligned with MISC Sustainability expectations.
- Meets Some Requirements: The organisation ESG practices generally meet some minimal industry best practice expectations but would require some effort to improve in order to be fully aligned with MISC's Sustainability expectations.
- Meets Requirements: The organisation ESG practices meet MISC expectations and would require continual improvements to continuously be fully aligned with MISC Sustainability expectations.

Our 2022 ESG Self-Assessment showed that, 15% of surveyed suppliers were categorised in the "Meets Requirements" category, while 60% were in the "Meet Some Requirements" category and the remaining 25% were in the "Needs Improvement" category.

The plan is to roll-out the ESG Self-Assessment framework to our remaining critical suppliers in phases and expected to be completed by 2024.

SUPPLY CHAIN AWARENESS

In 2022, we conducted the following awareness and engagement with our suppliers where we shared our ESG agenda and MISC Group Supply Chain ESG Self-Assessment Framework during our annual third-party CoBE training.

[Read more on these engagements in the Stakeholder Engagement section of this Report.](#)

COMBINING ESG WITH DIGITAL PROCUREMENT

In 2022, MISC Group Procurement initiated a digital transformation to drive improvements within the procurement function with focus on Process, People, Platform and Performance.

In addition, MISC Group Procurement also introduced Category Management, which defines how we procure and how we manage our vendors. The benefits of applying Category Management include efficient use of resources, better streamlining of business strategy, centralised spend data, better vendor risk management and opportunities for cost savings.

Robust Application of Category Management allows more value creation on embedding ESG into Category Strategies. Building Preferred Supplier Networks will in turn strengthen Supplier Relationships to drive sustainability in the supply chain. Key supplier relationships will be transformed where MISC is seen as a "Preferred Customer" to drive Continuous Improvement & Innovation.

The new procurement platform complements the Category Management process where Vendor Performance and ESG Risk Assessment can be programmed for suppliers' continuous improvement. Digitisation enables automation of these assessments and analytics make monitoring of supplier's performance more efficient.



# BUILDING TRUSTED RELATIONSHIP

## STAKEHOLDER ENGAGEMENT

### Our Commitment

- To create value through stakeholder relationships

### Our Principles of Engagement



### Our Initiatives

- To collaborate with strategic partners and regularly seek feedback on sustainability agenda
- To transparently promote and communicate sustainability agenda through disclosures

### Our Contribution to UNSDG



Promote global partnership on sustainable maritime industry by encouraging multi-stakeholder partnership that mobilise and share resources on expertise and technology

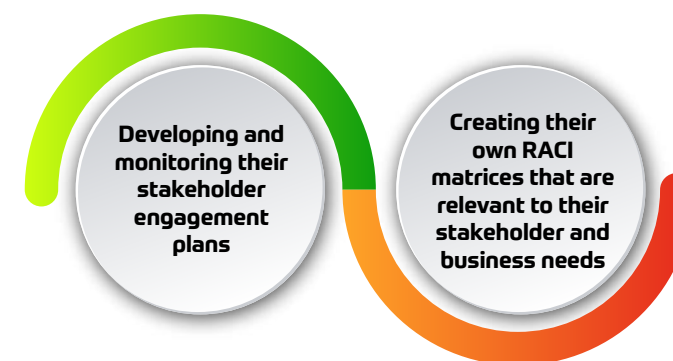
Regular engagements and responding to a wide range of stakeholders help us prioritise how we create value in line with our business and sustainability agenda. We strongly believe that our stakeholders are essential companions on our business journey. Through strategic partnerships, we have created meaningful value which has played a vital role in contributing to our Sustainability Strategy.

## STAKEHOLDER ENGAGEMENT GOVERNANCE

MISC Group's stakeholder engagement strategy aims to identify and understand key stakeholders while building trusted as well as sustainable relationships with them. It also helps the Group identify risks and opportunities and address concerns proactively.

MISC Group has a structured process of engaging with stakeholders which is documented in the MISC Group Stakeholder Engagement Guideline. The Guideline aims to standardise best practices in stakeholder engagements across the Group.

We have strengthened our stakeholder engagement governance by adopting the Responsibility Assignment Matrix or RACI (Responsible, Accountable, Consulted, Informed). Each subsidiary and business unit are responsible for:

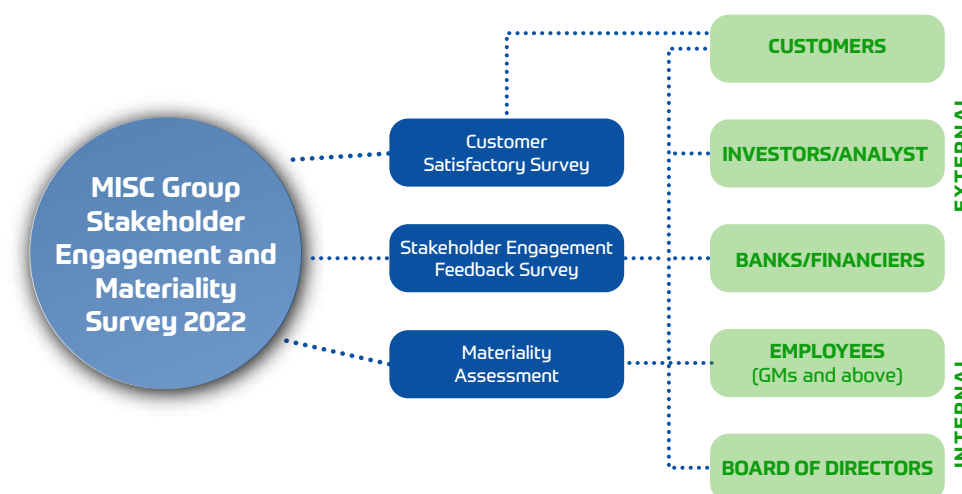


## STAKEHOLDER ENGAGEMENT SURVEY 2022

We engage our stakeholders while seeking regular feedback on our economic, environmental, social, and governance matters through activities and programmes such as townhalls, meetings, surveys, participation in industry groups and representation in industry forum.

In 2022, we had conducted the MISC Group Stakeholder Engagement and Materiality Assessment Survey which consists of three components: Customer Satisfaction Survey, Stakeholder Engagement Survey, and Materiality Assessment. The purpose of our Stakeholder Engagement and Materiality Survey is to gauge our performance based on stakeholders' expectations.

The survey was sent to our external stakeholders namely customers, investors and analysts, banks and financiers, as well as internal stakeholders namely our employees and board of directors. The overall flowchart of the survey is described as in the diagramme:



**BUILDING TRUSTED RELATIONSHIP**

**OUR STAKEHOLDER ENGAGEMENTS**

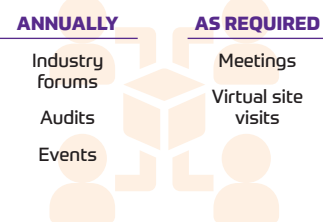
Transparency in communicating the outcomes of our sustainability agenda strengthens our relationships within our stakeholder ecosystem. Our strategic response to the material matters of concern or issues raised by our stakeholders are explained in the Our Stakeholders' Universe section of this report.

The following section highlights key engagement events according to stakeholder groups:

**OUR STAKEHOLDER: GOVERNMENT AND REGULATORS**

MISC's business model is based on strict adherence to all applicable laws and regulations that determine the license and scope of our activities in the respective countries of our operations. The Group maintains ongoing dialogues with various government bodies and regulators in the countries where we operate and the respective flagship states of our vessels.

**TYPE OF ENGAGEMENT FREQUENCY**



**MALAYSIA MARITIME WEEK 2022: GREEN TRANSITION OF THE MARITIME SECTOR**

After a two-year hiatus, one of Malaysia's most influential maritime conventions – the Malaysia Maritime Week 2022 (MMW22) – returned with MISC as the main sponsor.

Themed 'New Technologies for Greener Shipping', the three-day exhibition was packed with interesting discussions on the green transition of the maritime sector. Titled 'Navigating Towards a Sustainable Maritime Future', MISC's former President/Group CEO, Datuk Yee Yang Chien delivered his rich and valuable insights on decarbonisation, where he brought forward essential aspects of the pathway towards a sustainable maritime sector.



Datuk Yee Yang Chien delivering his speech during Malaysia Maritime Week 2022

**Stop debating about the perfect solution but start making progress today towards achieving a net-zero carbon future in 2050.**

– Datuk Yee Yang Chien, Former President/Group CEO MISC Berhad

Managing Director/CEO of Eaglestar, Captain Peter Liew also spoke on 'Alternative Fuels' which was pertinent to the theme of the conference. In his session, he brought attention to climate change, a crucial matter that has been gaining global traction and making the right fuel choices as a catalyst towards achieving decarbonisation.



MISC employees with former President/Group CEO MISC Berhad, Datuk Yee Yang Chien and former Minister of Transport, YB Datuk Dr Wee Ka Siong at MISC booth during MMW2

The convention featured multiple content-rich conferences, dialogues, and networking opportunities with experts across the industry under one roof.

**TAX GOVERNANCE: 'IT'S TIME TO EMBRACE IT' WEBINAR**

MISC was invited as one of the panellists for a webinar organised by the Malaysian Institute of Certified Public Accountants (MICPA) in January 2022. Titled 'Tax Governance: It's Time to Embrace it', the webinar provided first-hand information on how organisations can improve practices as well as disclosures relating to tax matters for better tax transparency reporting. Aligned with our corporate governance, the disclosure provides stakeholders with insights into tax policy, strategy, and other tax matters affecting the organisation.

During the panel session, our Vice President of Finance, Encik Raja Azlan Shah emphasised how our commitment to the principles of corporate governance and ESG initiatives has increased investors' confidence in MISC and helped enhance our ability to maximise long-term shareholder value and safeguard our reputation. Joined by more than 600 participants virtually across Malaysia, the webinar was MICPA's inaugural advocacy programme to achieve greater excellence in tax governance.

**MINISTRY OF ENERGY AND NATURAL RESOURCES VISITS TO REGASIFICATION TERMINAL JETTY SUNGAI UDANG MELAKA**

In November 2022, our floating storage unit, *Tenaga Empat* received an honorary visit from the Ministry of Energy and Natural Resources led by the Deputy of Chief Secretary.

The delegates were warmly welcomed and greeted by the Master of FSU1 & FSU2, Captain Shahrinnizam Amir, along with Captain Pavan Kumar, the Head of Commercial Operations and Chartering of GAS Business and the rest of the team from GAS Business and Eaglestar.

Serving the purpose of the visit, the officials were briefed how *Tenaga Empat* operates as a flexible LNG storage solution and provides an alternative to land-based facilities. The tour was part of a strategic engagement initiative aimed at providing key stakeholders with an opportunity to experience facilities under the PETRONAS Group of Companies.



**BUILDING TRUSTED RELATIONSHIP**

**OUR STAKEHOLDER: SHAREHOLDERS, INVESTORS AND FINANCIAL PROVIDERS**

The Group's primary objective is to create value for shareholders as the owners and providers of equity capital to the business. The Group is accountable to its stakeholders and reports to shareholders and the public by effectively communicating our operational and financial performance.

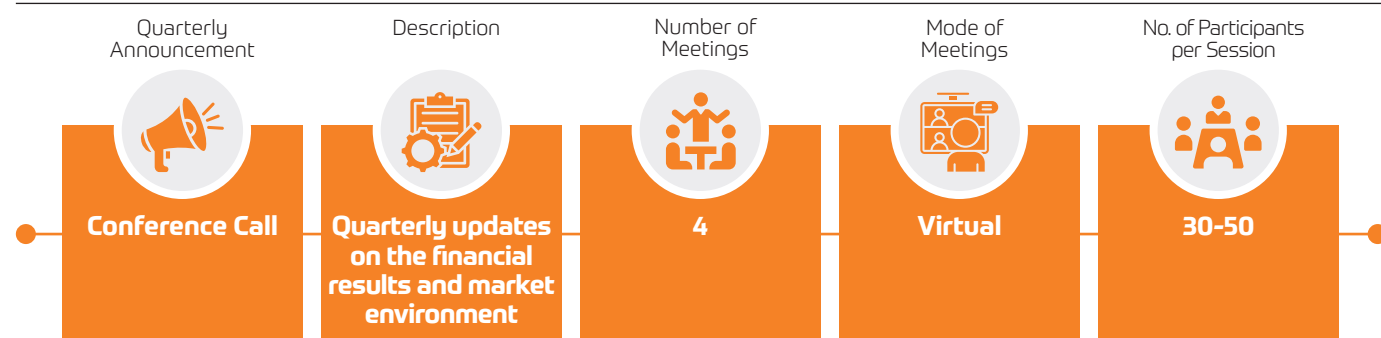
TYPE OF ENGAGEMENT FREQUENCY		
AS REQUIRED	ANNUALLY	QUARTERLY
One-on-one/ Large Group Meetings	Annual General Meeting (AGM) and Integrated Annual Report (IAR)	Analyst Briefings
Investor Relations Webpage and Corporate websites	Investor Conference	
Emails		
Surveys		

**INVESTOR RELATIONS ACTIVITIES IN 2022**

**Large Group Meetings/ One-on-one Meetings**

Investor Meetings	Description	Number of Meetings	Mode of Meetings	No. of Participants
Large group meeting	CEO Engagement Session with analysts	4	Physical	10-20
One-on-one meeting	Private meetings	15	Physical & Virtual	4-10

**Analyst Briefings**



**General Meeting**



27 April 2022



Annual General Meeting

**MISC PRESIDENT/GROUP CEO ENGAGEMENT SESSIONS WITH EQUITY ANALYSTS**

As part of MISC's ongoing programme to foster better relationships with the investment community, the Investor Relations team from Corporate Planning division organised engagement sessions for equity investment professionals to hear first-hand from our PGCEO the latest insights into MISC's business. Analysts from institutional investors, asset management, insurance companies, securities houses and investment banks attended the session.

**SHIPYARD VISIT AND MHB MD/CEO ENGAGEMENT SESSION WITH EQUITY ANALYSTS 2022**

MISC continued with its efforts to nurture stronger relationships with the investment community by holding an offsite day with our stakeholders. Investors and analysts were invited to our marine and heavy engineering shipyard in Pasir Gudang to provide a better understanding within the MISC group of companies and the sustainable value that MISC creates for the stakeholders.

During the visit, the participants were exposed to the complexity of fabricating offshore solutions where they were able to view and experience the operations up close. We also shared our strategic focus, how we are strengthening the core capabilities, the international opportunities we are pursuing, and our efforts on client retention and exploring new opportunities in the Marine space.



