



# SUSTAINABILITY REPORT 2023



# SUSTAINABLE TOMORROW

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The cover prominently features an MAG airplane flying above the clouds of Kuala Lumpur, over seeing the skyline on a new day which reflects MAG continuing to embrace innovation and pursue sustainability, ensuring a brighter and more sustainable future for all.





# INTRODUCTION & OVERVIEW

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# ABOUT THIS REPORT

GRI 2-2, 2-3, 2-5

Welcome to Malaysia Aviation Group's (MAG) Sustainability Report (SR) for the year 2023. This SR provides a comprehensive overview of the Group's efforts in advancing our sustainability objectives across the Environmental, Social, and Governance (ESG) pillars.

SR 2023 is the Third Edition of MAG's annual sustainability disclosure. This, and previous editions, can be found in the Sustainability Publication section of our website at <https://www.malaysiaaviationgroup.com.my/en/sustainability/sustainability-publications.html>

## REPORTING SCOPE AND BOUNDARIES

This report covers the efforts of MAG and its wholly owned entities from 1 January 2023 to 31 December 2023, unless otherwise stated. These entities represent various business segments, including Airlines, Aviation Services, and Loyalty and Travel Services. All financial data is in Malaysian Ringgit, unless explicitly stated.

The terms used in this report, such as "Malaysia Aviation Group", "the Group", "our business", "organisation", "we", "us", "our" and "ourselves" denote Malaysia Aviation Group and its wholly owned entities, unless specified otherwise. The information in this report is as of 31 December 2023.

Unless otherwise specified, the geographical locations covered by this report include all relevant operations of the mentioned entities, both domestically and internationally.

The data used was provided by individual Business units and consolidated by our Sustainability Office.

## REPORTING FRAMEWORKS

This report was developed based on the following sustainability reporting frameworks:

**Global Reporting Initiative (GRI):** With reference to the GRI 2021 Universal Standards, the report ensures transparent disclosure of sustainability performance across economic, environmental and social dimensions.

**International Air Transport Association Environmental, Social and Governance (IATA ESG) Core Metrics:** Relevant metrics provided by IATA are integrated into the report to assess environmental, social and governance performance within the aviation industry.

**United Nations Sustainable Development Goals (UNSDGs):** Aligned with the UN SDGs, the report acknowledges and contributes to global efforts to address pressing social, economic and environmental challenges.

This report aims to provide stakeholders with a holistic understanding of MAG's sustainability initiatives and performance by utilising these frameworks.

## REPORTING ASSURANCE

VERIFAVIA SINGAPORE PTE LTD ("VERIFAVIA") has conducted Limited Assurance on MAG's carbon inventory data for Scope 1, Scope 2, and Scope 3 metrics from 1 January 2023 to 31 December 2023. The Limited Assurance Statement is available on page 73 of this report.

## FORWARD-LOOKING STATEMENTS

It is important to note that the information regarding the operational business of MAG contained in this report should not be used for forward-looking analysis. Terms such as "believe," "expect," "forecast," "intend," "estimate," "count on," and similar expressions should not be utilised for other report analyses and proposals.



# GROUP MANAGING DIRECTOR'S MESSAGE

**DATUK CAPTAIN IZHAM ISMAIL**  
Group Managing Director  
Malaysia Aviation Group



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I am delighted to present the Malaysia Aviation Group (MAG) Sustainability Report for 2023. As we navigate through the post-COVID-19 economic challenges, our focus remains on shaping a *Sustainable Tomorrow*.

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MAG has a dedicated Sustainability Governance structure that provides oversight and guidance on the management of the Group's sustainability matters while setting the tone for our sustainability-related commitments. Our goal is to contribute to positive socio-economic impacts while prioritising environmental sustainability in our operations. In pursuit of our goal, we have implemented the relevant strategies and initiatives guided by our shareholders' principles, adopting practices that deliver long-term benefits for the environment, local community, and nation.

Recognising the significant environmental impact of aviation, sustainability sits at the heart of our business strategy and decisions. We are committed to minimising our carbon footprint and environmental impact through operational efficiency measures, upgrading our fleet with new fuel-efficient aircraft, promoting Sustainable Aviation Fuel (SAF), encouraging voluntary carbon offsetting by passengers, and reducing the use of single-use plastic during flights.

In 2023, we proudly welcomed the first batch of the Boeing 737-8 aircraft, boasting superior fuel efficiency and reduced noise pollution. We aim to have a total of 25 such aircraft and 20 Airbus 330neo aircraft to be delivered in phases by 2026 and 2028 respectively as part of our ongoing fleet modernisation plan.



Additionally, our ground handling arm, AeroDarat Services, has begun operating the Mototok Spacer 8600 NG, a remote-controlled ground handling pushback equipment that replaces conventional fossil fuel-powered tugs. We're the first in Asia and second globally to adopt this model, with plans to deploy 12 units in stages. Furthermore, we have introduced the first electric Ground Power Unit (eGPU), replacing traditional non-diesel-powered units. This transition not only reduces our environmental impact but also enhances ground operation efficiency.

Beyond our environmental efforts, we support ethical business practices across our value chain. We promote fair treatment of employees, suppliers, and customers, while fostering diversity and inclusion within our organisation. In terms of community impact, we've partnered with Tata Consultancy Service (TCS) and the National Cancer Society Malaysia (NCSM) to provide air travel support for childhood cancer patients needing treatment under the CANSupport initiative.

Collaboration is key, and we continuously engage with industry stakeholders, regulators, and NGOs to exchange best practices and drive sustainability advancements in aviation. We are dedicated to leveraging innovation and investing in sustainable solutions to achieve positive impacts for our business, society, and environment.

Our initiatives in the past year closely align with the United Nations Sustainable Development Goals (SDGs), particularly focusing on Gender Equality (SDG5), Affordable and Clean Energy (SDG7), Responsible Consumption and Production (SDG12), and Climate Action (SDG13).

As we reflect on our achievements and look to the future, we continue to integrate sustainable practices into our operations. We know that these are a priority for MAG's shareholders, customers, and employees. MAG will continue to embrace innovation and pursue sustainability, ensuring a brighter and more sustainable future for all.

Aim to have  
**25** Boeing 737-8  
 by 2026



Plan to deploy  
**Mototok  
 Spacer  
 8600 NG**  
 by 2024

**12**  
 Units



Aim to have  
**20** Airbus A330neo  
 by 2028



# ABOUT MAG

GRI 2-1, 2-6, 2-7

Malaysia Aviation Group (MAG) is a global aviation organisation focused on Airlines, Aviation Services, and Loyalty and Travel Services.

MAG is a global aviation organisation with a multifaceted portfolio that encompasses three business portfolios from Airlines, Aviation Services, and Loyalty and Travel Services. At the heart of the Airlines is Malaysia Airlines, the nation's flagship carrier, renowned for its comprehensive global and domestic services. Complementing it are Firefly and MASwings, regional carriers dedicated to connecting the Malaysian community, along with AMAL by Malaysia Airlines, which specialises in providing top-tier travel solutions for pilgrimage journeys.

On the Aviation Services front, MAG delivers an array of essential services through MAB

Engineering, MASkargo, Aerodarat Services, and MAB Academy. These subsidiaries ensure excellence in maintenance, repair, and overhaul (MRO), cargo logistics, efficient ground handling, and industry-leading training programmes.

The Loyalty and Travel Services arm of MAG is designed to enrich the travel experience from start to finish. This includes Journify, a seamless travel companion; Enrich, the group's loyalty programme; and comprehensive holiday packages offered through MHolidays. Together, they form an integrated suite of services that cater to the evolving needs of travellers, ensuring memorable journeys and rewarding experiences.



**At the heart of the Airlines is Malaysia Airlines, the nation's flagship carrier, renowned for its comprehensive global and domestic services**



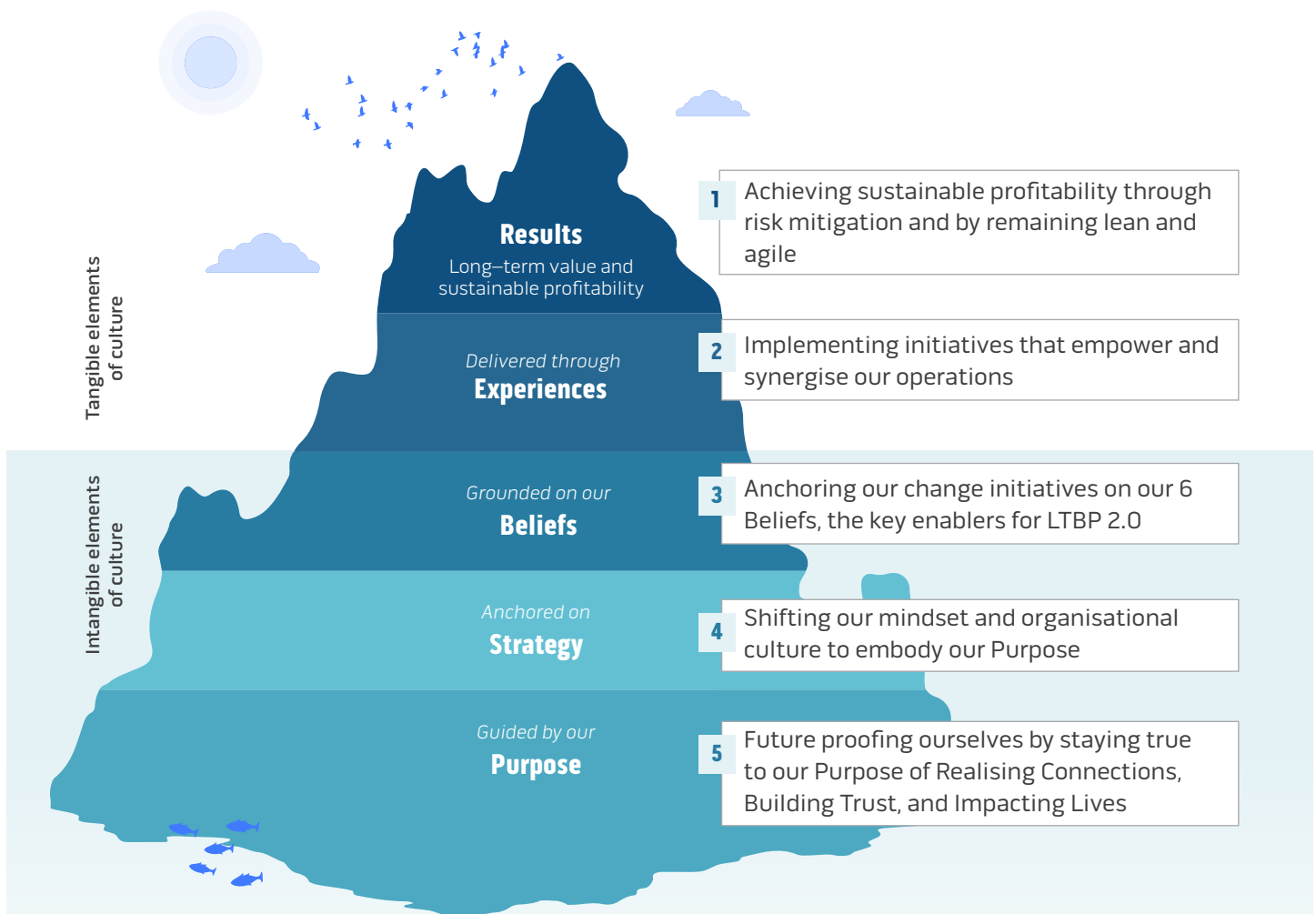
# THE MAG CULTURE

The culture at MAG is anchored on our Purpose of **Realising Connections, Building Trust, and Impacting Lives**. The tangible and intangible elements of the MAG culture underline the initiatives that create long-term value for all our stakeholders.

These initiatives are based on foundational pillars of MAG's 6 Beliefs, which enable our **Long-term Business Plan 2.0 (LTBP 2.0)**. The LTBP 2.0 outlines

our path to becoming Asia's leading travel and aviation services group, while achieving our goal of sustainable profitability.

We continue to identify and mitigate risks to our business and empower innovations that drive synergy between the various facets of our operations to ensure a stable balance sheet.



## 6 CULTURAL BELIEFS

Our **6 Cultural Beliefs** are the core tenets of our values and foundational pillars for our change initiatives. These beliefs are the key enablers for our **Long-term Business Plan 2.0 (LTBP 2.0)**, which outlines our path to becoming Asia's leading travel and aviation services group through initiatives that drive empowerment and synergy. We remain on course towards achieving profitable and sustainable results, while remaining lean and agile.

## 6 PILLARS OF CULTURAL BELIEFS

Our 6 Cultural Beliefs supports our Vision and shape our Statement of Purpose:



### PEOPLE are our True North

Our people are our strength - they are the difference



### CUSTOMER is our Centre of Gravity

Our customers are the reason we exist. It is our aim to put a smile on their faces



### SAFETY & SECURITY is our DNA

We aim to create a safe, inclusive, and conducive environment for all our staff, customers, and business partners



### SUSTAINABILITY is our Mission

Our view of long-term success is based on the business, governance, community, and environmental standpoints



### DIGITAL is Our Universe

We embrace technology and innovation in the way we do things



### INTEGRITY is our Commitment

There are no shortcuts. We act with courage and conviction in doing the right thing for our business, our customers, and our people at all times

# TRANSFORMED TO WIN

Our determination to being a profitable, dynamic, and winning organisation that is fit for the future had driven MAG to enhance our Target Operating Model (TOM):

- **Be future proof** in effectively managing change and creating opportunity
- **Remain competitive** at both domestic and international levels
- **Promote transparency and accountability** through clearly defined reporting structures
- **Stay focused** on our goals, even in times of crisis

## PREVIOUS

### Standalone Businesses with upside of further coordination/synergies



#### MAB-Focused:

- Digital and other travel-related assets (Journify, Enrich, MH Holidays) subsumed within MAB
- Support functions employed by MAB

Separately managed businesses - lacks coordination and ability to cross-sell/upsell products within different subsidiaries.

Lack of dedicated business to operationalise the travel solution & lifestyle business.

## TOM : 3 PROFIT CENTRES (effective January 2023)

### MAG Group

#### Airlines



#### Aviation Services



#### Loyalty and Travel Services



Conversion of MAG into a full fledged operating company (Op-Co) to house support and group-level functions

Revised operating model and reporting structure with the creation of a new dedicated Loyalty and Travel Services profit centre

Streamlined reporting structure under a dedicated leadership to drive coordination across businesses in the same profit centre

## TOM BENEFITS:

1. **Driving performance and productivity** by encouraging innovation to improve effectiveness and efficiency. Pay is structured based on performance and skill, which provides an incentive to grow and develop.
2. **Emphasising a culture of accountability**, where each individual takes ownership of his or her actions and contributions.
3. **Diversifying revenue** by establishing profit centres in the form of Aviation Services and Loyalty and Travel Services
4. **Building a stable and agile organisational structure**, creating synergy across the Group and its functions.



# OPERATIONAL PROFILE



## AIRLINES



As the national carrier, Malaysia Airlines offers superior connectivity to more than 900 destinations in 170 territories across the globe via its alliance with **oneworld**.



MASwings is the Pulse of Borneo. As East Malaysia's first commuter airline, it caters to the air travel needs of the Sabah and Sarawak population, providing affordable fares and convenient schedules for travel within and between the two states.



Firefly operates out of Penang, Subang and Kota Kinabalu hubs, offering quick, affordable and seamless connectivity to various destinations in Malaysia, Thailand, Singapore and Indonesia.



AMAL by Malaysia Airlines, the Hajj and Umrah pilgrimage arm of Malaysia Airlines, offers scheduled and chartered flights to Jeddah and Madinah, with a global presence in key markets such as Indonesia, China, Pakistan and parts of Africa.



## AVIATION SERVICES

### AeroDarat

AeroDarat provides ground handling services, including ramp and cargo in Kuala Lumpur International Airport (KLIA) and 15 other airports across Malaysia.



### maskargo

MASKargo offers scheduled and chartered air cargo services, warehousing and logistics services and cargo terminal operations, serving almost 100 destinations globally.

### mabengineering

MAB Engineering is a globally renowned Maintenance, Repair and Overhaul (MRO) facility catering to the aviation industry, with 11 aircraft bays spread across three hangars and operates from our state-of-the-art engineering facilities in Sepang and Subang.

### mabacademy

MAB Academy offers quality education, hospitality and services training for the MAG as well as other international airlines and organisations.

## LOYALTY AND TRAVEL SERVICES

### Enrich

Enrich is the frequent flyer programme for Malaysia Airlines, offering our guests access to privileges and lifestyle rewards. Enrich miles can be redeemed for flights with Malaysia Airlines, Firefly **oneworld** member and partner airlines, or other exclusive travel and lifestyle privileges.

### Journify

by Malaysia Aviation Group

Journify is a mobile application with everything to help our guests plan their entire travel itinerary, with travel tips, shopping and delivery options and a seamless connection with Enrich to enable users to accumulate Enrich points.

### MHolidays

MHolidays is Malaysia Airlines' integrated travel portal, designed to offer a seamless booking and travel experience, all with just a point and click.



## AIRCRAFT FLEET

				Average age of fleet (years)
 A350-900	7			5.9
 A330-300	15			11.9
 A330-200	6			16.6
 A330-200F	3			12.4
 B737-800 NG	42	5		11.6
 737-8	2			0.4
 ATR 72-500		9	8	14.4
 DHC-6			6	10.3

## MAG TRAVEL AND CARGO DESTINATION NETWORK

MAB			MAS WINGS		FY		AMAL	MAS KARGO	
ADL	ICN	AOR	BKI	BBN	BTJ	AOR	JED	BKK	BKI
AKL	KIX	BKI	BTU	BKM	DMK	BKI	MED	BOM	KCH
AMD	KJT	BKI	KCH	LBP	HKT	JHB	PKU	BWN	LBU
ATQ	KTM	BTU	LBU	LGL	KNO	KCH	YIA	CAN	
BKK	LHR	BTU	LDU	LKH	SIN	KBR		HAN	
BLR	MAA	JHB	LMN	LWY	XSP	LGK	Hajj Season	HKG	
BNE	MEL	KBR	MKM	MUR		MYY		MAA	
BOM	MNL	KCH	MYY	ODN		PEN	AOR	MAS	
CAN	NRT	KCH	MZV	TGC		SDK	JHB	MNL	
CGK	PER	KUA	SBW			TGG	KBR	PVG	
CMB	PKX	LBU	SDK			TWU	TGG	RGN	
COK	PNH	LGK	TWU				BKI	SYD	
DAC	PVG	MYY					KCH		
DEL	RGN	MYY					PEN		
DOH	SGN	PEN							
DPS	SIN	SBW							
HAN	SUB	SBW							
HKG	SYD	SDK							
HKT	TPE	TGG							
HND	TRV	TWU							
HYD	XMN								