**MISC GROUP ANNUAL BANKERS ENGAGEMENT 2022**

The MISC Group Annual Bankers Engagement was attended by 65 senior bankers and representatives from various local and global financial institutions. All our Management Committee members were present to host our valuable banking partners. The session allowed us to demonstrate our potential strengths and possibilities in moving energy to build a better world. At the same time we also introduced our value proposition, future projects, sustainability agenda and updates that would help us explore various financing mechanisms.

Senior bankers and representatives from local and global financial institutions joined our leaders as they shared our business strength, stability, and aspirations. The engagement provided us with excellent opportunities to network, connect, and strengthen our relationships with bankers.



Senior bankers and representatives from local and global financial institutions during the Annual Bankers Engagement 2022



MISC Berhad's President/Group CEO deliver his speech during MISC Group Annual Bankers Engagement 2022

**BUILDING TRUSTED RELATIONSHIP**

**OUR STAKEHOLDER: BUSINESS PARTNERS, SUPPLIERS AND VENDORS**

**TYPE OF ENGAGEMENT FREQUENCY**

ANNUALLY	AS REQUIRED
Conferences	Meetings
Forums	Procurement and appointment process
Business partner events	
Virtual site visits	

**MISC GROUP APPRECIATION RECEPTION 2022**

In appreciation of our partnerships and trusted relationships that we established with our business stakeholders, MISC Group held its Appreciation Reception at Tokyo in September 2022 after a two-year hiatus. More than 100 representatives from terminal operators, business partners, and service providers attended the reception including our distinguished senior managements team. The event was graced by Ambassador of Malaysia to Japan. It was a great avenue to connect and network with them, while showcasing our continuous engagements and customer-focused approach in the way we conduct our business.



*The delegations during Appreciation Reception 2022 with the guest of honour, Ambassador of Malaysia to Japan*

**THIRD PARTY BRIEFING ON COBE AND SUSTAINABILITY**

During the year, the Annual CoBE Training for MISC Group Third Parties 2022 was conducted through an online platform. A total of 104 participants took part, consisting of 64 third parties of MISC Group, out of which 11 third parties were critical suppliers identified under the MISC Group's ESG Supply Chain Assurance Programme.

The training forms part of MISC's initiative on enhancing MISC Group's Supply Chain Management to ensure that our third parties are aware of our CoBE and cascading our ESG and HSSE expectations for third parties respectively.

**HSSE PARTNERS' SUMMIT 2022**

On November 2022, we held the MISC HSSE Partners' Summit 2022 which was attended by more than 180 business partners together with our management team and respective HSSE personnel.

During the event, the HSSE Excellence Recognition Award were presented to eight business partners for their HSSE best practices in achieving safe and efficient operations. Following the award session, a dialogue was conducted with our business partners on the theme "Together Towards Generative HSSE".

The Summit seized the opportunity to inaugurate our very own Generative HSSE Culture Mascot – ASHE. ASHE means A – Act for S – Sustainable, H – HSSE and E – Excellence. The mascot is an embodiment of MISC's Generative HSSE culture in always doing the right thing even when no one is watching, which corresponds to how we do business at MISC.



*MISC's Management Committee members, partners, and contractors with HSSE Culture Mascot – ASHE*

**EAGLESTAR ENGAGEMENT WITH BUSINESS PARTNERS, SUPPLIERS AND VENDORS**

In 2022, Eaglestar conducted numerous engagements with business partners, suppliers, and vendors which consisted of webinars, trainings, site visits, safety campaigns and project discussions.

Among the webinars conducted were 'Building and Operating Dual-Fuel Vessels' in collaboration with Seatrade Maritime News. The objective of the webinar was to offer an in-depth discussion on dual-fuel operations and to create awareness on the significant value of dual-fuel vessels as one of the key pathways in addressing decarbonisation.

On top of that, Eaglestar together with Alfa Laval had conducted a webinar titled 'Alfa Laval Boiler and GCU training' with the objective of discussing the latest technology and updates with equipment specialists. As well as that, a sharing session was held on existing issues and solutions at the industry level.

Apart from the webinars, Eaglestar also organised training sessions, project discussions and site visits with the aim of deepening engagements with business partners, enhancing engineers' competencies in the latest engine designs and operations as well as strengthening the relationship between Eaglestar engineers and specialist designers.

**BUILDING TRUSTED RELATIONSHIP**

**OUR STAKEHOLDER: CUSTOMERS**

In 2022, we conducted a customer satisfaction survey. We used Net Promoter Score (NPS) to gauge customers' experience and their loyalty ratings. Through the metrics, MISC obtained valuable feedback to further improve our services.

In 2022, we conducted a total of 157 engagement with our customers throughout the Groups.

**TYPE OF ENGAGEMENT FREQUENCY**

ANNUALLY	REGULARLY	TWO YEARS ONCE
Conference	Meetings	Surveys & Feedback
Sharing Sessions		
Customer Appreciation Events		

**OUR STAKEHOLDER: EMPLOYEES**

**MISC GROUP TOWNHALL 2022**

MISC Group Townhall 2022 is an annual event where our PGCEO addresses everyone within the Group via live streaming at Menara Dayabumi, Kuala Lumpur across our global offices from various locations, including our vessels.

In a talk show setting, our former President/Group CEO, Datuk Yee Yang Chien asked everyone to continue to keep things simple and sweet. For 2022 priorities, the annual voyage planner was simplified into a sustainable voyage guide namely, Pushing Boundaries for Growth and Fortifying the Core. He introduced two parallel growth strategies: to continue growing our Business-as-Usual portfolios and a long-term 30-year strategy.

Apart from the Group level townhall, our business units and subsidiaries also conducted townhall session with their respective employees.

**TYPE OF ENGAGEMENT FREQUENCY**

AS REQUIRED	MONTHLY	HALF-YEARLY
Learning and development programmes	Management Walkabout	Performance Review
DAILY	QUARTERLY	ANNUALLY
Newsletters and Alerts	Townhall	Team Building Day
	Roadshows and Forums	TWO YEAR ONCE
		Surveys



**GAS BUSINESS EMPLOYEE ENGAGEMENT 2022**

The GAS Business Stakeholders Management team organised an employee engagement event each quarter for all GAS Business employees including those in the Japan and London Offices. The events were a demonstration of our appreciation of their hard work and achievements and aimed to strengthen the bond between management and employees.



**OFFSHORE BUSINESS TOWNHALL**

Offshore Business organised a series of townhall involving top management and employees as part of its employee engagement activities throughout the year. Each townhall was attended by around 300 employees in both the physical and virtual medium.



**MHB TOWNHALL**

Around 1,600 employees attended MHB annual townhall with the theme 'MHB Returns!'. Managing Director/CEO, Encik Pandai Othman conducted the townhall in November 2022. During the session, he recapped MHB's achievements throughout 2022. It was an electric atmosphere which motivated employees to sprint the last mile and close the year with positive results.



**MMS CEO ENGAGEMENT SESSION**

MMS successfully organised CEO Engagement Sessions with its employees at Menara Dayabumi and all its main operational locations at Kertih Port, Sungai Udang Port, Kimanis and Miri. MMS' Managing Director/CEO, Encik M Denny M Isa, together with the Management Committee members, met and engaged with over 140 of MMS employees physically. Encik Denny shared the Q1 2022 Performance and Achievements, as well as his aspirations and expectations to drive MMS forward. It was a fruitful session where employees were able to connect and get involved in two-way communications with the Management.





**BUILDING TRUSTED RELATIONSHIP**

**EAGLESTAR TOWNHALL**

During the year, Eaglestar conducted three townhall sessions involving around 150 attendees. The townhall served as a platform for sharing Eaglestar's key objective and deliverables as well as updates on quarterly 2022 performance.

In addition to that, Eaglestar is also committed to maintain good relationship with all employees including the seafarers. Towards seeing this through, Eaglestar organised a series of engagement sessions involving seafarers via webinars and workshops conducted in a webinar-based and hybrid mode. The webinars are mostly conducted on either a quarterly or half yearly basis with different speakers involved.



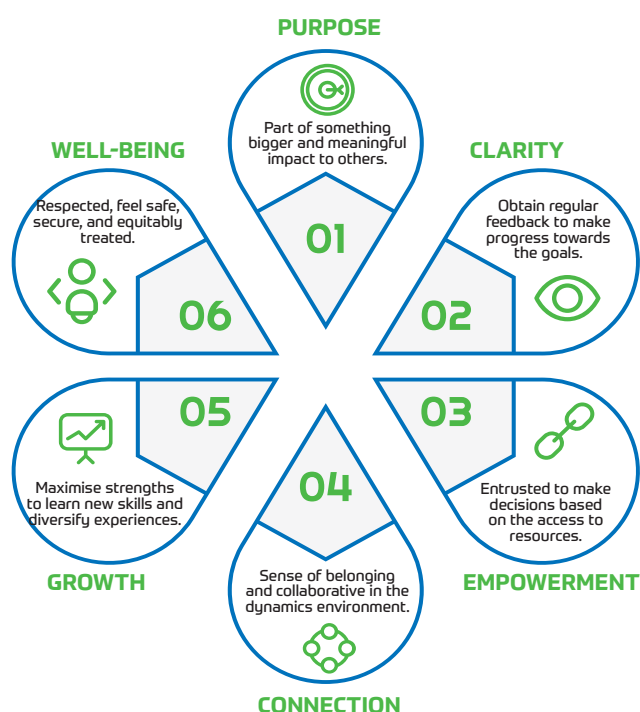
Eaglestar also conducted the Junior and Senior Officer Focus Seminar which aimed to promote two-way communications and interactions between sea and shore-based personnel. The seminar also served the purpose of generating innovative thinking and exploring continuous improvements through interactions with speakers and other participating colleagues.

**EMPLOYEE ENGAGEMENT SURVEYS**

**PETRONAS ORGANISATIONAL CULTURE SURVEY**

The PETRONAS Organisational Culture Survey 2022 (POCS 2022) is conducted every two years as a continuous feedback loop to seek feedback from employees on their overall view of the PETRONAS culture and to understand what really matters to our people, what drives them, and what we can do better to create an even stronger workplace culture for our business growth.

**POCS 2022 Elements**



**MISC COMPLIANCE AND ETHICS CULTURE SURVEY**

We conducted the annual MISC Compliance and Ethics Culture Survey in September 2022 for employees who had been with MISC Group for more than six months. The main purpose of this survey was to gauge the effectiveness of the compliance and ethics programme/initiatives as perceived by targeted employees. It also assessed the employees' depth of understanding and assimilation of the MISC's CoBE since its adoption and rollout in August 2012.

**Key topics for Compliance and Ethics Culture Survey 2022**



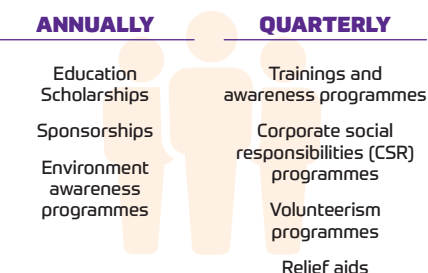
For details of our Compliance and Ethics Culture Survey, please refer to Operating Responsibly section.

**OUR STAKEHOLDER: COMMUNITY**

We operate in a varied and rapidly developing economic region. We recognise that strong community engagement and participation are necessary components of our social licence to operate. We are committed to positively impact communities directly and indirectly affected by our activities. This commitment is implemented through our Sustainability Community Investment Strategy, focusing on the themes of education, environment, health, safety and well-being that are linked to our business strategy.

For more details, please read Partnering with the Community section.

**TYPE OF ENGAGEMENT FREQUENCY**



**LIST OF TRADE ASSOCIATIONS AND PRINCIPLE**

Our involvement in industry associations allows us to contribute to developing the local and international shipping industry while benefitting its economic, environmental and social aspects. We disclose our involvement and memberships in organisations dedicated to climate-related issues. We also demonstrate our support for mitigating climate change through memberships in business associations, public policy, and regulation as well as principle and charter. In addition, we aim to align our support on climate change in line with the global goal of restricting global temperature rise to 1.5°C. These commitments apply to all our subsidiaries and business units.

**Climate-Related Trade Associations and Principle/Charter**

Principles or charters	Description of the principles/charter	Our Position
<b>Call to Action</b>	The Call to Action was developed by a multi-stakeholder task force convened by the Getting to Zero Coalition with members from the entire maritime ecosystem including shipping, chartering, finance, ports, and fuel production. The Call to Action was delivered to world governments in November 2021 before COP26.	We are the signatory to the Call to Action for shipping decarbonisation.
<b>Carbon Disclosure Project (CDP)</b>	CDP is a not-for-profit organisation that administers the global disclosure system used by investors, businesses, cities, states and regions to manage their environmental impacts.	We disclose our carbon management to CDP annually.
<b>Getting to Zero Coalition</b>	Getting to Zero Coalition is a partnership between the Global Maritime Forum, Friends of Ocean Action and the World Economic Forum. The coalition is a powerful global alliance of more than 70 public and private organisations committed to developing zero-emission vessels by 2030 and furthering international shipping's decarbonisation in line with the IMO's aspirations.	We collaborate with critical maritime strategic partners on a joint development project for an ammonia-fuelled tanker that supports the shipping industry's drive for a decarbonised future. The joint development enables industry players with similar mindset to pursue decarbonisation and reduce the effect of climate change. The coalition aims to develop commercially viable zero-carbon emission, deep-sea going vessels by 2030.
<b>Membership</b>	<b>Our Position</b>	
<b>Climate Governance Malaysia (CGM)</b>	CGM is Malaysia's chapter of the World Economic Forum's Climate Governance Initiative that supports the awareness-raising, best-practice sharing and implementation of good climate governance within corporate boards. MISC is a corporate friend of the CGM.	

For more details, please refer to The Castor Initiative.