# OUR APPROACH ON SUSTAINABILITY

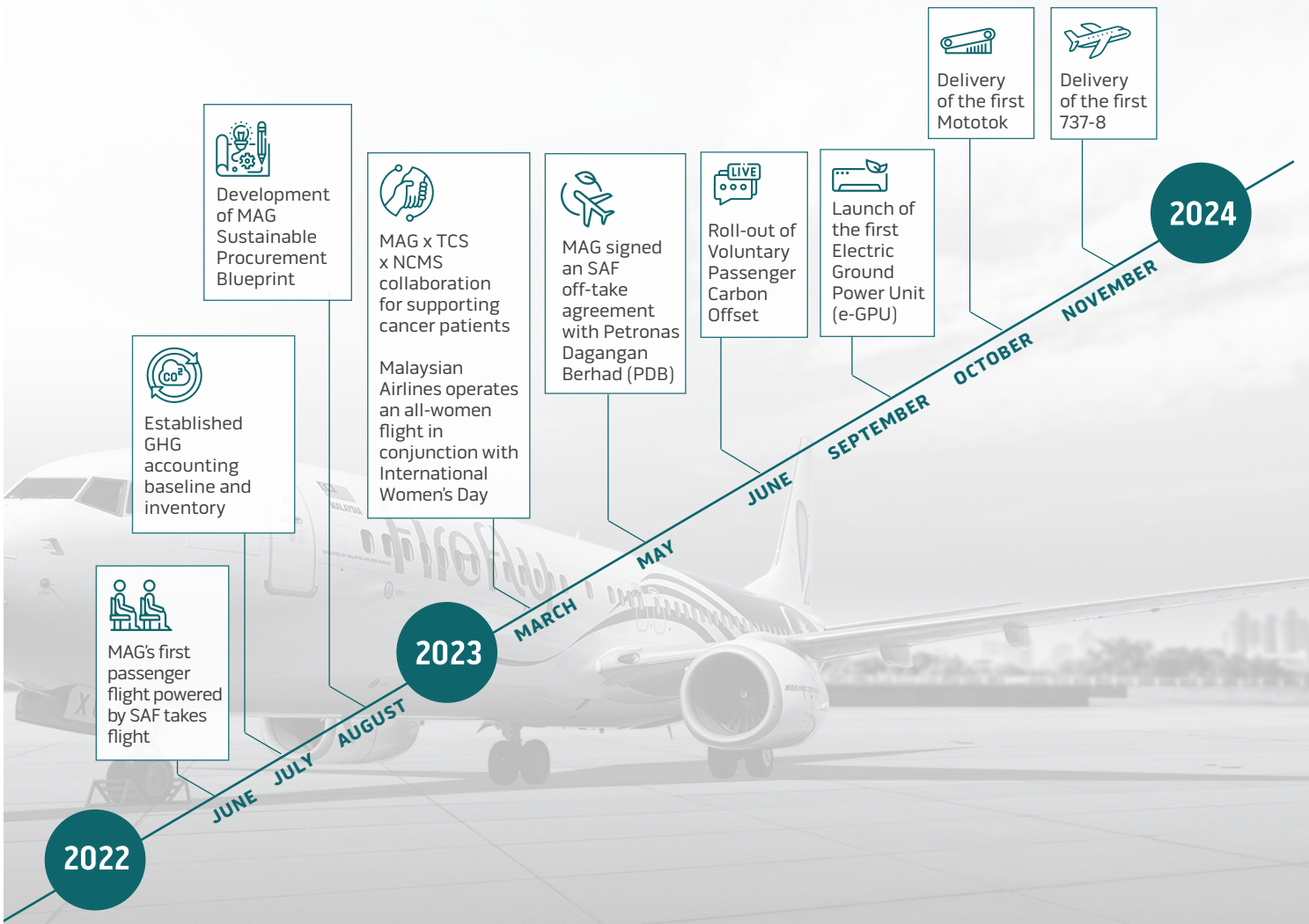
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Our sustainability journey is guided by our commitment to the environment and the communities we serve while upholding the highest standards of transparency and governance. Our approach integrates international best practices and frameworks, including the International Air Transport Association (IATA) Environmental, Social, and Governance (ESG) metrics and the United Nations Sustainable Development Goals (US SDGs), and we aligned our disclosures with Global Reporting Initiative (GRI) standards.

# 2022/2023 KEY HIGHLIGHTS



# OUR STRATEGY

GRI 2-22



MAG recognises the critical importance of aligning our sustainability strategies with global efforts to foster a sustainable and resilient future. Our commitment to the UN SDGs is reflected in our holistic approach to sustainability, incorporating these global goals into the core of our business operations and objectives.

5 GENDER EQUALITY



## ACHIEVING GENDER EQUALITY AND EMPOWERING WOMEN AND GIRLS

MAG is dedicated to fostering an inclusive workplace and enhancing female representation across all levels of our organisation. Our efforts are aligned with IATA's goal of achieving a 25% female representation in senior leadership roles by 2025.

In 2023, MAG exceeded this target by achieving an overall **34% female participation** in our workforce, with 49% female representation in senior management. Our focus now has shifted towards empowering female presence in traditionally underrepresented area, such as pilot and engineering crew members.

7 AFFORDABLE AND CLEAN ENERGY



## ENSURING ACCESS TO AFFORDABLE, RELIABLE, SUSTAINABLE, AND MODERN ENERGY FOR ALL

Committed to reducing our environmental footprint, MAG is dedicated to establishing infrastructure and facilities for renewable energy (RE) generation, enhancing energy efficiency, and digitalisation of our energy systems. Progress have been made towards integrating renewable energy solutions, contributing to our goal of ensuring access to affordable, reliable, sustainable, and modern energy.

In 2023, **17% of our annual energy usage was generated by our onsite solar PV system**. More information on energy efficiency practices is available in the Energy Management section on page 33.



## 12 RESPONSIBLE CONSUMPTION AND PRODUCTION



### ENSURING SUSTAINABLE CONSUMPTION AND PRODUCTION PATTERNS

Our aim is to identify and prioritise the reduction of the usage of single-use plastics (SUP) while increasing recycling rates, thereby showcasing our dedication to sustainable consumption and waste management practices.

In 2023, we replaced **4,503,700 units** of single-use plastics (SUP) used on-board across two (2) types of products (cutlery pack and dental kit) with those made from biodegradable materials. More information on our cabin waste reduction practices is available in the Responsible Waste and Material Resource Management section on page 34.

## 13 CLIMATE ACTION



### TAKING URGENT ACTION TO COMBAT CLIMATE CHANGE AND ITS IMPACTS

Our comprehensive decarbonisation strategy encompasses operational efficiency, fleet modernisation, sustainable aviation fuels (SAF), and carbon offsetting initiatives. These efforts are aimed at reducing our carbon footprint and contributing to global climate action.

In 2023, MAG **transitioned to using electric powered ground support equipment (e-GSE)**, with the introduction of the e-GPU and the delivery of our first electric pushback tug (Mototok). In December, we **inducted two (2) new Boeing 737-8 aircraft**, which consumes 14% less fuel compared to its predecessors. We launched our voluntary Passenger Carbon Offset Programme through partnership with CHOOOSE which enables customers to offset the carbon emissions associated with their flights via our website

MAG will benefit from a comprehensive climate risk assessment on the transition, physical and liability climate risks to understand on the potential climate risks need to be mitigated by the Group and the potential climate-related opportunities which can be captured.

Transitioned to using  
**electric powered  
ground support  
equipment  
(e-GSE)**



Received  
**2** new  
Boeing  
737-8



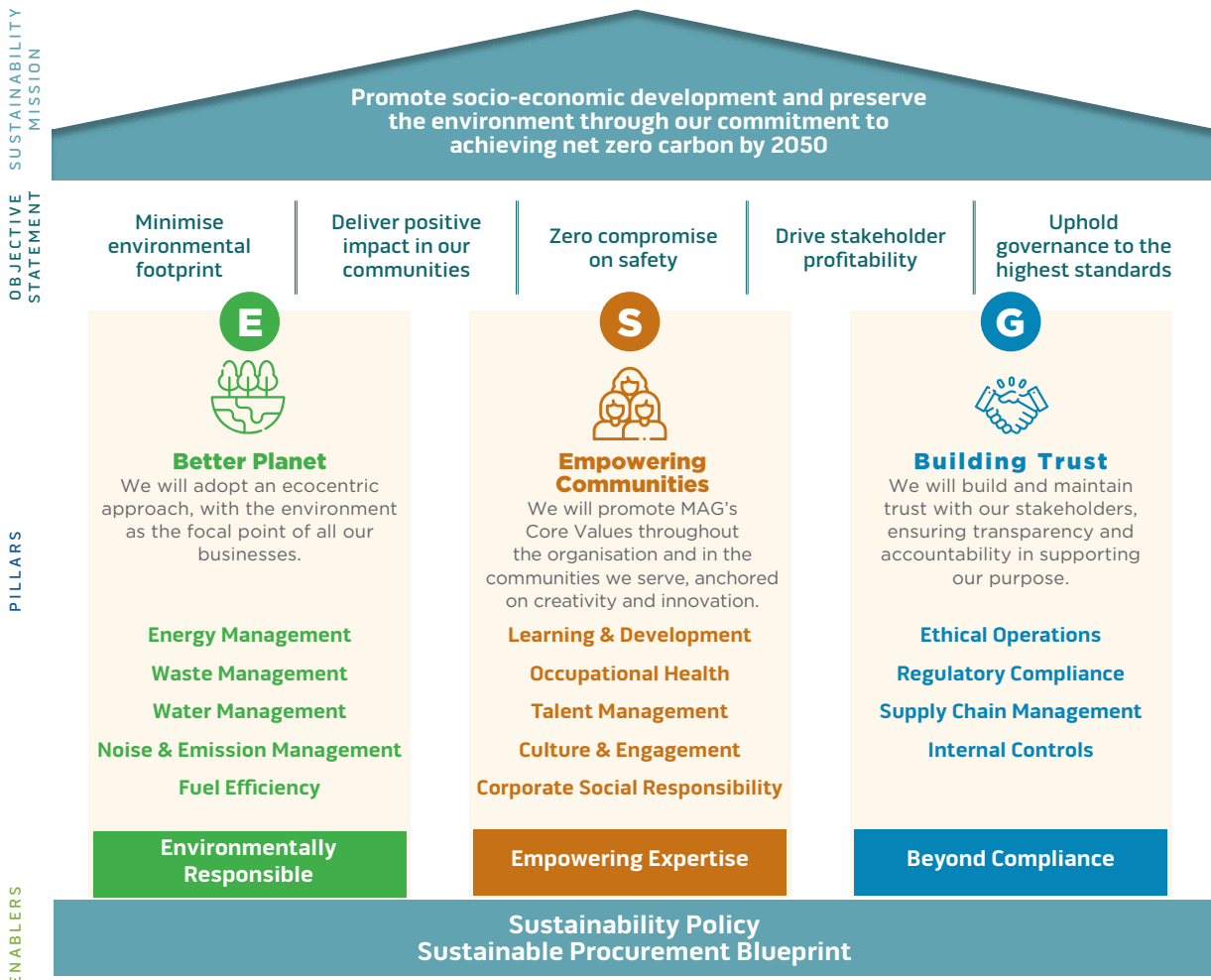
Launched  
the voluntary  
**Passenger  
Carbon Offset  
Programme**



## OUR AMBITION

Sustainability is at the core of MAG's business strategy. Our operations are aligned with international standards and best practices and reflect our commitment to promoting socio economic development and preserving the environment.

MAG is developing a roadmap to chart our sustainability focus area and strategic directions

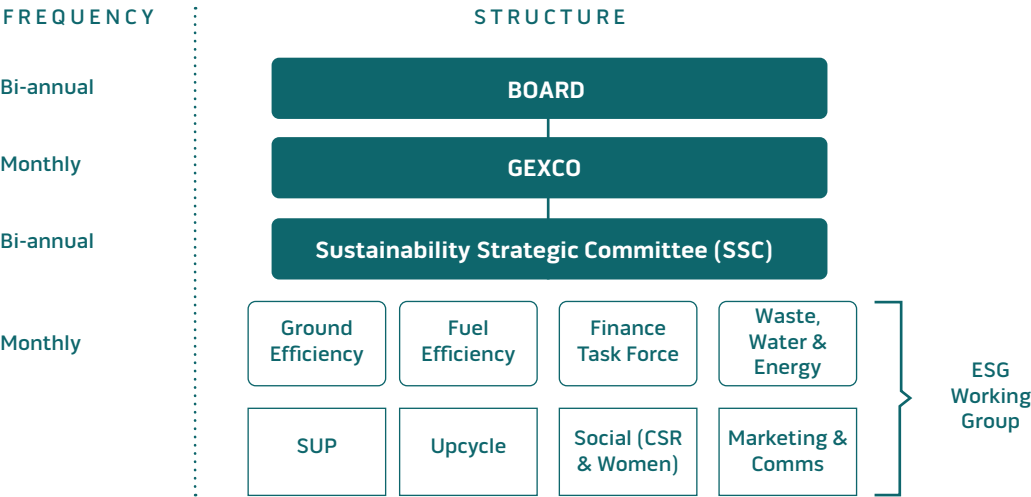




# SUSTAINABILITY GOVERNANCE

GRI 2-9, 2-12, 2-13, 2-22

MAG has established a robust governance framework to oversee and manage our sustainability initiatives. It is designed to ensure effective oversight, strategic alignment, and operational execution of our sustainability objectives. This structure facilitates comprehensive management across ESG dimensions and supports MAG’s commitments to sustainable development.



The Board provides the ultimate oversight of sustainability initiatives, ensuring these initiatives are integrated into the broader corporate governance framework. Their involvement ensures accountability and the alignment of sustainability with the corporate mission and objectives.

The GEXCO, comprising senior executives and leaders from various business entities, is responsible for setting strategic directions on MAG’s sustainability initiatives. This group provides high-level oversight and guidance, ensuring that sustainability initiatives are aligned with the Group’s overall business strategy.

The SSC comprises 10 permanent GEXCO members, supported by additional GEXCO members and/or Heads of Business Units. Its role is to review the Group’s ESG matters, performance, and key issues, and to steer the ESG Working Group on matters that require its attention. Each department and business entity is represented in the various ESG Working Group, which are tasked with implementing the Group’s ESG strategic action plan according to their respective areas.

We monitor the progress towards our sustainability goals through regular meetings with key sustainability governance stakeholders. This approach embeds sustainability throughout the organisation, with clear roles and responsibilities that ensure effective implementation and accountability.

# MATERIALITY ASSESSMENT AND STAKEHOLDER ENGAGEMENT

GRI 2-28, 2-29

The materiality assessment and stakeholder engagement process are critical components of MAG's sustainability strategy. These processes ensure that our sustainability initiatives are aligned with both stakeholder expectations and the company's strategic business objectives. In 2022, MAG conducted a materiality assessment to gather insights from key stakeholders and assess our ESG impacts. In 2023, we reviewed and refreshed the prioritisation of material topics to enable us to conduct a comprehensive materiality assessment in the following year.

## MATERIALITY ASSESSMENT PROCESS

### 1. Identification of Material Topics

MAG begins its materiality assessment by identifying potential sustainability topics that could impact the business and our stakeholders. This involves comprehensive market research, benchmarking against industry peers, and reviews of internal business strategies.

### 2. Assessment

Once data is collected, we assess the materiality of each sustainability topic by evaluating its impact on the organisation and its importance to stakeholders. The results from the materiality assessment are analysed to prioritise sustainability topics that are most significant.

### 3. Prioritisation and Validation of Results

The outcomes of the materiality assessment are presented to MAG's Board of Directors for validation to ensure alignment with overall business strategy and stakeholder expectations.

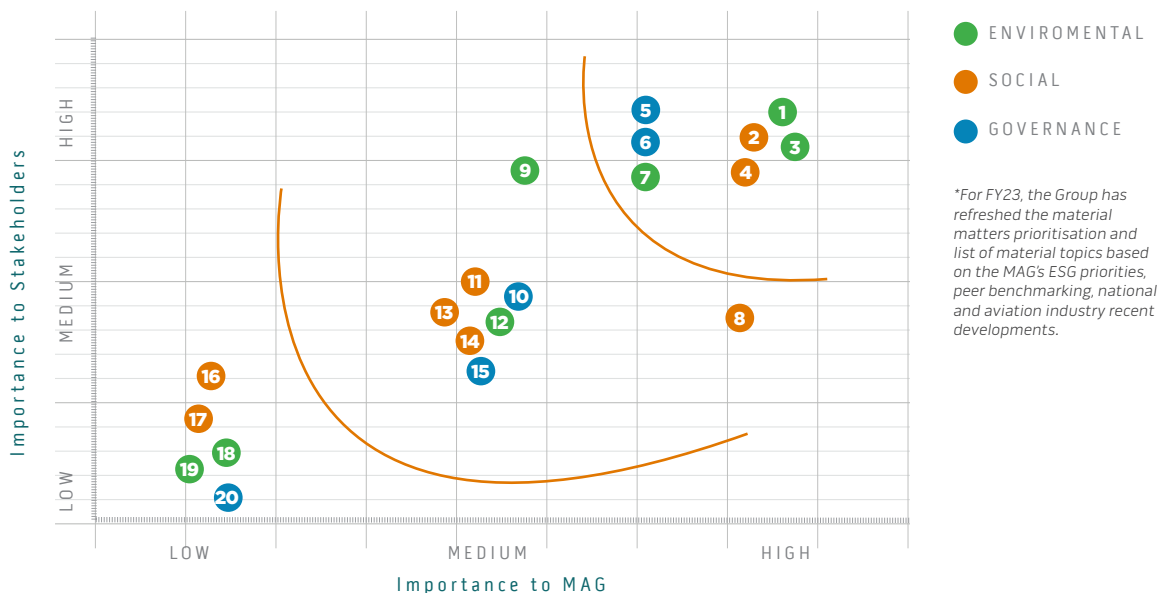




## MATERIAL TOPICS PRIORITISATION

HIGH	MEDIUM	LOW
1 Managing GHG emissions	8 Employee engagement and talent development	16 Data privacy
2 Employee health and safety	9 Waste management practices	17 Community welfare
3 Energy management practices	10 Disclosures	18 Noise reduction
4 Aircraft safety	11 Human rights	19 Biodiversity preservation
5 Risk management	12 Water management practices	20 Brand management
6 Corporate governance and business ethics	13 Labour practices and D&I	
7 Climate change related strategies	14 Customer welfare and management	
	15 Supplier relationship management	

## MAG'S REFRESHED MATERIALITY MATRIX



## KEY CHANGES IN PRIORITISATION OF MATERIAL TOPICS IN FY2023

- |  |   |
|--|---|
| <b>1 Climate Change Strategy Enhancement</b>   | <p>The emphasis on strategies related to climate change has been elevated to a high priority. This is in response to the crucial need for decarbonisation and climate adaptation.</p>   |
| <b>2 Corporate Governance and Ethics Focus</b> | <p>MAG has refined the material topics concerning the code of conduct and the structure and management of the board to better highlight the importance of corporate governance and ethical business practices.</p>  |
| <b>3 Sustainable Supply Chain Management</b>   | <p>The topics of supplier relationship management and supply chain management have been consolidated under sustainable supply chain management. This area now includes sustainable procurement practices, active engagement with suppliers, and development programmes for vendors. It has been assigned a medium priority to reflect the growing significance of ESG considerations in the Phase 1 of MAG's Sustainable Procurement Blueprint. This phase aimed to enhance ESG awareness among the key procurement stakeholders and throughout the value chain. Upon completion of Phase 1 in 2024, Phase 2 will prioritise increasing the percentage of sustainable sourcing materials procured by the Group.</p> |

## STAKEHOLDER ENGAGEMENT PROCESS

MAG identifies stakeholders based on their influence on the organisation, their level of interest in MAG's operations, and their potential impact on the sustainability strategy. Our key stakeholders are diverse and include investors, board members, senior management, the Civil Aviation Authority of Malaysia (CAAM), suppliers, employees, corporate clients, customers, **oneworld** Alliance (**oneworld**), and financial institutions. Additionally, we seek input from key internal specialists across various departments to assess the environmental, social, and governance impacts and potential risks and opportunities.