**BUILDING TRUSTED RELATIONSHIP**

**List of other membership and trade associations**

Membership	Our Position
<b>Gard</b>	The Gard Group is a shipowner-controlled diversified provider of protection and indemnity (P&I), marine and energy insurance products. We play an active role with AET's President & CEO sitting on the Board of Gard P&I.
<b>Global Maritime Forum (GMF)</b>	GMF is an international not-for-profit organisation committed to shaping the future of global seaborne trade to increase sustainable long-term economic development and human well-being. We are a strategic partner and founding member of GMF with a seat on its Advisory Council. We play an active role in shaping the future of maritime trade by collaborating on improving the environment by reducing harmful GHG.
<b>GlobalMET: Maritime Seafarer Training &amp; Education Association</b>	GlobalMET is a Hong Kong-based non-profit organisation engaged in maritime training and education research through our education arm, ALAM. The participants established GlobalMET to support the IMO's goals of "safer ships and cleaner oceans" and recognise the vital importance of maritime education and training in meeting the demands of expanding trade and economic growth.
<b>International Association of Independent Tanker Owners (INTERTANKO)</b>	INTERTANKO promotes the interests of independent tanker owners in international forums and organisations. MISC has representatives chairing and actively involved in the Gas Tanker Committee (GTC) and the Human Element in Shipping Committee (HEISC). MISC to look at issues affecting the industry and also encourages best practices and standards that surpass regulations, provide owners with expert counsel on gas tanker specific technical and commercial matters. Our work in the HEISC fosters the interests of industry on the role of the human element in the adoption of industry best practices for the safe operation of tankers and in the adherence to strict compliance with operational and environmental regulations and practices. We play an active role in INTERTANKO through collaborations with peers and constructively listening to feedback from industry partners and to resolve members' concerns. The GTC's role is to set and agree on policies which shapes INTERTANKO's Strategic Workplan.
<b>Institute of Marine Engineering, Science and Technology (IMAREST)</b>	ALAM is a member of IMarEST, the world's largest membership organisation and learned society for marine professionals working in marine engineering, science, and technology. The institution is a member of the UK Science Council and an Engineering Council UK-licensed entity.
<b>Malaysia Board of Technologists (MBOT)</b>	ALAM is a member of MBOT that recognises technologists and technicians as professions capable of demonstrating the prestigious side of technology, alongside Technical and Vocational Education and Training (TVET), as critical components of weathering the Industrial Revolution 4.0 and propelling the National Transformation 2050 (TN50).
<b>Malaysian Gas Association (MGA)</b>	MGA promotes a vibrant and sustainable Malaysian gas industry. We are a Council Member of MGA and hold the Chairmanship of the Government and Regulatory Affairs Working Committee. This membership has broadened our business base and international ventures by participating in International Gas Union (IGU) events and offering the expertise of our collaborative projects.
<b>Malaysia Shipowners' Association (MASA)</b>	MASA frequently engages the government and the industry to strengthen existing relationships and form new ones. We play an active role in MASA by highlighting issues that develop the national shipping industry.
<b>Malaysia Women in Energy (MyWiE)</b>	MyWiE is an advocacy group that champions equal opportunity for women in the energy sector by bringing industry leaders together to encourage equal opportunity and diversity at all levels and categories. We play an active role as the Chairman of the Advisory Panel.
<b>Maritime Anti-Corruption Network (MACN)</b>	MACN is a global business network that envisages a corruption-free maritime industry that provides fair trade for the benefit of society. We align our contribution to MACN with the United Nation's Sustainable Development Goals, particularly goals 16 (Peace, Justice, and Strong Institutions) and 17 (Partnership for Goals).

**List of other membership and trade associations**

Membership	Our Position
<b>Oil Companies International Marine Forum (OCIMF)</b>	OCIMF is widely recognised as the voice of the oil industry. It provides expertise in the safe and environmentally responsible transport and handling of hydrocarbons in ships and terminals and setting standards for continuous improvement. MMS is officially a member of OCIMF, which qualifies us as the official marine assurance and compliance representative for PETRONAS Group of Companies.
<b>Society of International Gas Tanker and Terminal Operators (SIGTTO)</b>	MISC is a member of the SIGTTO, and our representatives sit on the SIGTTO Board as well as the General-Purpose Committee (GPC). The society provides a platform for the exchange of technical information and experience between industry members. Through SIGTTO's affiliation at IMO, we can influence to address common problems and derive agreed-upon criteria for best practices and accepted industry standards affecting safety of Gas Tankers.
<b>The London P&amp;I Club</b>	The London P&I Club plays a crucial role in coordinating and promoting the collective strength of the P&I industry on behalf of the global ship owning community. We benefit from being a committee member by sharing knowledge and expertise of insuring and reinsuring shipowners' liabilities.
<b>National Institute for Occupational Safety and Health (NIOSH)</b>	Through our marine and heavy engineering subsidiaries, we are a member of the NIOSH. As a member, it demonstrates our successful implementation of occupational safety and health (OSH) management system, promoting OSH amongst employees and emphasise our dedication and commitment towards enhancing occupational safety and health in Malaysia.
<b>Pasir Gudang Emergency Mutual Aid (PAGEMA)</b>	We are a committee member of PAGEMA, via our marine and heavy engineering subsidiaries. We actively involved in emergency exercises and participated in annual emergency drills conducted by other PAGEMA members to test the preparedness of the ERT, Management and employees in dealing with the emergency and their ability to respond to rescue activities.
<b>Association of Marine Industries of Malaysia (AMIM)</b>	As a committee member, we positively contribute towards the sustainable development of Malaysian shipbuilding and ship repair in collaboration with other industry players.
<b>Malaysia Oil &amp; Gas Services Council (MOGSC)</b>	MOGSC aims to contribute towards nation building and national economy through positive participation in the overall oil and gas landscape in Malaysia. Being member enables us to engage and collaborate with industry stakeholders, associations and government agencies in the sector we operate within.
<b>Malaysia Offshore Contractors (MOCA)</b>	MOCA is an association of offshore contractors for oil & gas (O&G) industry in Malaysia which aim to promote cohesive working relationships amongst various contractors in O&G offshore business. We play an active role as the President and EXCO members of the MOCA.
<b>Welding Institute of Malaysia (WIM)</b>	WIM serves as a platform for its members to raise awareness on the science and practice of welding, joining, cutting and related technologies, and quality in welding workmanship. Our marine and heavy engineering is a member of WIM.
<b>Singapore National Employers Federation (SNEF)</b>	SNEF is the body representing employers and is dedicated to advance tripartism and enhance labour market flexibility to enable employers to implement responsible employment practices. As a member of SNEF, Eaglestar will benefit from SNEF through its partnership and engagement with various Government Agencies and Knowledge Experts. SNEF also provide a wide range of assistance programmes and services to support its members to achieve excellence in responsible employment practices.
<b>Singapore Business Federation (SBF)</b>	SBF is the apex business chamber championing the interests of the Singapore business community in the areas of trade, investment and industrial relations. Eaglestar, as member of this organisation benefits from the following: <ul style="list-style-type: none"> <li>• A conducive platform for businesses to connect, engage and deepen relationships for business collaborations.</li> <li>• SBF's global network helps connect businesses to capture opportunities for expansion and growth.</li> <li>• A variety of events and programmes to help companies broaden and deepen the knowledge and skills of their employees for growth and sustainability.</li> </ul> SBF represents the collective voice of the business community in constructive engagement with the government and relevant organisations.

**BUILDING TRUSTED RELATIONSHIP**

**List of other membership and trade associations**

Membership	Our Position
<b>Lloyd's Register (LR) South-East Asian Technical Committee (SEATEC)</b>	This committee provides Eaglestar with the opportunity to share our operational experience with our new LNG dual-fuel Aframax Tankers, our bunkering experiences and Boil off Gas (BoG) management for further sustainability. We are able to showcase Eaglestar's capabilities at interactive sessions with other LR Technical Committee members.
<b>Maritime Institute of Malaysia (MIMA)</b>	MIMA is a policy research institute set up by the Malaysian Government to look into matters relating to Malaysia's interest at sea, and to serve as a national focal point for research in the maritime sector. As a member of MIMA, Eaglestar benefit through policy papers, publications (in print and online), advisory, consultancy, workshops/training courses and events such as talks, forums, seminars and conferences, all related to maritime issues.

We contributed RM2.96 million to our trade association and membership in 2022.

As a responsible member of the global maritime value chain, we also strongly support externally developed economic, environmental, and social charters and principles.

Principles or charters	Description of the principles/charter	Our Position
<b>The Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (The Hong Kong Convention)</b>	The Hong Kong Convention on Ship Recycling recognises ship recycling as the most environmentally sound method of disposal as most ship material can be reused even after their end-of-life.	We develop and maintain inventory of hazardous materials and dispose of vessels responsibly, following the Hong Kong Convention on Ship Recycling.
<b>Neptune Declaration on Seafarer Wellbeing and Crew Change</b>	COVID-19 caused an unprecedented crew change crisis in 2020. Many seafarers were left stranded working aboard ships beyond their initial contracts due to pervasive lockdowns, travel restrictions and border closures. Along with over 300 companies and organisations from the maritime value chain, we joined a worldwide call to action to end the crew change crisis, which caused seafarer fatigue and affected their physical and mental well-being.	We are a signatory to The Neptune Declaration on Seafarer Wellbeing and Crew Change, which defines four main actions to facilitate crew changes and keep global supply chains functioning: <ul style="list-style-type: none"> <li>• Recognise seafarers as critical workers and prioritise COVID-19 vaccines for them;</li> <li>• Establish and implement gold-standard health protocols based on existing best practice;</li> <li>• Increase collaboration between ship operators and charterers to facilitate crew changes; and</li> <li>• Ensure air connectivity between key maritime hubs for seafarers.</li> </ul>

**LIST OF ESG DISCLOSURE**

MISC provides ESG disclosures to the following key ESG Ratings:



# ADDITIONAL INFORMATION

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# PERFORMANCE DATA

Financial Pillar				
	Unit	2022	2021	2020
<b>FINANCIAL PERFORMANCE</b>				
Revenue	RM million	13,867.0	10,671.7	9,401.2
Operating profit	RM million	3,102.0	1,948.3	2,017.2
Profit/(loss) before taxation	RM million	1,874.3	1,774.6	(123.6)
Profit/(loss) after taxation	RM million	1,835.0	1,733.5	(169.8)
Tax for the year				
- Malaysia <sup>1</sup>	RM'000	37,314	28,940	41,199
- Foreign <sup>2</sup>	RM'000	25,130	18,644	17,999
<b>CLIMATE-RELATED INDICATORS</b>				
Expenditure on climate-related	RM	2,105,212	14,698,849	3,821,891
Expenditure on environmental protection initiatives (including climate change and environmental management systems)	RM	55,134,046	–	–
<b>Transition Fuel <sup>3</sup></b>				
Low Sulphur Marine Gas Oil	RM	14,415,212	–	–
<b>Total</b>	RM	14,415,212	–	–
<b>REVENUE</b>				
<b>Dual-Fuel Vessels</b>				
- Aframax	RM	149,584,640	59,294,863	
- DPST	RM	401,975,867	184,286,393	
- VLCC	RM	42,825,598	N/A	
<b>Environmentally-friendly vessels</b>				
- VLEC	RM	371,687,865	293,853,386	
- LNG carrier	RM	391,871,984	381,025,021	
- 2 <sup>nd</sup> generation DPST	RM	619,837,243	316,405,235	
<b>Total</b>		1,977,783,198	1,234,864,898	
EEDI		Please refer to Environmental pillar data performance		
Scope 1, 2 and 3		Please refer to Environmental pillar data performance		

Note:

<sup>1</sup> Tax for the year was calculated at the statutory tax rate of 24% of the assessable profit for the financial year. The international shipping and sea-going operations of the Group currently eligible for income tax exemption under Section 54A of the Income Tax Act, 1967. The Group has been granted with Investment Tax Allowances and Leasing incentives for its qualifying activities.

<sup>2</sup> Tax for the year was calculated at the statutory tax rate of the assessable profit for the financial year based on the respective countries' tax rate in which the Group has a taxable presence. The Group also qualifies for shipping tax exemptions in foreign jurisdictions on its international shipping and sea-going operations.

<sup>3</sup> Fuel cost purchased by MISC Group only.

For more details on our Financial performance, please refer to MISC Integrated Annual Report 2022 Financial Statement section.

Environmental Pillar				
	Unit	2022	2021	2020
<b>TOTAL GHG EMISSIONS (Scope 1 &amp; 2)</b>				
Scope 1 <sup>1</sup>	tonnes CO <sub>2</sub> e	4,161,800	4,148,617	4,132,383
Scope 2	tonnes CO <sub>2</sub> e	40,511	37,946	48,531
CO <sub>2</sub> Biogenic <sup>A</sup>	tonnes CO <sub>2</sub>	955	–	–
<b>TOTAL SCOPE 1</b>	tonnes CO <sub>2</sub> e	4,161,800	4,148,617	4,132,383
<b>Breakdown by operations</b>				
Shipping	tonnes CO <sub>2</sub> e	4,132,289	4,121,458	4,103,313
- Gas	tonnes CO <sub>2</sub> e	2,535,686	2,506,131	2,319,137
- Petroleum	tonnes CO <sub>2</sub> e	1,549,196	1,557,596	1,714,706
- Product	tonnes CO <sub>2</sub> e	42,751	51,988	64,768
- Workboat	tonnes CO <sub>2</sub> e	4,656	5,744	4,702
Non-Shipping	tonnes CO <sub>2</sub> e	29,511	27,158	29,070
<b>TOTAL SCOPE 2</b>	tonnes CO <sub>2</sub> e	40,511	37,946	48,531
Non-Shipping	tonnes CO <sub>2</sub> e	40,511	37,946	48,531
<b>TOTAL SCOPE 3 (Material Categories**)</b>				
<b>Breakdown by Category</b>				
Category 1 – Purchased Goods and Services from MISC's Marine and Heavy Engineering Business**	tonnes CO <sub>2</sub> e	456,650	–	–
Category 3 – Fuel and Energy Related Activities**	tonnes CO <sub>2</sub> e	1,151,431	–	–
Category 6 – Business Travel	tonnes CO <sub>2</sub> e	8,554	–	–
Category 7 – Employee Commuting	tonnes CO <sub>2</sub> e	8,584	–	–
Category 8 – Upstream Leased Assets**	tonnes CO <sub>2</sub> e	74,766	101,723	–
Category 13 – Downstream Leased Assets**	tonnes CO <sub>2</sub> e	1,094,822	1,229,410	–
Category 15 – Investments**	tonnes CO <sub>2</sub> e	33,417	21,463	–
<b>AIR EMISSIONS</b>				
NO <sub>x</sub> emissions <sup>6B</sup>	tonnes	87	38,763	38,289
SO <sub>x</sub> emissions <sup>7C</sup>	tonnes	3,362	3,922	3,352
PM10 emissions <sup>8D</sup>	tonnes	3	3	3
Ozone depleting substances (ODS)	tonnes	0.24	0.93	2.11