We employ various engagement methods such as surveys, interviews, and workshops to gather diverse perspectives on the importance and impact of identified sustainability topics. We tailor our engagement strategy for each stakeholder group, determining the appropriate frequency, method, and focus of engagement based on the nature of the relationship and the issues of mutual concern. Feedback from stakeholders is analysed and used to make informed adjustments to enhance sustainability practices and address stakeholder concerns effectively.

STAKEHOLDERS	ENGAGEMENT MODE	FREQUENCY	KEY INTEREST AND CONCERNS	HOW WE RESPONDED
Shareholders	<ul style="list-style-type: none"> <li>General Meetings</li> <li>Annual Performance Update</li> </ul>	<ul style="list-style-type: none"> <li>Annually</li> </ul>	<ul style="list-style-type: none"> <li>Business and Group related matters</li> </ul>	<ul style="list-style-type: none"> <li>Physical meeting</li> <li>Virtual</li> </ul>
Government and Regulators	<ul style="list-style-type: none"> <li>Meetings chaired by MOT, CAAM</li> <li>Forums – Air Transport Working Group (ATWG)</li> <li>SAF task force</li> <li>CORSIA task force</li> </ul>	<ul style="list-style-type: none"> <li>As and when required by MOT/CAAM</li> <li>Twice a year (ATWG)</li> </ul>	<ul style="list-style-type: none"> <li>Preparation of Malaysian Aviation Decarbonisation Blueprint</li> <li>State action plan</li> </ul>	<ul style="list-style-type: none"> <li>Physical meeting</li> <li>Emails</li> </ul>
Employees	<ul style="list-style-type: none"> <li>Employee Handbook</li> <li>Townhalls</li> <li>Performance reviews</li> <li>Internal and departmental meetings</li> <li>Regular communications (PULSEdaily)</li> </ul>	<ul style="list-style-type: none"> <li>Onboarding</li> <li>Quarterly</li> <li>Periodic</li> <li>Weekly</li> </ul>	<ul style="list-style-type: none"> <li>Policies, processes and procedures</li> <li>Business updates</li> <li>Employee Welfare, Wellbeing and Development</li> </ul>	<ul style="list-style-type: none"> <li>Physical</li> <li>Virtual</li> <li>Email and Newsletter</li> </ul>
Customer	<ul style="list-style-type: none"> <li>Customer Engagement via MH Focus Group, mystery shopper</li> <li>Customer Survey</li> </ul>	<ul style="list-style-type: none"> <li>Quarterly</li> <li>Monthly</li> </ul>	<ul style="list-style-type: none"> <li>Customer feedback</li> <li>Customer Insights and sentiment</li> </ul>	<ul style="list-style-type: none"> <li>Physical engagement</li> <li>Emails</li> </ul>
Suppliers	<ul style="list-style-type: none"> <li>Vendor registration</li> <li>Performance evaluation</li> <li>Contract renewal discussion</li> <li>Quality assurance audit</li> </ul>	<ul style="list-style-type: none"> <li>Onboarding session</li> <li>Periodic</li> <li>When necessary</li> </ul>	<ul style="list-style-type: none"> <li>Risk Analysis and ESG requirements</li> <li>Service-level Agreement (SLA) and Key Performance Indicator (KPI)</li> <li>Contract renewal</li> <li>Clarification sessions between Business Unit and Vendor</li> </ul>	<ul style="list-style-type: none"> <li>Virtual</li> <li>Email</li> <li>Physical meeting</li> </ul>
Communities	<ul style="list-style-type: none"> <li>Support through CSR activities, nonprofit organisation and NGO partners</li> </ul>	<ul style="list-style-type: none"> <li>When necessary or upon request</li> </ul>	<ul style="list-style-type: none"> <li>Community engagement, assistance and development</li> </ul>	<ul style="list-style-type: none"> <li>CSR activities by MH Rangers</li> <li>Sponsorships and collaborations</li> </ul>
Industry Stakeholders	<ul style="list-style-type: none"> <li>IATA - World Sustainability Symposium (WSS)</li> <li>Aviation Energy Forum (AEF)</li> <li><b>oneworld</b> - Environment Social Board</li> <li>AAPA - Environment Working Group</li> </ul>	<ul style="list-style-type: none"> <li>Annual</li> <li>Quarterly</li> <li>Bi-annual</li> </ul>	<ul style="list-style-type: none"> <li>Regulations and industry updates</li> </ul>	<ul style="list-style-type: none"> <li>Physical meeting</li> <li>Virtual</li> </ul>

# ENVIRONMENT

## 2023 Environment Performance Highlights



**75,965**  
tCO<sub>2</sub>e  
avoidance  
from fuel  
savings



Replaced **4,503,700**  
units of single-use plastics  
(SUP) used on-board  
across two (2) types of  
products



**17%** of total  
annual energy  
consumption  
from on-site  
generated RE

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# MAG'S DECARBONISATION AMBITION


 A stylized illustration of a green tree with a white cloud above it, positioned to the right of the main title.

GRI 3-3, 305-1, 305-2, 305-3, 305-5

IATA E.1, E.2, E.3, E.6

As an aviation company with a global presence, we understand our role in tackling environmental challenges and our ability to contribute to the environment. We are committed to incorporating sustainable practices in our operations.

In this section, we outline our efforts to reduce our environmental impact through strategic climate change and emission management, energy conservation practices, and responsible waste and resource management. Our approach aims to follow good practices within the aviation industry. We are focusing on decarbonisation initiatives such as implementing more fuel-efficient aircraft and exploring sustainable aviation fuels.

## OUTLINE OF CLIMATE CHANGE IMPACT AND MAG's 4 DECARBONISATION PILLARS

Aviation contributes approximately 2-3% of global carbon dioxide (CO<sub>2</sub>) emissions annually. The aviation industry has experienced rapid growth in recent decades, with air travel demand expected to continue increasing in the future. If left unchecked, it is estimated that aviation emissions could increase substantially by 2050.

The Group is driving action across the following four decarbonisation pillars to reduce GHG emission from business operations:

**Operational Efficiency:** Implementing aircraft fuel-efficiency programmes, route optimisation, and improving ground operations.

**Fleet Modernisation:** Transitioning to newer, more fuel-efficient aircraft to lessen overall emissions.

**Sustainable Aviation Fuels (SAF):** Recognising the critical role of SAF, which can reduce lifecycle carbon emissions by up to 80% compared to conventional jet fuel.

### Market-Based Measures (Carbon Offsetting):

Complying with CORSIA monitoring, reporting and verification (MRV) requirements since 2019. In 2024, we expect to begin offsetting eligible international air travel emissions through the purchase of carbon credits.

Collaboration with industry partners, stakeholders, and regulatory bodies is essential for driving collective action towards decarbonization. MAG engages in partnerships and advocacy efforts to promote sustainable practices and influence policy changes.

MAG is committed to achieving long-term targets for reducing carbon emissions and advancing sustainability objectives. We anticipate challenges but remain focused on continuous improvement and adaptation to evolving environmental standards.



## PILLAR 1: OPERATIONAL EFFICIENCY

Our decarbonisation strategy revolves around optimising our operations, which involves several key initiatives aimed at reducing fuel consumption, the primary source of our emissions.

### AIRCRAFT FLEET FUEL MANAGEMENT

Optimising the fuel consumption of our aircraft fleet allows us to reduce our Scope 1 GHG emissions.

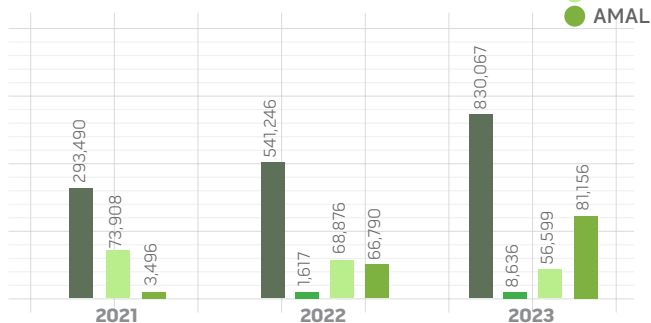
In 2023, we implemented several aircraft fuel efficiency initiatives to reduce fuel consumption and emissions, while maintaining safety standards:

- **Continuous descent altitude:** Maintaining a steady descent profile from cruise altitude to landing
- **Single engine taxi-in:** Usage of a single engine during taxi-in
- **Reduced acceleration altitude:** Minimising altitude and speed increments during the climb, while maintaining safe ascent profiles
- **Idle reverse thrust:** Using idle reverse thrust upon landing
- **Reduced Flap Landing:** Reducing the use of flap extensions during landing to reduce drag
- **Pilot Extra Fuel:** Optimising the amount of extra fuel carried, therefore reducing the weight of the aircraft during flight
- **Zero Fuel Weight Error:** Ensuring precise calculations of aircraft weight, excluding fuel, to optimise performance and fuel efficiency
- **Cruise Direct Track:** Following the most direct route between two points
- **NB RNP-AR:** Improving aircraft navigation increases operational efficiency by reducing the distance travelled during the landing approach
- **Other measures:** Refurbishing our existing aircraft (B737-800 NG) to reduce weight, conducting regular and proper maintenance on all our aircraft, and optimising uplift weight

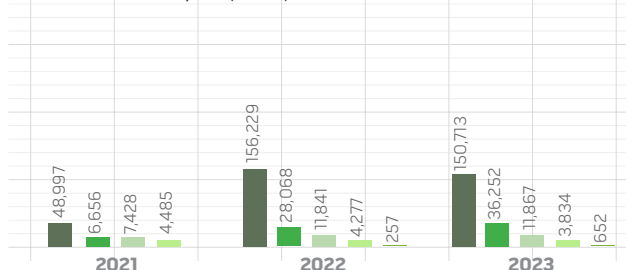
Business Entity	Metrics	2021	2022	2023
MAB	Fuel savings (tonnes)	6,221	17,708	18,292
FY		1,489	6,974	4,964
MK		1,197	1,099	783
MAB	Fuel savings CO <sub>2</sub> avoidance (tonnes)	19,657	55,957	57,803
FY		4703.79	22038	15,688
MK		3,784	3,473	2,474