## PERFORMANCE DATA

	Unit	2022	2021	2020
<b>CARBON INTENSITY AND ANNUAL EFFICIENCY RATIO</b>				
<b>Annual Efficiency Ratio (AER)</b>				
- MISC Shipping Fleet (Gas and Petroleum) * E	gCO <sub>2</sub> / ton-nm	6.15	6.24	5.74
<b>Annual Efficiency Ratio (AER<sup>CO2e</sup>)</b>				
- MISC Shipping Fleet (Gas and Petroleum)	gCO <sub>2</sub> e/ ton-nm	6.36	6.43*	5.93*
* Restated based on corrections to deadweight figures of vessels				
<b>OPERATIONAL DATA</b>				
Total distance traveled (GAS and Petroleum fleet) <sup>11</sup>	nautical miles (nm)	5,319,450	5,365,388	5,245,189
<b>AVERAGE ENERGY EFFICIENCY DESIGN INDEX (EEDI<sup>F</sup>) FOR NEW VESSELS</b>		2.624		
Very Large Ethane Carrier (VLEC)	gCO <sub>2</sub> per tonne-mile	-	6.080	-
LNG Dual-Fuel Dynamic Positioning Shuttle Tanker (DPST)	gCO <sub>2</sub> per tonne-mile	-	-	2.879
Conventional Dynamic Positioning Shuttle Tanker (DPST)	gCO <sub>2</sub> per tonne-mile	2.738	-	3.006
LNG Dual-Fuel Very Large Carrier (VLCC)	gCO <sub>2</sub> per tonne-mile	1.937	-	-
<b>ENERGY</b>				
<b>Total Group Energy Consumption <sup>2</sup></b>	GJ	58,790,503	58,956,128	58,771,890
Heavy Fuel Oil <sup>3</sup>	tonnes	64,258	70,130	68,854
Low Sulphur Heavy Fuel Oil	tonnes	380,222	330,863	255,470
Ultra-Low Sulphur Heavy Fuel Oil	tonnes	5,843	3,400	22,822
Marine Gas Oil	tonnes	161	190	3,500
Low Sulphur Marine Gas Oil	tonnes	2,264	5,333	9,377
Ultra-Low Sulphur Marine Gas Oil	tonnes	217,593	232,194	264,185
Liquefied Natural Gas	tonnes	677,716	707,014	731,887
Diesel	Litre	347,189	5,609,360	5,900,968
Biodiesel <sup>F</sup>	Litre	5,728,249	-	-
Petrol	Litre	39,274	24,039	41,835
Compressed natural gas	m <sup>3</sup>	419,712	298,920	280,671
Liquefied petroleum gas	tonnes	8	4	4
Electricity	kWh	60,786,267	55,453,724*	70,913,588
* Restated based on updates to kwh data				
Ethane	tonnes	15,644	15,709	-
Renewable energy <sup>4G</sup>	MWh	8,957	-	-

	Unit	2022	2021	2020
<b>ENERGY INTENSITY RATIO</b>				
<b>Breakdown by Subsidiaries</b>				
Shipping operations - gas and petroleum fleet	(GJ per million transport work)	90	92	85
Heavy & Marine Engineering	(GJ per million revenues in RM)	158	144	172
Maritime Education & Training	(GJ per million sales in RM)	164	167	216
Port Management & Maritime Services	(GJ per hour)	4	4	4
<b>WASTE</b>				
<b>Non-Shipping Operations</b>				
<b>Total Generation Non-Hazardous</b>	tonnes	5,287	4,562	6,332
Total recycled/reuse/recovered	tonnes	137	157	418
Total final disposal	tonnes	5,150	4,405	5,914
<b>Non-Shipping Operations</b>				
<b>Total Generation Hazardous Waste</b>	tonnes	16,449	15,805	19,401
Total waste recycled/reuse/recovered	tonnes	20,942	11,715	13,955
Total waste sent for disposal (incineration/landfill)	tonnes	182	7	36
<b>Shipping Operations</b>				
Ship oil sludge	m <sup>3</sup>	6,186	4,903	3,259
Ship operational effluent discharge - comprises bilge water and cargo residues	m <sup>3</sup>	47,791	45,415	59,597
Operational effluent discharge per vessel per month - bilge water	m <sup>3</sup>	28.82	26.51	25.96
Ship garbage	m <sup>3</sup>	6,689	6,492	7,405
Ship garbage disposed to reception facility	m <sup>3</sup>	5,683	5,514	6,594
Ship garbage discharged to sea - Category B	m <sup>3</sup>	484	450	424
Ship garbage incinerated onboard	m <sup>3</sup>	522	528	387
<b>WATER</b>				
<b>Total Freshwater Withdrawal</b>	m <sup>3</sup>	799,532	658,153	635,686
Total freshwater withdrawal from Surface Water	m <sup>3</sup>	0	0	0
Total freshwater withdrawal from Third Party Water	m <sup>3</sup>	799,532	658,153	635,686
<b>Water Consumption</b>				
Water Consumption (from vessels' freshwater generator)	m <sup>3</sup>	313,388	315,154	328,790
Water Consumption (from vessels' freshwater generator)	m <sup>3</sup>	313,388	315,154	328,790

## PERFORMANCE DATA

	Unit	2022	2021	2020
<b>Ballast Water</b>				
Percentage of fleet implementing ballast water exchange and treatment	%			
- exchange <sup>12</sup>	%	6	24	N/A
- treatment <sup>13</sup>	%	94	76	N/A
<b>SPILLS</b>				
Total spills <sup>9</sup>	Number	4	3	1
Average volume of spills and releases to the environment <sup>10</sup>	Litre	18,177-18,187	140	30-40
<b>FINES/PENALTIES AND AUDITS</b>				
Fines/penalties on environmental related non-compliance	Number	2	1	-
Audits conducted on environmental# related matters	Number	122	21	15
<b>ISO CERTIFICATION</b>				
<b>ISO 50001 Energy Management System</b>	%	14	-	-
- Gas Assets & Solutions		No	-	-
- Petroleum & Product Shipping		No	-	-
- Offshore Business		No	-	-
- Marine & Heavy Engineering		No	-	-
- Integrated Marine Services		Yes	-	-
- Port Management & Maritime Services		No	-	-
- Maritime Education & Training		No	-	-
<b>ISO 14001 Environment Management System</b>	%	43	-	-
- Gas Assets & Solutions		No	-	-
- Petroleum & Product Shipping		No	-	-
- Offshore Business		Yes	-	-
- Marine & Heavy Engineering		Yes	-	-
- Integrated Marine Services		Yes	-	-
- Port Management & Maritime Services		No	-	-
- Maritime Education & Training		No	-	-

## TRAINING AND AWARENESS CONDUCTED IN 2022

Scope	Total Number of Programmes	Total Number of Participant
Environment	15	700

## Scope of ISO certification

Certification	Entity	Scope
ISO 50001:2018 Energy Management System	Eaglestar Shipmanagement (L) Pte Ltd	Provision of Fleet Management Services
	Eaglestar Shipmanagement Gas (S) Pte Ltd	Management of Gas Carrier
	Eaglestar Shipmanagement (S) Pte Ltd	Management of Operation of Tanker
ISO 14001:2015 Environment Management System	Eaglestar Shipmanagement (L) Pte Ltd	Provision of Fleet Management Services
	Eaglestar Shipmanagement (S) Pte Ltd	Management of Operation of Tanker
	Eaglestar Shipmanagement Gas (S) Pte Ltd	Management of Gas Carrier
	MISC Berhad (Offshore Business)	Provision of Engineering, Procurement and Construction Management of Subcontractors, Installation, Commissioning, Operation & Maintenance and Decommissioning of Offshore Floating/Mobile Facilities
	Malaysia Marine and Heavy Engineering Sdn. Bhd.	<ul style="list-style-type: none"> <li>• Repair, Construction, Refurbishment and Conversion of Ships &amp; Marine Vessels.</li> <li>• Engineering, Procurement, Construction, Hook Up, Testing &amp; Commissioning and Maintenance of Production System and Its Facilities.</li> <li>• Fabrication, Testing, Commissioning and Maintenance of Onshore Production Systems and Its Facilities.</li> <li>• Project Management for Transportation and Installation of Offshore Production System and Its Facilities.</li> </ul>

**IUCN Red List of Threatened Species at our Mangrove Conservation Initiative (on a plot of land belonging to ALAM)**

 Please refer to Conserving Marine Biodiversity section for more details on our mangrove conservation initiatives.

Species	IUCN Status
1 Cave nectar bat (Lesser dawn bat) <i>Eonycteris spelaea</i>	Least concern
2 Dusky leaf monkey (Dusky langur) <i>Trachypithecus obscurus</i>	Endangered
3 Long-tailed macaque <i>Macaca fascicularis</i>	Vulnerable
4 Plantain squirrel <i>Callosciurus notatus</i>	Least concern
5 Civet species <i>Paradoxurus sp.</i>	Least concern
6 Wild cat species <i>Prionailurus sp.</i>	Least concern
7 Wild boar <i>Sus scrofa</i>	Least concern

Note:

<sup>1-13</sup> Referring to SASB indicator.

<sup>A</sup> Data for biodiesel combustion from MISC's non shipping Malaysia operations only

<sup>B</sup> Data for 2022 are for non-shipping and workboats only. In FY2022, the monitoring and reporting of emissions for MISC's shipping fleet underwent transition to a new system. Configuration on NO<sub>x</sub> calculations are currently ongoing in the new system and due to this, we are unable to report NO<sub>x</sub> emissions from our shipping operations for FY2022

<sup>C</sup> Data for 2022 exclude six vessels fitted with scrubbers as the system configuration for quantifying SO<sub>x</sub> emissions from scrubber is ongoing

<sup>D</sup> Data for non-shipping only

<sup>E</sup> AER data calculated for total CO<sub>2</sub> emissions without any corrections or adjustment applied

<sup>F</sup> Data for MISC's non shipping Malaysia operations only

<sup>G</sup> Renewable energy from renewable energy certificate bought

<sup>#</sup> Environmental audits including compliance audit that covers the following aspect; management system, waste, pollution, water, energy use and biodiversity.

**Social Pillar – Health and Safety**

	Unit	2022	2021	2020
<b>HEALTH AND SAFETY AND SECURITY</b>				
<b>Working Hours</b>	Hours	65,293,000	48,224,000	45,580,000
<b>Fatalities</b>	Number	0	0	1
Employees	Number	0	0	1
Contractor	Number	0	0	0
<b>Number of Lost Time Injury (LTI) <sup>1</sup></b>	Number	5	7	2
Employees	Number	3	5	1
Contractor	Number	2	2	1
<b>Lost Time Injury Frequency (LTIF)</b>	Per 1 million man-hours	0.08	0.15	0.04
Employees	Per 1 million man-hours	0.09	0.16	0.03
Contractor	Per 1 million man-hours	0.07	0.12	0.07
<b>Total Recordable Case</b>	Number	9	19	8
Employees	Number	3	13	4
Contractor	Number	6	6	4
<b>Recordable Case Frequency (TRCF)</b>	Per 1 million man-hours	0.14	0.39	0.18
Employees	Per 1 million man-hours	0.09	0.41	0.13
Contractor	Per 1 million man-hours	0.17	0.36	0.28
<b>Rate of Occupational Disease</b>		0.00	0.00	0.00
<b>FINES/PENALTIES/AUDITS</b>				
Incidents of non-compliance (fines and penalties) concerning the health and safety impacts of products and services	Number	2	2	0
Health and Safety Audits (as part of the HSEMS assurance)	Number	14	21	15



## PERFORMANCE DATA

	Unit	2022	2021	2020
<b>ISO CERTIFICATION</b>				
ISO 45001 Occupational Health and Safety Management System		43%		
- Gas Assets & Solutions		No	-	-
- Petroleum & Product Shipping		No	-	-
- Offshore Business		Yes	-	-
- Marine & Heavy Engineering		Yes	-	-
- Integrated Marine Services		Yes	-	-
- Port Management & Maritime Services		No	-	-
- Maritime Education & Training		No	-	-
ISO 9001 Quality Management System		86%		
- Gas Assets & Solutions		No	-	-
- Petroleum & Product Shipping		Yes	-	-
- Offshore Business		Yes	-	-
- Marine & Heavy Engineering		Yes	-	-
- Integrated Marine Services		Yes	-	-
- Port Management & Maritime Services		Yes	-	-
- Maritime Education & Training		Yes	-	-

## TRAINING AND AWARENESS CONDUCTED IN 2022

	Total Number of Programmes	Total Number of Participant
Safety	3	552
Health	19	2,340
Policy & Strategies	29	276
Audit & Assurance	4	414
Security	10	1,274

## SCOPE OF ISO CERTIFICATION

Certification	Entity	Scope
ISO 45001:2018 Occupational Health and Safety Management System	MISC Berhad (Offshore Business)	Provision of Engineering, Procurement and Construction Management of Subcontractors, Installation, Commissioning, Operation & Maintenance and Decommissioning of Offshore Floating/Mobile Facilities
	Eaglestar Shipmanagement (L) Pte Ltd	Provision of Fleet Management Services (Shipboard Operations)
	Eaglestar Shipmanagement (S) Pte Ltd	Management of Operation Tanker
	Eaglestar Shipmanagement Gas (S) Pte Ltd	Management of Gas Carrier
	Malaysia Marine & Heavy Engineering Sdn Bhd	<ul style="list-style-type: none"> <li>Repair, Construction, Refurbishment and Conversion of Ships &amp; Marine Vessels.</li> <li>Engineering, Procurement, Construction, Hook Up, Testing &amp; Commissioning and Maintenance of Production System and Its Facilities.</li> <li>Fabrication, Testing, Commissioning and Maintenance of Onshore Production Systems and Its Facilities.</li> <li>Project Management for Transportation and Installation of Offshore Production System and Its Facilities.</li> </ul>
ISO 9001:2015 Quality Management System	MISC Berhad (Offshore Business)	Provision of Engineering, Procurement and Construction Management of Subcontractors, Installation, Commissioning, Operation & Maintenance and Decommissioning of Offshore Floating/Mobile Facilities
	AET Tankers Pte Ltd	Asset Acquisition, Commercial Management and Management of Operations of owned and in chartered vessels, commercial activity of lightering and associated support services
	Eaglestar Shipmanagement (L) Pte Ltd	Provision of Fleet Management Services
	Eaglestar Shipmanagement (S) Pte Ltd	Management of Operation of Tanker
	Eaglestar Shipmanagement Gas (S) Pte Ltd	Management of Gas Carrier
	Malaysia Marine & Heavy Engineering Sdn Bhd	<ul style="list-style-type: none"> <li>Repair, Construction, Refurbishment and Conversion of Ships &amp; Marine Vessels.</li> <li>Engineering, Procurement, Construction, Hook Up, Testing &amp; Commissioning and Maintenance of Production System and Its Facilities.</li> <li>Fabrication, Testing, Commissioning and Maintenance of Onshore Production Systems and Its Facilities.</li> <li>Project Management for Transportation and Installation of Offshore Production System and Its Facilities.</li> </ul>
	MISC Maritime Services Sdn. Bhd	<ul style="list-style-type: none"> <li>Provision of Maritime Services</li> <li>Provision of Corporate Support Services</li> </ul>
Malaysian Maritime Academy Sdn. Bhd	Provision of STCW(Standards for Training, Certification and Watchkeeping for Seafarers) Training Courses for Maritime Personnel	