### MAG AIRCRAFT FLEET FUEL CONSUMPTION

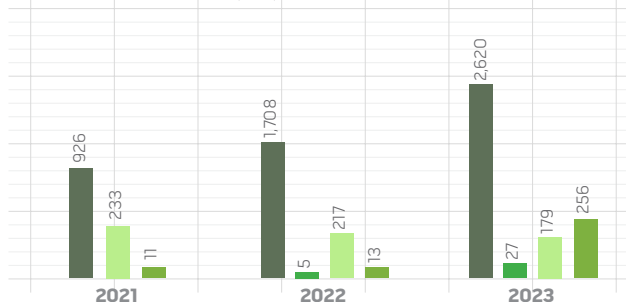
International fuel consumption (tonnes)



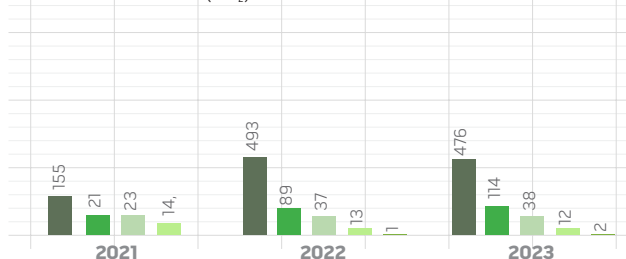
Domestic fuel consumption (tonnes)



International fuel emissions (tCO<sub>2</sub>)



Domestic fuel emissions (tCO<sub>2</sub>)



## GROUND SERVICE EQUIPMENT EFFICIENCY

Our ground handling team is continuously exploring ways to improve the energy efficiency of their service equipment, including electrification where possible.

In October 2023, the Group received its first Mototok Spacer 8600NG, allowing MAG's ground handling arm AeroDarat Services (ADS) to operate a fully-electric pushback. This makes MAG the first organisation in Asia and second in the world to operate this particular electric pushback model, signifying our commitment to reduce emissions from the ground up. An electric pushback GSE will reduce the GHG emission of ground operations by 10 tCO<sub>2</sub>e per year compared to conventional GSE due to reduction in fossil fuel usage. Additionally, the electric pushback GSE provides offers better navigation and maneuverability resulting in more efficient ground operations.

In 2024, ADS is planning to conduct numerous GSE electrification and automation Proof of Concept (POC) to assess the feasibility of these equipment to replace conventional fossil fuel powered GSE.

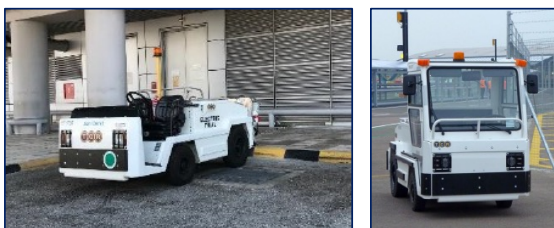
## PROOF OF CONCEPT FOR GSE ELECTRIFICATION AND AUTOMATION



**TISABAS (COMPACT FOLDING CONVEYOR SYSTEM)**



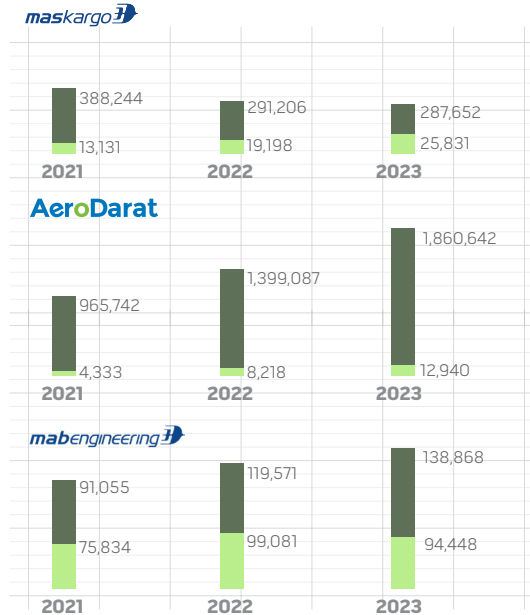
**HANGCHA E-TRACTOR TRIAL**



**CHARLOTTE E-TRACTOR TRIAL**

## MAG GROUND SERVICE EQUIPMENT (GSE) FUEL CONSUMPTION BY BUSINESS ENTITY

● Diesel consumption (litres)  
● Petrol consumption (litres)



In 2023, 77% of MAG's total diesel and petrol consumption was contributed by ADS. ADS is currently conducting a GSE replacement study to evaluate alternative, efficient GSE to replace existing inefficient and fossil fuel-based machinery. Over the past three years, all business entities except MASKargo recorded an increasing trend in GSE fuel consumption, reflecting the rise in airline business activity following the post-COVID-19 economic recovery. In contrast, MASKargo's fuel consumption has reduced as cargo loads and business activity have decreased.

## ELECTRIC GROUND POWER UNIT (EGPU)

MAG and Malaysia Airports Holdings Berhad (MAHB) have made a significant advancement in the Malaysian aviation industry by introducing the nation's first eGPU infrastructure at Subang Airport.

This important initiative is set to play a key role in reducing carbon emissions and noise pollution within the aviation sector. By replacing traditional diesel-powered GPUs with sustainable electric alternatives, the Group has managed to reduce emissions by 50 tCO<sub>2</sub>e and noise emissions by 65 db(A).

## PILLAR 2: FLEET MODERNISATION

MAG has taken significant steps in modernising our fleet to stay competitive in a dynamic market. This initiative is driven by the need to enhance operational efficiency, improve passenger experience, and address environmental concerns.

In Q4 of 2022, Boeing announced a Master Schedule Change (MSC) that affected the delivery schedule of the Boeing 737-8 aircraft intended for MAB due to supply chain constraints. Instead of receiving seven aircraft in 2023 as initially planned, two were delivered. Additionally, to address a shortage of wide-body aircraft and meet increasing demand in both regional and international markets, MAB inducted another A350-900 9M-MAH aircraft in 2023.

In 2023, MAG welcomed three significant additions to our fleet:



One (1) A350-900 aircraft MSN378 9M-MAH, acquired from SMBC on 10 November 2023



One (1) Boeing 737-8 aircraft MSN66439 9M-MVA, delivered on 13 November 2023



One (1) Boeing 737-8 aircraft MSN66354 9M-MVD, delivered on 1 December 2023

## GHG GAS EMISSION REDUCTION FEATURES OF THE BOEING 737-8

The Boeing 737-8 incorporates several advanced features that contribute to the reduction of GHG emissions compared to its predecessors.

**Fuel Efficiency:** The aircraft is designed with advanced aerodynamics, which, along with the use of lightweight materials, results in higher fuel efficiency. By burning less fuel per passenger-mile, it directly reduces GHG emissions.

**Advanced Engines:** It is equipped with the CFM International LEAP-1B engines, which are modern high-bypass turbofan engines. These are more fuel-efficient and produce lower emissions than the older engine designs.

**Winglets:** The aircraft includes specially designed winglets that reduce aerodynamic drag. This efficiency reduces fuel consumption, thereby lowering GHG emissions.

**Advanced Avionics:** The state-of-the-art avionics systems optimise flight paths. This results in more efficient route planning and management, reducing the unnecessary fuel burn and, consequently, emissions.

**Lightweight Materials:** The use of advanced lightweight materials, such as carbon fibre composites, in the construction of the aircraft, leads to a reduction in overall weight. This reduction in weight translates to improved fuel efficiency and lower emissions per passenger mile.

**Improved Maintenance Programmes:** Advanced maintenance programmes for the 737-8 enhance the performance of the aircraft and reduce fuel consumption. Predictive maintenance technologies are particularly valuable as they can identify and rectify potential issues before they lead to inefficiencies or increased emissions.

**Noise Reduction:** While not directly related to GHG emissions, the quieter engine and improved aerodynamics often coincide with fuel efficiency improvements.

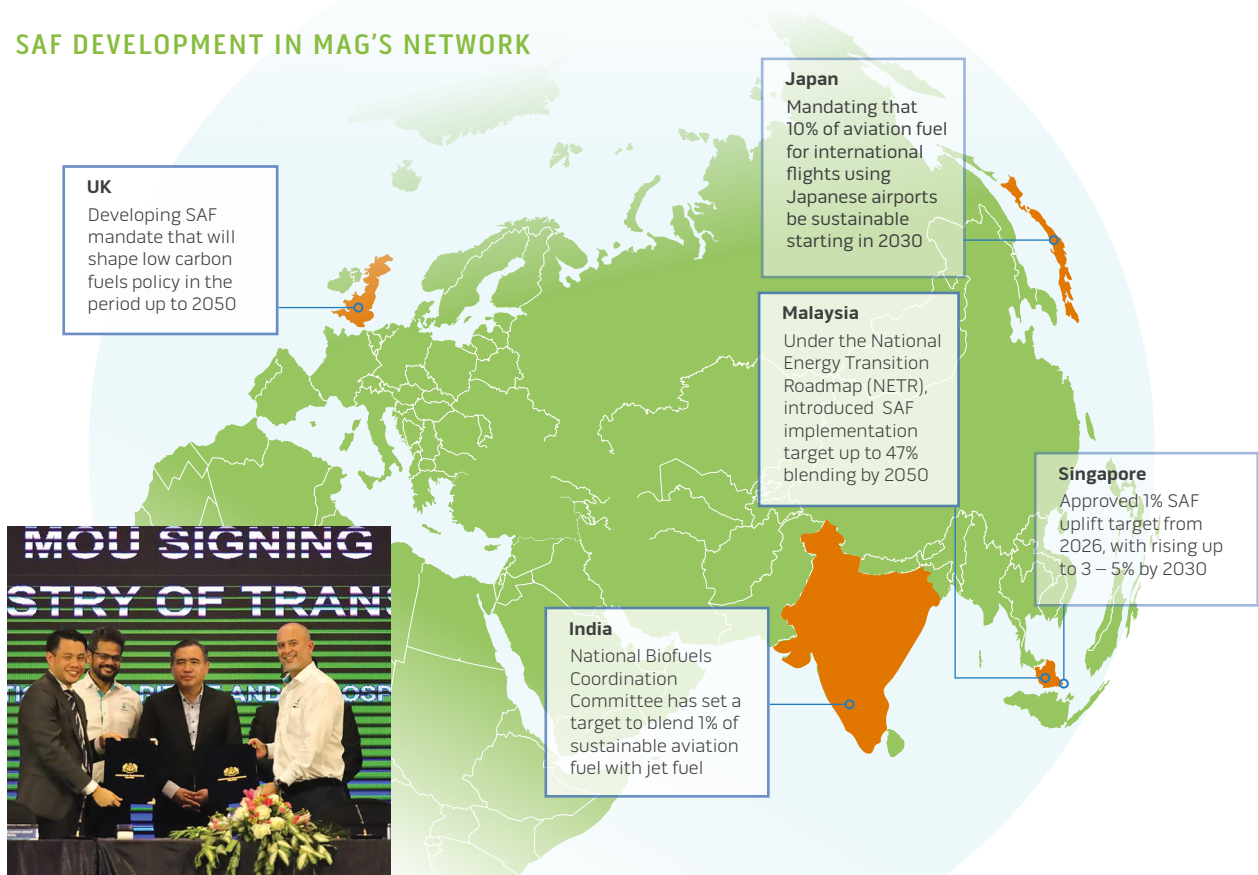
## PILLAR 3: SUSTAINABLE AVIATION FUEL (SAF)