Note:

<sup>1</sup> referring to SASB indicator

## PERFORMANCE DATA

Social Pillar - Talent Excellence							
	Unit	2022		2021		2020	
<b>EMPLOYEES</b>							
<b>Total employees</b>	Number	9,355		8,851		8,632	
<b>Employees by location (sea/shore) and gender</b>							
- Sea	Number (%)	4,270	45.6%	4,516	51.0%	4,348	50.4%
- Shore	Number (%)	5,085	54.4%	4,335	49.0%	4,284	49.6%
<b>Female employees</b>	Number (%)	1,308	14.0%	1,178	13.3%	1,126	13.0%
- Sea	Number (%)	62	4.7%	59	5.0%	59	5.2%
- Shore	Number (%)	1,246	95.3%	1,119	95.0%	1,067	94.8%
<b>Male employees</b>	Number (%)	8,047	86.0%	7,673	86.7%	7,506	87.0%
- Sea	Number (%)	4,208	52.3%	4,457	58.1%	4,289	57.1%
- Shore	Number (%)	3,839	47.7%	3,216	41.9%	3,217	42.9%
<b>Employee age group</b>							
30 and below	Number (%)	2,470	26.4%	2,069	23.4%	2,097	24.3%
31 - 50 years old	Number (%)	5,811	62.1%	5,731	64.7%	5,501	63.7%
Over 50 years old	Number (%)	1,074	11.5%	1,051	11.9%	1,034	12.0%
<b>Employment position</b>							
<b>Senior Leadership</b>	Number (%)	123	1.3%	108	1.2%	102	1.2%
- Female	Number (%)	21	17.1%	18	16.7%	16	15.7%
- Male	Number (%)	102	82.9%	90	83.3%	86	84.3%
<b>Middle Management</b>	Number (%)	906	9.7%	861	9.7%	828	9.6%
- Female	Number (%)	226	24.9%	208	24.2%	200	24.2%
- Male	Number (%)	680	75.1%	653	75.8%	628	75.8%
<b>Executives/Officers</b>	Number (%)	4,244	45.4%	4,188	47.4%	4,004	46.4%
- Female	Number (%)	659	15.5%	637	15.2%	594	14.8%
- Male	Number (%)	3,585	84.5%	3,551	84.8%	3,410	85.2%
<b>Non-Executives/Ratings</b>	Number (%)	4,082	43.6%	3,694	41.7%	3,698	42.8%
- Female	Number (%)	402	9.8%	320	8.7%	322	8.7%
- Male	Number (%)	3,680	90.2%	3,374	91.3%	3,376	91.3%

	Unit	2022		2021		2020	
<b>Management position in revenue generating function</b>	Number (%)	476					
- Female	Number (%)	101	21.2%	-	-	-	-
- Male	Number (%)	375	78.8%	-	-	-	-
<b>STEM related function</b>	Number (%)	3,245	-	-	-	-	-
- Female	Number (%)	590	18.2%	-	-	-	-
- Male	Number (%)	2,655	81.8%	-	-	-	-
<b>Employee basic salary by gender (Male:Female)</b>	ratio	1.4:1		1.3:1		1.2:1	
<b>Employee with disability</b>	Number	2		3		3	
Female	Number (%)	1	0.01%	-	-	-	-
Male	Number (%)	1	0.01%	3	0.03%	3	0.03%
<b>Employee by countries of operations (shore employees only)</b>							
Malaysia	Number (%)	4,742	93.3%	3,998	92.2%	3,941	92.0%
Asia	Number (%)	222	4.4%	217	5.0%	215	5.0%
Europe	Number (%)	27	0.5%	29	0.7%	34	0.8%
Middle East	Number (%)	1	0.0%	1	0.0%	2	0.0%
North and South America	Number (%)	93	1.8%	90	2.1%	92	2.2%
<b>NATIONALITY</b>							
Malaysian	Number (%)	6,476	69.2%	5,894	66.6%	5,674	65.7%
Non-Malaysian	Number (%)	2,879	30.8%	2,957	33.4%	2,958	34.3%
<b>EMPLOYMENT TYPE</b>							
Permanent	Number (%)	2,720	29.1%	2,634	29.8%	2,624	30.4%
Contract and third party	Number (%)	6,635	70.9%	6,217	70.2%	6,008	69.6%

## PERFORMANCE DATA

	Unit	2022	2021	2020
<b>NEW HIRES</b>				
<b>Total shore new hires</b>	Number	1,504	1,189	950
<b>By age group</b>				
30 and below	Number (%)	830 55.2%	294 24.7%	393 41.4%
31 - 50 years old	Number (%)	615 40.9%	776 65.3%	498 52.4%
Over 50 years old	Number (%)	59 3.9%	119 10.0%	59 6.2%
<b>By gender</b>				
Female	Number (%)	1,208 80.3%	371 31.2%	181 19.1%
Male	Number (%)	296 19.7%	818 68.8%	769 80.9%
<b>By countries of operations</b>				
Malaysia	Number (%)	1,447 96.2%	1,096 92.2%	910 95.8%
Asia	Number (%)	33 2.2%	54 4.5%	25 2.6%
Europe	Number (%)	5 0.3%	11 0.9%	5 0.5%
North and South America	Number (%)	19 1.3%	28 2.4%	10 1.1%
<b>Average hiring cost</b>	USD	1,606	–	–
<b>Internal mobility</b>	Number	1,148	–	–
Female	Number (%)	259 22.6%	–	–
Male	Number (%)	889 77.4%	–	–
<b>Total seafarers' new hires</b>	Number	303	403	397

	Unit	2022	2021	2020
<b>TURNOVER</b>				
<b>Total shore turnover</b>	Number	795	598	435
<b>By age group</b>				
30 and below	Number (%)	268 33.7%	222 37.1%	75 17.3%
31 - 50 years old	Number (%)	423 53.2%	276 46.2%	205 47.1%
Over 50 years old	Number (%)	104 13.1%	100 16.7%	155 35.6%
<b>By gender</b>				
Female	Number (%)	196 24.7%	127 21.2%	96 22.1%
Male	Number (%)	599 75.3%	471 78.8%	339 77.9%
<b>By countries of operations</b>				
Malaysia	Number (%)	719 90.4%	539 90.2%	396 91.0%
Africa	Number (%)	–	–	–
Asia	Number (%)	45 5.7%	28 4.7%	24 5.5%
Europe	Number (%)	7 0.9%	14 2.3%	3 0.7%
North and South America	Number (%)	24 3.0%	17 2.8%	12 2.8%
<b>Total seafarers' turnover</b>	Number	566	392	473
<b>Total voluntary turnover</b>	Number	319	311	589
<b>RATE OF ABSENTEEISM</b>				
<b>By age group</b>				
30 and below	Number (%)	141 46.1%	–	–
31 - 50 years old	Number (%)	137 44.8%	–	–
Over 50 years old	Number (%)	28 9.2%	–	–
<b>By gender</b>				
Female	Number (%)	2 0.7%	–	–
Male	Number (%)	304 99.3%	–	–
<b>SEAFARERS' THAT JOINED CORPORATE POSITION</b>				
Female	Number	2	1	1
Male	Number	–	6	5

## PERFORMANCE DATA

	Unit	2022	2021	2020
<b>KEY TALENT DEVELOPMENT</b>				
<b>Average training hours - employee category</b>	Hours	24	–	–
Executive/Officers	Hours	28	26	21
- Female	Hours	35	–	–
- Male	Hours	26	–	–
Non-Executive/Ratings	Hours	19	19	13
- Female	Hours	23	–	–
- Male	Hours	19	–	–
<b>Number of training days</b>	Days	31,708	–	–
Female	Days	5,669	–	–
Male	Days	26,039	–	–
Percentage of employees trained		93%	–	–
Female	%	98%	–	–
Male	%	92%	–	–
<b>Total amount training invested</b>	USD (million)	17.9	14.8	11.3
Average amount invested per employee	USD	1,919	1,673	1,314

**PERFORMANCE MANAGEMENT**

<b>Performance appraisal</b>	%	100%
Female	%	12.9%
Male	%	87.1%

	Unit	2022	2021	2020
<b>PARENTAL LEAVE</b>				
<b>Employees taking Parental Leave</b>	Number	157	163	142
Female	Number (%)	49 31.2%	49 30.0%	46 32.4%
Male	Number (%)	108 68.8%	114 70.0%	96 67.6%
<b>Employees returned after Parental Leave ended</b>	Number	155	157	142
Female	Number (%)	47 30.3%	43 27.4%	46 32.4%
Male	Number (%)	108 69.7%	114 72.6%	96 67.6%
<b>Employees who returned after Parental Leave ended, and still employed 12 months after return to work</b>	Number	150	155	138
Female	Number (%)	44 29.3%	43 27.7%	43 31.2%
Male	Number (%)	106 70.7%	112 72.3%	95 68.8%

**EMPLOYEE ENGAGEMENT**

<b>Employee engaged</b>	Number (%)	95%
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<b>UNIONISED EMPLOYEES</b>	Number (%)	1,302 13.9%	1,267 14.3%	1,326 15.4%
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<b>Breakdown by countries of operations</b>				
Malaysia	Number (%)	364 28.0%	–	–
Singapore	Number (%)	– 0.0%	–	–
United Kingdom	Number (%)	– 0.0%	–	–
United States of America	Number (%)	– 0.0%	–	–
Japan	Number (%)	– 0.0%	–	–
Brazil	Number (%)	9 0.7%	–	–
Others:	Number (%)	929 71.4%	–	–

## TRAINING AND AWARENESS CONDUCTED IN 2022

Categories	Programme Name	Content Description	Number of Participant
1 Leadership Pathway – Leader+ Series	<ul style="list-style-type: none"> <li>Young Leaders Programme (YLP) for Executives</li> <li>Emerging Leaders Programme (ELP) for Managers</li> <li>Strategic Leaders Programme (SLP) for Senior Managers and General Managers</li> </ul>	<ul style="list-style-type: none"> <li>Leaders+ Series is a six-month accelerated development programme to equip MISC Group's Successors and High Potentials with new skills, experience and perspective. The programme helps them be impactful at work, close their gaps and increase their readiness to assume greater roles</li> <li>The programme is delivered through a blended approach that combines experiential and cognitive elements comprising of engaging lectures coupled with group work, exercises, case studies, simulations, role-play and action learning projects to provide a fully immersive learning experience</li> <li>The programmes sharpen participants' skillsets and increase their ability to solve challenges, and they are given access to faculty who shares thorough research and novel approaches to problem-solving</li> <li>The skills and knowledge gained from the programme will enhance learners' leadership competencies and promote the right behaviour, which will have a lasting impact on the teams they lead, communities they serve and the entire organisation</li> </ul>	YLP: 123 ELP: 411 SLP: 121
2 Leadership Pathway – Signature Series	<ul style="list-style-type: none"> <li>Executive Excellence Series (EES) for Non-Executives, Team Administrators and Secretaries</li> <li>Executive Development Series (EDS) for Executives</li> <li>Managers Foundation Series (MFS) for New Managers</li> <li>Managers Development Series (MDS) for Managers</li> <li>Senior Leaders Series (SLS) for Senior Managers and above</li> </ul>	<ul style="list-style-type: none"> <li>Signature series are one- to two years programme delivered through a blended approach that combines experiential and cognitive elements comprising of engaging lectures coupled with group work, exercises, case studies, simulations, role plays and action learning projects to provide a fully immersive learning experience</li> </ul>	EES: 104 EDS: 164 MFS: 105 MDS: 95 SLS: 22

Categories	Programme Name	Content Description	Number of Participant
3 Other Leadership programmes	<ul style="list-style-type: none"> <li>Online Leadership Programmes</li> <li>Self-learning and e-learning content such as Harvard ManageMentor (HMM) and Skillsoft</li> <li>Programmes such as Critical Thinking &amp; Problem Solving, Coaching, Crisis Management, Diversity, Learning Agility for the Future of Work, Becoming Agile</li> <li>Eaglestar's Leadership Programmes</li> </ul>	<ul style="list-style-type: none"> <li>Collaborated with external learning partners to convert the content of our leadership programmes into virtual platforms</li> <li>Addressed mindset change, creative problem-solving and communication gaps</li> <li>Developed the next generation of leaders for the organisation through a structured employee succession planning programme that supports workers by identifying gaps in their skillsets and conducting planned interventions to enhance their capabilities</li> </ul>	7,339
4 Functional and technical skills development	<ul style="list-style-type: none"> <li>Oil and Gas Safety Passport</li> <li>Professional Scrum Master</li> <li>Project Management Essentials</li> <li>Project Management Professional (PMP) Certification</li> <li>Rotating Equipment Masterclass</li> <li>First Aider training</li> </ul>	<ul style="list-style-type: none"> <li>Addressed the specific needs of groups of employees, such as training engineering employees to support the Group's business expansion into the global market</li> </ul>	27,590

## PERFORMANCE DATA

## Governance Pillar

	Unit	2022	2021	2020
<b>Anti-Bribery and Corruption</b>				
Number of assurances	Number	22*	8	6
<small>* Anti-bribery and corruption related assurances covering ISO ABMS internal &amp; external audits, CoBE audits by GIA, and critical legal areas functional checklists through myAssurance</small>				
Monetary losses as a result of legal proceedings associated with bribery or corruption	Number	0	0	0
<b>Whistleblowing</b>				
Number of cases received	Number	11	14	4
Number of cases on-going	Number	2	0	0
Number of cases investigated	Number	11	14	4
Number of cases closed (as of 31 Dec 2022)	Number	9	14	4
Number of confirmed breaches	Number	0	0	0
<b>Competition Protocols and Other Critical Law</b>				
Legal actions for anti-competitive behaviour, anti-trust, monopoly practices and other critical law	Number	0	0	0
<b>Personal Data and Information</b>				
Breaches of Customer Privacy	Number	0	0	0
Substantiate complaints from regulatory	Number	0	0	0
Substantiate complaints from external	Number	0	0	0
<b>Public Policy Positions/Political Contributions</b>				
Contribution to Political related agenda	Number	0	0	0
Expenditure on lobbying activities	Number	0	0	0
<b>Third Party Compliance Due Diligence</b>				
Compliance due diligence and risk assessment completed	Number	597	327	266
<b>Cybersecurity</b>				
Number of major cybersecurity breaches	Number	0	1	0