Sustainable aviation fuel (SAF) has emerged as a substantial means to reduce carbon emissions in the aviation industry. MAG proudly stands at the forefront of this initiative within Malaysian airspace, having executed 19 demonstrative flights utilising SAF (passenger and cargo) since December 2021.

An increasing number of countries have imposed or are developing SAF mandates and incentive driven initiatives to promote the development and uptake of SAF in the aviation sector. The Association of Asia Pacific

Airlines (AAPA), of which MAG is a member, has pledged to work together to achieve 5% SAF aspiration target by 2030. Recently, Singapore announced a 1% SAF uplift target for all outbound flights starting in 2026, along with a SAF levy on outbound passengers to fund the rollout of the SAF mandate. Additionally, countries like India and Japan are planning to implement SAF mandates, while the UK is developing similar mandates to promote the development of SAF infrastructure and supply chains, thereby increasing SAF adoption among airlines.

### SAF DEVELOPMENT IN MAG'S NETWORK



In a significant move towards sustainable biofuel development, MAG signed a SAF Offtake Agreement with Petronas Dagangan Bhd (PDB) in May 2023, in tandem with the LIMA aviation exhibition in Langkawi. This agreement signifies our intent to purchase approximately 230,000 tonnes of SAF from PDB, a substantial stride towards our objective of reaching net-zero carbon emissions by the year 2050. The first batch of SAF is set to be delivered in 2027.

The production of the SAF will take place at PETRONAS' facility and the fuel will be supplied directly to Kuala Lumpur International Airport (KLIA) to support MAG airlines operations, solidifying the Group's commitment to a better aviation practices.



## PILLAR 4: MARKET-BASED MEASURES (CARBON OFFSETTING)

In the challenging context of the aviation industry – a sector where reducing carbon emissions is complex – carbon offsetting is a key element in the decarbonisation strategy. MAG's carbon offset approach utilises two principal methods:

- Adherence to compulsory carbon offsetting mandates
- Enabling customers to opt for voluntary carbon offsetting

### 1. MANDATORY CARBON OFFSETTING

Since its adoption by governments in 2016, the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) has been fundamental in the industry's commitment to stabilise net CO<sub>2</sub> emissions from international flights, starting in 2021. CORSIA is designed to complement, rather than replace, the aviation sector's efforts to reduce emissions through technological advancements, operational improvements, and infrastructure enhancements. This initiative supports the use of Sustainable Aviation Fuel (SAF), encourages increased fuel efficiency, and promotes continuous technological innovation.



#### CORSIA Phases and timeline of CORSIA implementation:

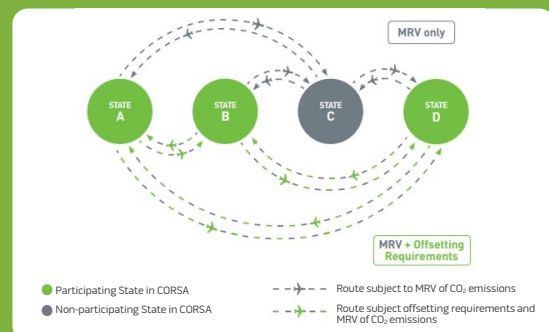
**Voluntary Phase:** An aeroplane operator (AO) is required to monitor, report, and verify (MRV) CO<sub>2</sub> emissions from all international flights every year from 2019 but only flights between states that volunteer to participate in CORSIA will be subject to offsetting requirements. Some of the notable non-participating states for the voluntary phase are China, India, Russia and Brazil.

**Mandatory Phase:** All international flights will be subject to offsetting requirements. However, flights to and from Least Developed Countries (LDCs), Small Island Developing States (SIDS), Landlocked Developing Countries (LLDCs) and states which represented less than 0.5% of global international RTK in 2018 will be exempted from offsetting requirements unless these states voluntarily participate.

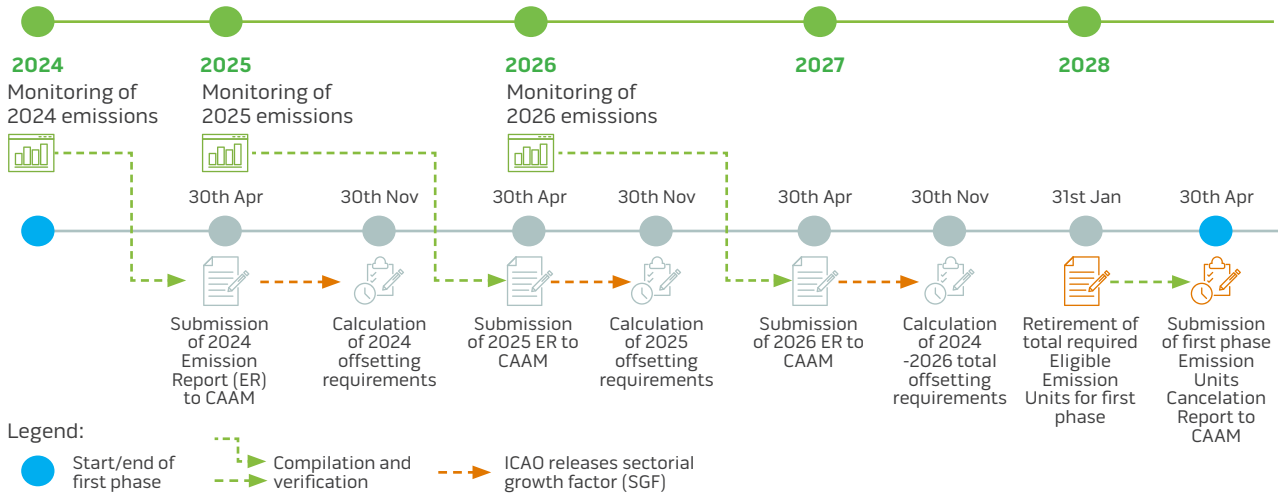
**The industry fully supports ICAO's latest CORSIA baseline of 85% of 2019 emissions from 2024 until the end of the scheme in 2035**



Applicability of CORSIA requirements for participating and non-participating states.



## CORSIA FIRST PHASE IMPLEMENTATION TIMELINE FOR AOS:



Aeroplane operators will only be able to calculate the total amount of carbon offsetting requirements for first phase (2024 – 2026) in November 2027 and are required to completely retire the total Eligible Emissions Units (EEU) based on the final carbon offsetting requirements by 31st January 2028.

## HOW MAG IS PREPARING TO MEET CORSIA REQUIREMENTS

### Pilot Phase:

Malaysia Airlines has already been compliant with CORSIA's Monitoring, Reporting and Verification (MRV) requirements since 2019. An Emissions Report is submitted annually to the Civil Aviation Authority of Malaysia. Thus far, the industry's international emissions have remained well below the baseline year, and consequently there have been no offsetting requirements in the Pilot Phase (2021-2023).

### Phase 1:

The offsetting expectation for all airlines is slated to commence in Phase 1 (starting in 2024), driven by a positive sector growth factor. This means that emissions in 2024 are projected to exceed 85% of the 2019 baseline emissions. It's crucial to highlight that Phase 1 of CORSIA remains voluntary, implying that States not participating in CORSIA bear no offsetting obligations. Consequently, flights between Malaysia and non-participating states, such as India and China, are exempt from offsetting requirements for MAG. However, starting from 2027 in the Mandatory Phase, all these states will be mandated to participate, resulting in a significant rise in offsetting obligations for MAG.