	Unit	2022	2021	2020
<b>Code of Conducts and Business Ethics</b>				
<b>Coverage</b>				
Employees	%	100	–	–
Contractors/suppliers/service providers	%	100	–	–
Subsidiaries	%	100	–	–
Joint Ventures (incl. stakes above 10%)	%	64	–	–
<b>Written/Digital Acknowledgement</b>				
Employees	%	100	–	–
Contractors/suppliers/service providers	%	56	–	–
Subsidiaries	%	99	–	–
Joint Ventures (incl. stakes above 10%)	%	15	–	–
<b>Training Provided</b>				
Employees	%	100	–	–
Contractors/suppliers/service providers	%	8	–	–
Subsidiaries	%	96	–	–
Joint Ventures (incl. stakes above 10%)	%	24	–	–
<b>Audits</b>				
Audit on 6 critical legal areas		6	–	–
<b>Human Rights</b>				
Number of assessments conducted	Number	3	2	1
Number of training sessions conducted	Number	4	8	8
Operations that have been subject to human rights impact assessments	Number	2	2	1
Employees trained of human rights	Number	2,767	1,461	1,780
Significant investments agreements and contracts that include human rights clauses (MISC Berhad only)	Number and %	40 (100%)	40 (100%)	N/A
Number of harassment and discrimination	Number	0	–	–

PERFORMANCE DATA

SCOPE OF ISO CERTIFICATIONS

Event	Number of Trainings	Number of Participants
<sup>1</sup> Compliance and business ethics	21	7,863
Cybersecurity	8	126

Note: <sup>1</sup> Compliance and business ethics related trainings and awareness sessions covering six (6) critical legal areas i.e. Ethics and Integrity, Sanctions, Export Control, Data Privacy, Competition, and Human Rights

SCOPE OF ISO CERTIFICATIONS

Certification	Entity	Certification Scope
<b>ISO 37001:2016 Anti-Bribery Management System</b>	MISC Berhad	Anti-Bribery Management System covering integrity and compliance processes, procurement, vendor management and business development for GAS Business Unit and Offshore Business Unit (OBU).
	Malaysia Marine and Heavy Engineering Sdn. Bhd.	<p>Corporate support services of the business and service units for its activities in:</p> <ul style="list-style-type: none"> <li>• Repair, construction, refurbishment and conversion of ships &amp; marine vessels in the yard.</li> <li>• Fabrication, hook up, testing &amp; commissioning and maintenance of onshore &amp; offshore production system and its facilities.</li> </ul> <p>Yard operation and business services of MHB in Pasir Gudang (West and East Yard) and MMHE EPIC (“MEMS”) in Kemaman for:</p> <ul style="list-style-type: none"> <li>• Repair, construction, refurbishment and conversion of ships &amp; marine vessels in the yard.</li> <li>• Fabrication, hook up, testing &amp; commissioning and maintenance of onshore &amp; offshore production system and its facilities.</li> </ul>

Certification	Entity	Certification Scope
	AET Tankers Pte. Ltd.	Asset acquisition, commercial management and management of operations of owned and in chartered vessels including provision of ship lightering and support services.
	MISC Maritime Services Sdn. Bhd.	Provision of support services, Port & Terminal Management services & Maritime services, at all regional sites where MMS operates namely in East & West Coast, Peninsular Malaysia and East Malaysia.
	Eaglestar	The application of anti-bribery management systems on processes supporting the provision of fleet management (shipboard crewing, operating, maintaining, managing fleet of vessels including but not limited to, Very Large Ethane Carriers(VLECs), LNG Bunkering Vessel (LBV), LNG Carriers(LNGCs), LNG dual-fuel and eco-friendly Petroleum Tankers and Dynamic Positioning Shuttle Tankers(DPSTs), LNG Floating Storage Units (FSUs) and Modular Capture Vessels (MCVs).

# REPORTING PRINCIPLES & DATA ASSUMPTIONS

## REPORTING APPROACH

The sustainability reporting principles of stakeholder inclusiveness, sustainability context, materiality and completeness have been applied when defining the content. Accuracy, balance, clarity, comparability, reliability, and timeliness have also been considered.

## PRECAUTIONARY PRINCIPLES

We support a precautionary approach to social and environmental challenges. Several initiatives promote the development of sustainable solutions and innovations including effectively managing assets, business activities and project work. We have also collaborated with industry partners and both professional and technical organisations.

We have established a group-wide risk management system that identifies and assesses risks systematically. This system ensures that the Company's focus and stakeholders' expectations are balanced when combined with a thorough materiality assessment.

## INFORMATION ON EXCLUSIONS

Our approach to exclusions is based on our Group-wide sustainable business risk framework. Information which we are unable to verify is also excluded from the report.

## SUSTAINABILITY FRAMEWORK

This Sustainability Report has been prepared in accordance with several local and international sustainability standards and frameworks:

- The Global Reporting Initiative (GRI) Standards
- Bursa Malaysia Sustainability Reporting Guide (3<sup>rd</sup> Edition)
- Sustainability Accounting Standards Board (SASB) Standards
- Dow Jones Sustainability Index (DJSI), FTSE4Good and requirements by various other ESG indexes
- Carbon Disclosure Project (CDP)
- Transition Pathway Initiative (TPI)
- Task Force on Climate-related Financial Disclosure (TCFD)
- AA1000 Stakeholder Engagement Standard
- United Nations Global Compact Guiding Principles
- United Nations Guiding Principles on Business and Human Rights
- Principles of Climate Governance by World Economic Forum

Our reporting period covers the period from 1 January to 31 December 2022, unless specified and any material events that occurred after this date up to the date of publication.

## SCOPE

Except for GHG data, all our sustainability performance data are reported based on operational control. Based on the operational control scope, data are accounted from assets or facilities where MISC or its subsidiaries have the authority to introduce and implement our operational and health, safety and environment (HSE) policies. Please refer to the scope for GHG data under the Environment Pillar in this section.

## CONSOLIDATION

For operational scope, 100% of the data reported is accounted irrespective of the percentage of ownership where MISC has operational control. Assets and operations, in which MISC does not have operational control, are excluded. Please refer to the operational scope for GHG data under the Environment Pillar in this section.

## ENVIRONMENT PILLAR

### GREENHOUSE GAS (GHG) DATA

#### SCOPE

We adopt GHG Protocol Corporate Standard's financial control approach for our GHG emissions (Scope 1 and 2) accounting which includes assets owned or leased that are used by MISC to gain economic benefits, with the exclusion of the following assets and operations:

- Downstream leased assets which are owned by MISC but leased out to other parties;
- Assets where MISC has minority equity ownership and no control;
- Upstream leased assets where MISC has no control; and
- Short term leases with a lease term of 6 months or less.

The above listed assets and operations will be included in our Scope 3 GHG emission (where material). The followings gases are included in our GHG accounting:

- Carbon dioxide (CO<sub>2</sub>);
- Methane (CH<sub>4</sub>);
- Nitrous Oxide (N<sub>2</sub>O);
- Ethane (C<sub>2</sub>H<sub>6</sub>) – from our very large ethane carriers which uses ethane as fuel.



REPORTING PRINCIPLES & DATA ASSUMPTIONS

CONSOLIDATION

Our accounting for GHG emissions adopts the GHG Protocol Corporate Standard’s financial control approach. Emissions from the assets and facilities where MISC has financial control are accounted as MISC’s Scope 1 and 2 emissions in full (100% of the emissions), except for joint venture (JV) assets. JV assets where MISC has joint financial control over the operations are accounted as Scope 1 or 2, with emissions apportioned according to MISC’s ownership share of the venture. Joint ventures in which MISC does not have financial control, are excluded.

Scope 3 emissions included in this report are emissions assessed as material for MISC in accordance with the following Scope 3 materiality definition:

- 1) Scope 3 categories covering the top 2/3 of the total Group’s Scope 3 emissions.
- 2) Operational emissions from assets not accounted as Scope 1 and 2 of which fall under the following Scope 3 categories:
  - Leased vessels where MISC has no financial control;
  - Vessels owned by MISC but leased out to other parties and MISC has no financial control; and
  - Vessels which MISC has equity ownership but not accounted in Scope 1 and 2.

Based on the materiality definition adopted and screening of emissions on all relevant Scope 3 categories, five out of a total 15 categories were assessed to be material for MISC. These include Category 1 i.e., purchased goods and services from MISC’s marine and heavy engineering operations, Category 3 i.e., fuel and energy related activities, Category 8 i.e., in-chartered vessels where MISC is the commercial operator only (neither the vessel owner nor have technical control), Category 13 i.e., MISC’s offshore assets which are leased out to customers for offshore oil and gas extraction, and Category 15 i.e., vessels which are jointly owned by MISC and other parties, where MISC has equity ownership and does not have control.

Scope 3 categories 2, 4, 5, 6 and 7 are relevant but does not meet the materiality threshold and definition adopted by MISC. Though not material, Category 6 (Business related travels) and Category 7 (employee commuting) are monitored and reported separately. Please refer to the Performance Data Metrics section (Environment Pillar) for more details. Categories related to product and franchise (Category 9-12 and Category 14) are assessed as not relevant for MISC business.

A similar consolidation approach for our Scope 1 and 2 emissions, according to the financial consolidation methodology, is adopted for our Scope 3 emissions.

THIRD PARTY ASSURANCE

Each of our vessel’s fuel consumption and relevant activity data used for our emission accounting have been verified by a third party i.e., DNV confirming the data were collected and reported in accordance with the methodology and processes set out in the ship’s Ship Energy Efficiency Management (SEEMP) as required by Regulation 22A of Annex VI of MARPOL Convention.

Vessel’s fuel consumption and relevant activity data are reported and consolidated through an online reporting tool, with ship specific plausibility checks that provides data validation, alert generation and thus improving data quality.

Our internal team has been constantly monitoring the reporting processes and any changes or updates required are made promptly to maintain continuous veracity.

GHG EMISSIONS CALCULATIONS

The methodology MISC has adopted for the quantification of GHG emissions is through the application of documented emission factors. GHG emissions from our marine combustion sources are calculated in accordance with the International Maritime Organisation (IMO) guidelines and uses emission factors as published by IMO. Two primary references are used namely the Fourth IMO GHG Study 2020 and the Guidelines for Voluntary Use of the Ship Energy Efficiency Operational Indicator (EEOI). Methane/ethane emissions from our LNG dual-fuel engines are calculated using engine specific Methane/ethane slip levels.

Methane emissions from all other vessels (non-dual fuel engine) and nitrous oxide emissions are calculated using emission factors published in the Fourth IMO GHG Study 2020. For non-marine sources, our primary scheme used is the 2006 IPCC Guidelines for National GHG Inventories (IPCC). On specific elements not available in the IPCC and USEPA emission factors are used. We measure our vessel’s carbon intensity performance using two metrics as follow:

Annual Efficiency Ratio (AER)

- AER measures a vessel’s total CO<sub>2</sub> per transport work (unit is gCO<sub>2</sub> /t-nm)
- Transport work is calculated by multiplying the vessel’s deadweight with the distance travelled
- AER is chosen to align with the metric adopted by IMO for ships Carbon Intensity Indicator (CII) scheme applicable for tankers and LNG carriers which will take effect in 2023.

At the Marine Environment Protection Committee (MEPC) MEPC 78 meeting, IMO approved correction factors applicable on some of MISC’s ship types. These correction factors allow for adjustments on the attained AER equation and excludes some portion of emissions from the calculation. The AER reported in the Performance Data Metrics however are calculated for total emissions of MISC’s vessels without any corrections or adjustments applied.

GHG Intensity (AERCO<sub>2e</sub>)

- Measures a vessel’s total emissions of carbon, methane and nitrous oxide using a common unit termed as carbon dioxide equivalent per transport work (gCO<sub>2e</sub>/t-nm).
- Transport work is calculated by multiplying the vessel’s deadweight with the distance travelled.

Indicator	Assumptions
Vessel garbage	Sum of all garbage categories in volumetric unit (m <sup>3</sup> ) disposed to reception facilities, discharged to sea, and incinerated, as recorded in the vessel’s Garbage Record Book.
Operational effluent discharge	Sum of the volumes of bilge water and cargo residues discharged to sea and at shore reception facility, as recorded in the vessel’s Oil Record Book.
Hazardous waste	Sum of all hazardous waste types generated from MISC’s shore operations.  Hazardous wastes managed through reuse, recovery and recycle (3R) is the sum of all hazardous waste types generated which are sent to 3R facilities and excludes the quantity of hazardous wastes sent to final disposal sites i.e. landfill or incineration sites.
Non-hazardous waste	Sum of all non-hazardous waste types generated from MISC’s shore operations.  For ALAM and Wisma MISC, assumptions are used to estimate the non-hazardous waste generation, when actual data is not available.
Freshwater withdrawal	Actual volume of freshwater drawn into MISC facilities from municipal supply, as recorded in water bills.
Spill	Unplanned or uncontrolled releases of liquid or solid associated with current operations from primary or secondary containment, into the environment (i.e. soil and surface water).
Average Energy Efficiency Design Index (EEDI) for new vessels	Total EEDI for new vessels divided by total number of new vessels.
Fines/penalties	A sum of money required to be paid to the regulatory agency/local authority as a penalty for an offence such as non-compliance with rules and regulations.

## REPORTING PRINCIPLES &amp; DATA ASSUMPTIONS

## SOCIAL PILLAR

## HEALTH AND SAFETY

Data regarding working hours, fatalities, injuries and recordable cases under the health and safety are reported through our consolidated reporting tool based on submitted data from all reporting entities within the Group.

Indicator	Assumptions
Lost Time Injury (LTI)	Sum of Fatalities, Permanent Total Disability (PTD), Permanent Partial Disability (PPD) and Lost Workday Case (LWC) but excluding Restricted Work Cases (RWC) and Medical Treatment Case (MTC).
Lost Time Injury Frequency (LTIF)	The number of lost time injuries occurring in a workplace per 1 million hours worked
Total Recordable Case (TRC)	The sum of Fatalities, Permanent Total Disabilities (PTD), Permanent Partial Disabilities (PPD), Lost Workday Cases (LWC), Restricted Workday Cases (RWC) and Medical Treatment Cases (MTC).
Total Recordable Case Frequency (TRCF)	The number of Total Reportable Cases per million exposure hours worked during the period.
Working Hours	Actual "hours worked" including overtime and training but excluding off-duty hours (although the time is spent at the worksite or premise), leave, sickness and other absences.  For shipping operations (Eaglestar), man-hours accumulation starts when the employee signs on and ends when the employees sign off from the vessel
Work-related	Work-related is described as those activities for which management controls are, or should have been, in place. Incidents occurring during such activities are reportable and will be included in the statistics.
Fines/penalties	A sum of money required to be paid to the regulatory agency/local authority as a penalty for an offence such as non-compliance with rules and regulations. This shall include traffic summons and fines by municipal bodies issued to company-owned vehicles.

## TALENT EXCELLENCE

Data regarding number of employees and seafarers, gender, employment position, age group, nationality, new hires, turnover, training hours, parental leaves and collective bargaining are generated through SAP System (HR System).

Indicator	Assumptions
Average Hiring Cost	The average hiring cost includes internal and external recruiting cost e.g. recruiter salaries, interviews, agency fees, advertising, job fairs, travel and relocation costs.
Headcounts	Regular employees excluding those on unpaid leave as of 31st December. Permanent and contract employees, third party, joint ventures, and project ae included in the scope.
Middle Management	Represents Manager and Senior Manager unless if specifically stated otherwise.
Senior Leadership	Represents General Manager and above unless if specifically stated otherwise.
Training Hours	Total hour that an employee spent on attending training, including physical instructor-led trainings (ILT), virtual ILT, e-learning training, seminars and conference.
Average Training Hours	Total training hours divided by the total number of employees.
Unionised Employees	Employee who is eligible and opted to join a Union that is recognised by the company.
Management Position in Revenue Generating Functions	Refers to management roles in departments such as sales, or that contribute directly to the output of products or services. It excludes support functions such as HR, IT, Legal. May also be referred to as roles that have P&L responsibility.
STEM Related Function	Refers to roles that use their knowledge of Science, Technology, Engineering and Mathematics (STEM) in their daily responsibilities.
Talent Retention	Cover only high-performing employees.

## GOVERNANCE PILLAR

Data regarding number of anti-bribery and corruption, whistleblowing, competition protocol and other critical laws, personal data and information, political contribution, third party due diligence, human rights and cybersecurity are generated through internal data consolidation system.

Indicator	Assumptions
Significant Investment Agreement and Contracts	Human rights clauses are already included as part of requirements in significant investments agreements and contracts that require approval at higher level i.e. PGCEO and Board. (MISC Berhad only).
Major Cybersecurity Breach	A cybersecurity breach that has major adverse impact on any of our asset, data, environmental, functional, people or reputation as per MISC Cybersecurity Incident Response Plan definitions.

# SUSTAINABILITY REPORTING STANDARDS & DISCLOSURES

## Global Reporting Initiative (GRI) Index

Statement of Use	MISC has reported the information cited in this GRI content index for the period 1 January 2022 to 31 December 2022 with reference to the GRI Standards.
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GRI 1 used	GRI 1: Foundation 2021
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GRI 2: General Disclosures 2021	Location of the Disclosures
GRI 2-1: Organisational details	About Us
GRI 2-2: Entities included in the organisation's sustainability reporting	
GRI 2-3: Reporting period, frequency and contact point	About this Report
GRI 2-4: Restatement of information	(We have restated some of our data in Performance Data section)
GRI 2-5: External assurance	
GRI 2-6: Activities, value chain, and other business relationships	About Us
GRI 2-7: Employees	
GRI 2-8: Workers who are not employees	Our People, Our Strength
GRI 2-9: Governance structure and composition	
GRI 2-10: Nomination and selection of the highest governance body	
GRI 2-11: Chair of the highest governance body	Sustainability Governance
GRI 2-12: Role of the highest governance body in overseeing management of impacts	
GRI 2-13: Delegation of responsibility for managing impact	
GRI 2-14: Role of the highest governance body in sustainability reporting	About this Report
GRI 2-15: Conflicts of interest	
GRI 2-16: Communication of critical concerns	Integrated Annual Report 2022 – Corporate Governance Overview Statement
GRI 2-17: Collective knowledge of the highest governance body	
GRI 2-18: Evaluation of the performance of the highest governance body	
GRI 2-19: Remuneration policies	
GRI 2-20: Process to determine remuneration	Integrated Annual Report 2022 – Nomination & Remuneration Committee Report
GRI 2-21: Annual total compensation ratio	
GRI 2-22: Statement on sustainable development strategy	Leadership Statement
GRI 2-23: Policy commitments	<ul style="list-style-type: none"> <li>About this Report</li> <li>Operating Responsibly</li> </ul>
GRI 2-24: Embedding policy commitments	Operating Responsibly
GRI 2-25: Process to remediate negative impacts	Respecting Human Rights at Sea & Shore
GRI 2-26: Mechanism for seeking advice and raising concerns	
GRI 2-27: Compliance with laws and regulations	Operating Responsibly
GRI 2-28: Membership associations	<ul style="list-style-type: none"> <li>Our Stakeholders' Universe</li> <li>Building Trusted Relationship</li> </ul>
GRI 2-29: Approach to stakeholder engagement	
GRI 2-30: Collective bargaining agreements	<ul style="list-style-type: none"> <li>Our People, Our Strength</li> <li>Performance Data</li> </ul>

## GRI 3: Material Topics 2021

GRI 3-1: Process to determine material topics	
GRI 3-2: List of material topics	Prioritising What Matters Most
GRI 3-3: Management of material topics	

## GRI Content Index

GRI Content Index	Location of the Disclosures
<b>GRI 201: Economic Performance 2016</b>	
Disclosure 201-1: Direct economic value generated and distributed	
Disclosure 201-2: Financial implications and other risks and opportunities due to climate change	Economic Value Creation
Disclosure 201-3: Defined benefit plan obligations and other retirement plans	Our People, Our Strength
<b>GRI 203: Indirect Economic Impacts 2016</b>	
Disclosure 203-1: Infrastructure investments and services supported	
Disclosure 203-2: Significant indirect economic impacts	Economic Value Creation
<b>GRI 205: Anti-corruption 2016</b>	
Disclosure 205-1: Operations assessed for risks related to corruption	
Disclosure 205-2: Communication and training about anti-corruption policies and procedures	<ul style="list-style-type: none"> <li>Operating Responsibly</li> <li>Performance Data</li> </ul>
Disclosure 205-3: Confirmed incidents of corruption and action taken	
<b>GRI 206: Anti-competitive Behaviour 2016</b>	
Disclosure 206-1: Legal actions for anti-competitive behaviour, anti-trust, and monopoly practices	Operating Responsibly
<b>GRI 207: Tax 2019</b>	
Disclosure 207-1: Approach to tax	
Disclosure 207-2: Tax governance, control and risk management	
Disclosure 207-3: Stakeholder engagement and management of concerns related to tax	Economic Value Creation
Disclosure 207-4: Country-by-country reporting	Performance Data – Financial
<b>GRI 302: Energy 2016</b>	
Disclosure 302-1: Energy consumption within the organisation	
Disclosure 302-2: Energy consumption outside of the organisation	
Disclosure 302-3: Energy intensity	<ul style="list-style-type: none"> <li>Our Environmental Performance</li> <li>Performance Data</li> </ul>
Disclosure 302-4: Reduction of energy consumption	
Disclosure 302-5: Reduction in energy requirements of products and services	
<b>GRI 303: Water and Effluents 2018</b>	
Disclosure 303-1: Interactions with water as a shared resource	
Disclosure 303-2: Management of water discharge-related impacts	
Disclosure 303-3: Water withdrawal	<ul style="list-style-type: none"> <li>Our Environmental Performance</li> <li>Performance Data</li> </ul>
Disclosure 303-4: Water discharge	
Disclosure 303-5: Water consumption	

SUSTAINABILITY REPORTING STANDARDS & DISCLOSURES

GRI Content Index	Location of the Disclosures
<p><b>GRI 304: Biodiversity 2016</b></p> <p>Disclosure 304-1: Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas</p> <p>Disclosure 304-2: Significant impacts of activities, products and services on biodiversity</p> <p>Disclosure 304-3: Habitats protected or restored</p> <p>Disclosure 304-4: IUCN Red List species and national conservation list species with habitats in areas affected by operations</p>	<ul style="list-style-type: none"> <li>• Conserving Marine Biodiversity</li> <li>• Performance Data</li> </ul>
<p><b>GRI 305: Emissions 2016</b></p> <p>Disclosure 305-1: Direct (Scope 1) GHG emissions</p> <p>Disclosure 305-2: Energy indirect (Scope 2) GHG emission</p> <p>Disclosure 305-3: Other indirect (Scope 3) GHG emissions</p> <p>Disclosure 305-4: GHG emissions intensity</p> <p>Disclosure 305-5: Reduction of GHG emissions</p> <p>Disclosure 305-6: Emission of ozone – depleting substances (ODS)</p> <p>Disclosure 305-7: Nitrogen oxides (NO<sub>x</sub>), sulfur oxides (SO<sub>x</sub>), and other significant air emissions</p>	<ul style="list-style-type: none"> <li>• Our Environmental Performance</li> <li>• Our Decarbonisation Pathway</li> <li>• Performance Data</li> </ul>
<p><b>GRI 306: Waste 2020</b></p> <p>Disclosure 306-1: Waste generation and significant waste-related impacts</p> <p>Disclosure 306-2: Management of significant waste-related impacts</p> <p>Disclosure 306-3: Waste generated</p> <p>Disclosure 306-4: Waste diverted from disposal</p> <p>Disclosure 306-5: Waste directed to disposal</p>	<ul style="list-style-type: none"> <li>• Our Environmental Performance</li> <li>• Performance Data</li> </ul>
<p><b>GRI 308: Supplier Environmental Assessment 2016</b></p> <p>Disclosure 308-1: New suppliers that were screened using environmental criteria</p> <p>Disclosure 308-2: Negative environmental impacts in the supply chain and actions taken</p>	<p>Embracing a Sustainable Supply Chain</p>
<p><b>GRI 401: Employment 2016</b></p> <p>Disclosure 401-1: New employee hires and employee turnover</p> <p>Disclosure 401-2: Benefits provided to full-time employees that are not provided to temporary or part-time employees</p> <p>Disclosure 401-3: Parental leave</p>	<ul style="list-style-type: none"> <li>• Our People, Our Strength</li> <li>• Performance Data</li> </ul>

GRI Content Index	Location of the Disclosures
<p><b>GRI 403: Occupational Health and Safety 2018</b></p> <p>Disclosure 403-1 Occupational health and safety management system</p> <p>Disclosure 403-2 Hazard identification, risk assessment, and incident investigation</p> <p>Disclosure 403-3: Occupational health services</p> <p>Disclosure 403-4: Worker participation, consultation, and communication on occupational health and safety</p> <p>Disclosure 403-5: Worker training on occupational health and safety</p> <p>Disclosure 403-6: Promotion of worker health</p> <p>Disclosure 403-7: Prevention and mitigation of occupational health and safety impact directly linked by business relationships</p> <p>Disclosure 403-8: Workers covered by an occupational health and safety management system</p> <p>Disclosure 403-9: Work-related injuries</p> <p>Disclosure 403-10: Work-related ill health</p>	<ul style="list-style-type: none"> <li>• Operating Safely</li> <li>• Performance Data</li> </ul>
<p><b>GRI 404: Training and Education 2016</b></p> <p>Disclosure 404-1: Average hours of training per year per employee</p> <p>Disclosure 404-2: Programmes for upgrading employee skills and transition assistance programmes</p> <p>Disclosure 404-3: Percentage of employees receiving regular performance and career development reviews</p>	<ul style="list-style-type: none"> <li>• Our People, Our Strength</li> <li>• Performance Data</li> </ul>
<p><b>GRI 405: Diversity and Equal Opportunity 2016</b></p> <p>Disclosure 405-1: Diversity of governance bodies and employees</p> <p>Disclosure 405-2: Ratio of basic salary and remuneration of women to men</p>	<p>Performance Data</p>
<p><b>GRI 406: Non-discrimination 2016</b></p> <p>Disclosure 406-1: Incidents of discrimination and corrective actions taken</p>	<p>Respecting Human Rights at Sea &amp; Shore</p>
<p><b>GRI 407: Freedom of Association and Collective Bargaining 2016</b></p> <p>Disclosure 407-1: Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk</p>	<ul style="list-style-type: none"> <li>• Our People, Our Strength</li> <li>• Performance Data</li> </ul>
<p><b>GRI 408: Child Labour 2016</b></p> <p>Disclosure 408-1: Operations and suppliers at significant risk for incidents of child labour</p>	<p>Respecting Human Rights at Sea &amp; Shore</p>
<p><b>GRI 409: Forced or Compulsory Labour 2016</b></p> <p>Disclosure 409-1: Operations and suppliers at significant risk for incidents of forced or compulsory labour</p>	<p>Respecting Human Rights at Sea &amp; Shore</p>

SUSTAINABILITY REPORTING STANDARDS & DISCLOSURES

GRI Content Index	Location of the Disclosures
<b>GRI 410: Security Practices 2016</b> Disclosure 410-1: Security personnel trained in human rights policies or procedures	Respecting Human Rights at Sea & Shore
<b>GRI 411: Rights of Indigenous Peoples 2016</b> Disclosure 411-1: Incidents of violations involving rights of indigenous peoples	Respecting Human Rights at Sea & Shore
<b>GRI 413: Local Communities 2016</b> Disclosure 413-1: Operations with local community engagement, impact assessments, and development programmes Disclosure 413-2: Operations with significant actual and potential negative impacts on local communities	Partnering with the Community Respecting Human Rights at Sea & Shore
<b>GRI 414: Supplier Social Assessment 2016</b> Disclosure 414-1: New suppliers that were screened using social criteria Disclosure 414-2: Negative social impacts in the supply chain and actions taken	Embracing a Sustainable Supply Chain
<b>GRI 415: Public Policy 2016</b> Disclosure 415-1: Political contributions	<ul style="list-style-type: none"> <li>Operating responsibly</li> <li>Performance Data</li> </ul>
<b>GRI 418: Customer Privacy 2016</b> Disclosure 418-1: Substantiated complaints concerning breaches of customer privacy and losses of customer data	<ul style="list-style-type: none"> <li>Operating responsibly</li> <li>Performance Data</li> </ul>

Sustainability Accounting Standards Board (SASB) Index

MISC recognises the value of SASB's approach to create disclosures expectations based on the material issues for each sector. SASB Standards identify the subset of environmental, social and governance issues most relevance to financial performance.

Topic	Accounting Metric	Unit	Data/Location of Disclosures
Greenhouse Gas Emissions	Gross global Scope 1 emissions <sup>1</sup>	Metric tons (t) CO <sub>2</sub> -e	Performance data - Environment pillar
	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	N/A	Our Decarbonisation Pathway
	(1) Total energy consumed <sup>2</sup> , (2) Percentage heavy fuel oil <sup>3</sup> , and (3) Percentage renewable <sup>4</sup>	Gigajoules (GJ), Percentage (%)	Performance data – Environment pillar
Air Quality	Average Energy Efficiency Design Index (EEDI) for new ships <sup>5</sup>	Grams of CO <sub>2</sub> per ton-nautical mile	Performance data – Environment pillar
	Air emissions of the following pollutants: (1) NO <sub>x</sub> (excluding N <sub>2</sub> O) <sup>6</sup> , (2) SO <sub>x</sub> <sup>7</sup> and (3) Particulate matter (PM <sub>10</sub> ) <sup>8</sup>	Metric tons (t)	Performance data – Environment pillar
Economic Impacts	Percentage of fleet implementing ballast water	Percentage (%)	Performance data – Environment pillar
	(1) Exchange <sup>12</sup> and (2) Treatment <sup>13</sup>		
Employee Health & Safety	(1) Number <sup>9</sup> and (2) Aggregate volume of spills and releases to the environment <sup>10</sup>	Number, Cubic meters (m <sup>3</sup> )	Performance data – Environment pillar
	Lost time incident rate (LTIR)	Rate	Performance data – Social pillar
Business Ethics	Number of calls at ports in countries that have the 20 lowest rankings in Transparency International's Corruption Perception Index	Number	17
	Total amount of monetary losses as a result of legal proceedings associated with bribery or corruption	Reporting currency	0
Accident & Safety Management	Number of marine casualties, percentage classified as very serious	Number, Percentage (%)	0
	Number of (1) Conditions of Class or (2) Recommendations	Number	4 0
	Number of port state control (1) Deficiencies and (2) Detentions	Number	17 0

Activity Metric	Unit	Value
Number of shipboard employees	Number	4,270
Total distance travelled by vessels <sup>11</sup>	Nautical miles (nm)	5,519,735
Operating days	Days	33,446
Number of vessels in total shipping fleet	Number (excluding workboats)	95
Number of vessel port calls	Number	5,296

# TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

Recommended Disclosures	Location of Disclosures in Climate-related Financial Risks and Opportunities Section
<b>Governance</b>	
a. Board's oversight of climate-related risks and opportunities	Board Oversight
b. Management's role in assessing and managing climate-related risks and opportunities	Management Oversight
<b>Strategy</b>	
a. Risks and opportunities identified in the short, medium, and long term	Short, Medium and Long-term Time Horizon
b. Actual and potential impacts on the business, strategy, and financial planning	Overview of MISC Group Climate-related Risks and Opportunities and Climate Strategy
c. Scenario analysis of impacts including a 2°C scenario	Scenario Analysis
<b>Risk Management</b>	
a. Processes for identifying and assessing climate-related risks	Identification of Climate-related Risks and Opportunities
b. Process for managing climate-related risks	Climate Strategy
c. Integration of climate-related risk into overall risk management	Risk, Strategic Risk and Enterprise Risk Management
<b>Metrics &amp; Targets</b>	
a. Metrics used to assess climate-related risks and opportunities	Metrics and Targets
b. All GHG emissions (Scopes 1,2 and 3) and related risks	Refer to Sustainability Report - Data Performance section
c. Targets used to manage climate-related risks and opportunities and performance against targets	GHG Target and Commitment

# LIST OF ABBREVIATIONS

3R	Recycle, Reduce, and Reuse	CLA	Critical Legal Areas
4R	Refuse, Reduce, Reuse, and Recycle/Recover	CO <sub>2</sub>	Carbon Dioxide
ABC	Anti-Bribery and Corruption	CO <sub>2</sub> e	Carbon Dioxide Equivalent
ABMS	Anti-Bribery Management System	CoBE	Code of Conduct and Business Ethics
ABS	American Bureau of Shipping	CoBE THIRD PARTY	Code of Conduct and Business Ethics for Third Parties
AER	Annual Efficiency Ratio		
AERCO <sub>2</sub> e	Annual Efficiency Ratio Carbon Dioxide Equivalent	CMS	Cultural Maturity Survey
		COI	Conflict of Interest
AET	American Eagle Tankers Private Limited	COP	Community of Practice
AGB	Above-Ground Biomass	CPD	Corporate Planning Division
AGM	Annual General Meeting	CRS	Condensate Recovery System
ALAM	Malaysian Maritime Academy Sdn Bhd	CS	Corporate Sustainability
ALARP	As Low As Reasonably Practicable	CWW	Compressed Work Week
ANATEL	Brazilian National Telecommunications Agency	DF	Dual-Fuel
		LNG D	Liquefied Natural Gas Dual-Fuel
API	American Petroleum Institute	DDRA	Due Diligence Risk Assessment
APPEC	Asia Pacific Petroleum Conference	D&I	Diversity and Inclusion
AR	Annual Report	DIP	Declaration and Integrity Pledge
ASA	Annual Surveillance Audit	DJSI	Dow Jones Sustainability Indices
ASB	Asia School of Business	DOE	Department of Environment
ASC	Advanced Safety Communication	DOSH	Department of Occupational Safety and Health
ATW	Around The World		
AWS	Alternate Work Site	DLP	Data Leakage Prevention
BAC	Board Audit Committee	DNV GL	Det Norske Veritas and Germanischer Lloyd
BAU	Business As Usual	DP	Dynamic Positioning
BCM	Business Continuity Management	DPST	Dynamic Positioning Shuttle Tanker
BCP	Business Continuity Planning	DWT	Deadweight Tonne
BCRA	Bribery and Corruption Risk Assessment	E&P	Exploration & Production
BGRC	Board Governance and Risk Committee	EAP	Employee Assistance Programme
BHCKL	British High Commission in Kuala Lumpur	ECDD	Enhanced Compliance Due Diligence
b-HSSE	Behavioural-Health, Safety, Security and Environment	EDS	Executive Development Series
		EEDI	Energy Efficiency Design Index
BMCC	British Malaysian Chamber of Commerce	EES	Execution Excellence Series
BSRC	Board Sustainability and Risk Committee	EEXI	Energy Efficiency Existing Ship Index
BWMS	Ballast Water Management System	ELP	Emerging Leaders Programme
BWTS	Ballast Water Treatment System	EPCICODD	Engineering, Procurement, Commissioning, Operations and Maintenance, Decommissioning and Demobilisation
CACCC	Corporate Anti-Corruption Compliance Center		
CAPEX	Capital Expenditure	EPF	Employee Provident Fund
CASB	Cloud Access Security Broker	ERM	Enterprise Risk Management
CCS	Carbon Capture and Storage	ESG	Environment, Social and Governance
CCUS	Carbon Capture, Utilisation & Storage	EU ETS	European Union Emission Trading System
CDP	Carbon Disclosure Project	EVP	Employee Volunteer Program
CEO	Chief Executive Officer	FC	Functional Checklist
CGM	Climate Governance Malaysia	FCPA	Foreign Corrupt Practices Act
C2H6	Ethane	FGRS	Flare Gas Recovery System
CH4	Methane	FID	Final Investment Decision
CHRA	Chemical Health Risk Assessment	FP50	Floating Production, Storage and Offloading
CI	Community Investment	FSC®	Forest Stewardship Council
CISO	Chief Information Security Officer	FSO	Floating Storage and Offloading
CII	Carbon Intensity Indicator	FSU	Floating Storage Unit
CIMC Raffles	Shipyard for Offshore and Marine Engineering owned by CIMC Group	FTSE4GOOD	Financial Times Stock Exchange for Good

FVSB	FPSO Ventures Sdn. Bhd.	MACC	Malaysian Anti-Corruption Commission
GAS	Gas Assets and Solution	MACN	Maritime Anti-Corruption Network
gCO <sub>2</sub>	Gram CO <sub>2</sub>	MaMPU	Malaysian Administrative Modernisation and Management Planning Unit
gCO <sub>2</sub> /ton-nm	Gram CO <sub>2</sub> per tonnage nautical miles		
GCMP	Group Crisis Management Plan	MARPOL	International Convention for the Prevention of Pollution from Ships
GCMT	Group Crisis Management Team		
GDP	Gross Domestic Product	MASA	Malaysia Shipowners' Association
GHG	Greenhouse Gas	MASRA	Malaysian Sustainability Reporting Awards
GHSSE	Group Health, Safety, Security and Environment	MBMs	Market-Based Measures
		MBOT	Malaysia Board of Technologists
		MC	Management Committee
GIA	Group Internal Audit	MCCG	Malaysian Code of Corporate Governance
GlobalMET	Maritime Seafarer Training & Education Association	MCV	Modular Capture Vessel
		MDC	Management Development Committee
GMF	Global Maritime Forum	MDM	Mobile Device Management
GRAC	Grievance Resolution/Appeal Committee	MDS	Managers Development Series
GRI	Global Reporting Initiative	MEAT	Management Effectiveness Assessment Tool
GTC	Gas Tanker Committee	MEGI	M-Type Electronically Controlled Gas Injection
HKC	Hong Kong Convention	MEPC	Marine Environment Protection Committee
HMM	Harvard Manage Mentor	MESTEC	Ministry of Energy, Science, Technology, Environment and Climate Change
HOTO	Heart of The Ocean		
HRA	Health Risk Assessment	MFS	(New) Managers Foundation Series
H&S	Health and Safety	MGA	Malaysian Gas Association
HSE	Health, Safety and Environment	MHB	Malaysia Marine & Heavy Engineering Holdings Berhad
HSEMS	HSE Management System		
HSSE	Health, Safety, Security and Environment	MIA	Malaysian Institute of Accountants
HW	Hybrid Working	MIROS	Malaysian Institute of Road Safety Research
IAR	Integrated Annual Report	MLC	Maritime Labour Convention
iCER	Intelligent Control by Exhaust Recycling	MMHE	Malaysia Marine and Heavy Engineering Sdn. Bhd.
IEA	International Energy Agency	MMD	Marine Department Malaysia
IGU	International Gas Union	MMS	Port Management and Maritime Services
IH	Industrial Hygiene	MMscfd	Million Standard Cubic Feet Per Day
IHM	Inventory of Hazardous Materials	MMWQS	Malaysia Marine Water Quality Standard
ILO	International Labour Organisation	MOF	Ministry of Finance
IMarEST	Institute of Marine Engineering, Science and Technology's	MOT	Ministry of Transport
		MoU	Memorandum of Understandings
IMO	International Maritime Organisation	MPA	Marine Protected Area
IMO CII	International Maritime Organisation Carbon Intensity Indicator	MPA	Maritime and Port Authority of Singapore
		MRV	Monitoring, Reporting and Verification
INTERTANKO	International Association of Independent Tanker Owners	MSOSH	Malaysian Society for Occupational Safety and Health
IP	Intellectual Property	MSS	Medical Standards for Seafarers
IPCC	Intergovernmental Panel on Climate Change	MTCO <sub>2</sub> e	Metric Tonnes of Carbon Dioxide Equivalent
IRENA	The International Renewable Energy Agency	MVOT	Malaysia Vietnam Offshore Terminal Limited
JDP	Joint Development Project	MyWiE	Malaysia Women in Energy
JHA	Job Hazard Analysis	NGO	Non-Governmental Organisation
KYC	Know Your Counterparty	NOAA	National Oceanic and Atmospheric Administration
LCSC	Legal, Corporate Secretarial and Compliance		
LBV	LNG Bunkering Vessel	NOPSEMA	National Offshore Petroleum Safety and Environmental
LNG	Liquefied Natural Gas		
LNGC	Liquefied Natural Gas Carrier	NO <sub>x</sub>	Nitrogen Oxide
LOPC	Loss of Primary Containment	N <sub>2</sub> O	Nitrous Oxide
LR	Lloyds Register	NRC	Nomination and Remuneration Committee
LTIF	Lost Time Injury Frequency		

## LIST OF ABBREVIATIONS

OBU	Offshore Business Unit	TAMUG	Texas A&M Galveston Maritime College
OCIMF	Oil Companies International Marine Forum	TBT	Tributyltin
ODS	Ozone Depleting Substances	TCFD	Task Force on Climate-Related Financial Disclosures
OLA	Operational Legal Areas	TGLO	Texas General Land Office
OPEX	Operating Expense	TI	Transparency International
OVID	Offshore Vessel Inspection Database	TMS	Talent Management System
OVMISA	Offshore Vessels Management and Self-Assessment	TMSA	Tanker Management and Self-Assessment
OWS	Oily Water Separator	TN50	National Transformation 2050
PCB	Printed Circuit Board	TPCDDOG	Third Party Compliance Due Diligence Operational Guidelines
PCBF	Propeller Boss Cap Fin	TPI	Transition Pathway Initiative
PDPA	Personal Data Protection Act	TRCF	Total Recordable Case Frequency
PGCEO	President and Group Chief Executive Officer	TVET	Technical and Vocational Education and Training
PMHA	Prime Minister Hibiscus Award	UCUA	Unsafe Condition and Unsafe Act
POB	Person on Board	UMAS	University Maritime Advisory Services
POCS2020	PETRONAS Organisational Cultural Survey 2020	UMT-MMS	University Malaysia Terengganu - Port Management and Maritime Services
PPE	Personal Protective Equipment	UMT-SEATRU	University Malaysia Terengganu – Sea Turtle Research Unit
PRA	Project Risk Assessment	UNFCCC	United Nations Framework Convention on Climate Change
PRASC	Project Risk Assessment Committee	UNSDG	United Nations Sustainable Development Goals
PRM	PETRONAS Resiliency Model	VDIP	Vendor Declaration and Integrity Pledge
PSM	Process Safety Management	VLCC	Very Large Crude Carrier
PSPI	Process Safety Performance Indicators	VLCC LNGDF	Very Large Crude Carrier LNG Dual Fuel
PTG 19.90.05	PETRONAS Technical Guideline on Social Risk Assessment	VLEC	Very Large Ethane Carrier
PTW	Permit-to-Work	VOC	Volatile Organic Compound
P&I	Protection and Indemnity	VP	Vice President
PV	Solar Photovoltaic	WB	Whistleblowing
PVU	Pump Vaporiser Unit	WBC2	Whistleblowing Committee 2
RACI	Responsible, Accountable, Consulted, Informed	WFH	Work From Home
RCM	Reef Check Malaysia	WtV	Waste-To-Value
RCP	Representative Concentration Pathways	W4T	Walk For Trees
RMC	Risk Management Committee	YARA	Yara International ASA
R&L	Regulatory and Law	YLP	Young Leaders Programme
SASB	Sustainability Accounting Standards Board	YOY	Year-On-Year
SCDD	Standard Compliance Due Diligence	ZEV	Zero-Carbon Emission Vessel
SCR	Selective Catalytic Reduction		
SEATRU	Sea Turtle Research Unit		
SEEMP	Ship Energy Efficiency Management Plan		
SeMS	Security Management System		
SHI	Samsung Heavy Industries Co Ltd		
SIGTTO	Society of International Gas Tanker and Terminal Operators		
SIRE	Ship Inspection Report Programme		
SKM	Malaysian Skills Certificate		
SLP	Strategic Leaders Programme		
SOx	Sulphur Oxide		
SOLAS	Safety of Life at Sea		
SOP	Standard Operating Procedures		
SSP	Shared Socioeconomic Pathways		
STL	Zhejiang Satellite Petrochemical		
STS	Ship-to-Ship		



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