## CORSIA IN NUMBERS (as of 31 December 2023)

CORSIA Participation	CORSIA Eligible Fuels		CORSIA Central Registry	
<b>126</b> Volunteer States	<b>43</b> Feedstock Types	<b>9</b> Conversion Processes	<b>608</b> Mtonnes of 2019 CO <sub>2</sub> Emissions <sup>4</sup>	<b>429</b> Mtonnes of 2022 CO <sub>2</sub> Emissions <sup>4</sup>
<b>CORSIA Eligible Emissions Units</b> <b>11</b> eligible programmes <sup>1</sup> <b>2</b> eligible programmes <sup>2</sup>	<b>14</b> Sustainability Themes <sup>3</sup>	<b>2</b> Sustainability Certification Themes <sup>1,2</sup>	<b>653</b> Aeroplane Operators	<b>115</b> CO <sub>2</sub> Reports Submitted

<sup>1</sup> For the Pilot Phase (2021 - 2023)

<sup>2</sup> For the first Phase (2024 - 2026)

<sup>3</sup> From 2024 onwards (2 Sustainability Themes applicable for the Pilot phase)

<sup>4</sup> Totals include CO<sub>2</sub> emissions submitted States through the CCR and emissions provided by ICAO to fill the emissions gaps

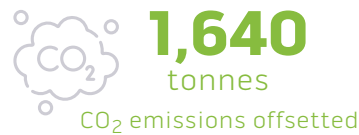
Source: [https://www.icao.int/environmental-protection/CORSIA/Documents/CORSIA%20Newsletter%20-%20December%202023\\_for%20web.pdf](https://www.icao.int/environmental-protection/CORSIA/Documents/CORSIA%20Newsletter%20-%20December%202023_for%20web.pdf)

MAG is refining a Carbon Credit Trading Policy & Framework (the Framework) as a guideline to purchase carbon credits. The Framework covers roles and responsibilities, purchasing criteria, CORSIA risk and risk mitigation, purchasing channel, managing channel risk, managing project-based risks, registries, trading strategies, monitoring and reporting.

Upon securing MAG BOD's approval on the Framework, MAG will commence its CORSIA eligible carbon credits procurement strategy from accredited carbon trading experts involving financial and non-financial institutions.

## 2. VOLUNTARY CARBON OFFSETTING

In 2023, MAG initiated a voluntary carbon offset programme for our passengers which allows them to offset their own carbon emissions. Throughout the year, passengers purchased carbon credits to offset approximately 1,640 tonnes of CO<sub>2</sub> emissions.



For more details on the passenger carbon offset programme and the MAG CHOOOSE Portal, please refer to the Customer Experience section of this report on page 49

We have partnered with CHOOOSE, a platform that facilitates the selection of verified climate projects for the carbon offset programme. These projects include:

### FUSUI BIOMASS POWER PLANT IN FANGCHENGANG CITY, CHINA



This project entails a newly constructed biomass power plant with a 40MW capacity. It harnesses sugar cane bagasse and other agricultural residues as fuel to generate clean electricity, reducing reliance on fossil fuels. This power contributes to the local grid, ultimately displacing energy traditionally generated by coal-fired power plants and thereby curbing CO<sub>2</sub> emissions.

### RIMBA RAYA BIODIVERSITY RESERVE PROJECT IN KALIMANTAN, INDONESIA

Located in Central Kalimantan, the Rimba Raya area, bordering the Tanjung Puting National Park, was once at risk of being converted into palm oil plantations. The project now preserves around 64,000 hectares of tropical peat swamp forest, playing a vital role in reducing Indonesia's emissions by maintaining the forest's carbon storage capabilities. It serves as a protective buffer for the national park, conserving biodiversity and contributing to environmental sustainability, in addition to contributing towards community development.

### ALISIOS COSTA RICA GROUPED WIND PROJECT, COSTA RICA



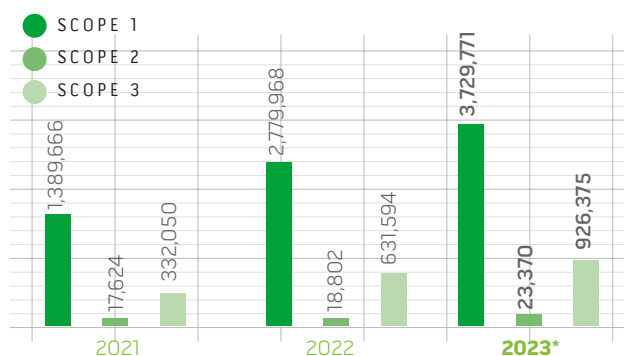
The Alisios Costa Rica Grouped Wind Project is a visionary project to produce electricity through the harnessing of wind energy, contributing to the renewable energy portfolio of Costa Rica's national grid.

Alisios Holdings S.A. is at the helm of this initiative, working in unison with the wind power plants it wholly owns and various other entities within the host country's energy sector to encourage the growth of new power-generating facilities under this collective project.

### KATINGAN PEATLAND RESTORATION AND CONSERVATION PROJECT

The Katingan Restoration and Conservation Project protects and restores 149,800 hectares of peatland ecosystems, to offer local communities sustainable sources of income, and to tackle global climate change.

## OUR GROUP'S GHG EMISSIONS



\*Key notes from 2023 GHG emissions data

Scope 3 data comprises emissions from 8 relevant categories. This is an addition of two categories from the previous reporting year.

There has been enhancements to/expansion of data for category 1, 5, and 6

Emissions from Category 3 account for more than 80% of total scope 3 emissions.

Some minor adjustments have been made between scope 2 emissions and scope 3 category 8 emissions to better align with the operational control criteria definition

Jet fuel consumption is the primary contributor to MAG's emissions, accounting for nearly 80% of our total Scope 1, 2, and 3 emissions. This underscores the importance of focusing our decarbonisation efforts in this area. As we approach our pre-pandemic operational levels, we expect an increase in our absolute Scope 1 emissions. The bulk of our remaining Scope 1 emissions comes from ground services equipment and vehicles at airport facilities.

Furthermore, approximately 70% of the Group's total Scope 2 emissions is attributed to our cargo and hangar facilities at KUL and SZB.

To address this, we are actively pursuing a series of strategic decarbonisation initiatives based on the four main pillars, aimed at incorporating more efficient aircraft technologies and improving operational efficiencies.

Since 2020, while our total Scope 1 emissions have increased, the rate of this increase has slowed as operations began to stabilise at pre-COVID levels. From 2021 to 2022, emissions doubled, but the growth rate reduced to 34% from 2022 to 2023. Notably, the absolute emissions in 2023 were still below the levels seen in 2019.









In addition to Scope 1 emissions, we've also seen a rise in Scope 2 emissions over the past year. This increase has been partly due to a worsening grid emission factor and the inclusion of some smaller facilities not previously accounted for. The main driver, however, has been the stabilisation of operations and the shift from remote to hybrid work models, which has accompanied an increase in our workforce.

To combat these trends, we are committed to identifying and implementing additional energy efficiency measures. We are also exploring opportunities for renewable energy installations, with a focus on solar power, to decrease our dependence on traditional energy sources and bolster our sustainability initiatives.

Our Scope 3 emissions, which form the second largest component of our overall emissions, are largely driven by Category 3 – fuel and energy-related emissions. This category is significantly influenced by the extensive fuel consumption of our aircraft. Therefore, initiatives aimed at reducing jet fuel consumption are directly impactful on reducing our Category 3 emissions. Additionally, significant contributions to our total Scope 3 emissions come from Category 1 (purchased goods and services) and Category 7 (employee commute), which together account for nearly 97% of our total Scope 3 emissions.

We are committed to continually enhancing the accuracy and quality of our data, especially concerning Scope 3 emissions. This year, we have expanded our reporting to include emissions from eight relevant categories (categories 1-8), an increase from the previous reporting period where only six categories were reported. Categories 2 and 4 have been included in our 2023 emissions reporting for the first time. Notably, we have made significant improvements in our data collection processes for Categories 1, 5, and 6, demonstrating our ongoing commitment to thorough and comprehensive emissions reporting.

### MAG Scope 1 and 2 Emissions by Business Entity (tCO<sub>2</sub>)

	Scope 1	Scope 2
	3,095,344	2,428
	141,975	956
	37,451	191
	258,185	-
	4,688	1,000
	191,507	9,018
	-	2,508
	620	7,268

Refer ESG performance table for MAG Scope 1 and 2 Emissions by Business Entity (tCO<sub>2</sub>) from 2021 to 2022

MAB's Scope 1 emissions, predominantly arising from jet fuel consumption, represent more than 80% of the total Group's combined Scope 1 and 2 emissions. Firefly's Scope 1 emission has a significant increase in 2023 in comparison to 2021 emission figures due to improvement in business activity and commencement of B737-800 operations. Additionally, around 70% of the Group's total Scope 2 emissions are linked to our cargo and hangar facilities at Kuala Lumpur (KUL) and Subang (SZB) airports.

Despite the challenges associated with increasing emissions, we are committed to ongoing improvement in our decarbonisation efforts. Through innovation and collaboration within the aviation industry, we aim to enhance our environmental performance and achieve our decarbonisation goals.



# ENERGY MANAGEMENT

GRI 3-3, 302-1, 302-4, 302-5

IATA E9

## TOTAL ANNUAL ENERGY CONSUMPTION (kWh)

Business Entity	Facility	2021	2022	2023
MAB	Admin Building SSZ Flight Management Building (FMB) MAB PEN	1,078,500 822,016 71,756	1,060,362 1,103,420 65,392	994,844 938,376 82,260
FY	Firefly Skypark Firefly Citta Mall Domestic stations (AOR, JHB, KBR, LGK, PEN, TGG)	165,637 416,413 -	182,887 592,297 -	63,031 1,095,681 102,194
MABES	Hangar KUL Firefly Hangar 01	6,486,202 1,341,999	7,869,947 1,648,990	7,535,687 2,052,658
MW	MASwings SABAH MASwings SARAWAK	46,033 51,271	280,215 78,263	414,291 76,608
MK	MASKargo KUL MASKargo PEN	11,696,500 1,320,599	10,652,525 1,191,943	10,633,187 1,264,166
MABA	MAB Academy Kelana Jaya	2,594,339	3,330,923	3,309,116

\*Kindly refer to the MAG GHG emission performance segment of the MAG's Decarbonisation Ambition section (page 24) for more details on Scope 2 GHG emissions from energy consumption

In line with Malaysia's Responsible Transition (RT) Pathway 2050, which envisions a shift from fossil fuels to a low-carbon energy system under the NETR framework, building energy efficiency has emerged as an important initiative.

In 2023, MAG reported an annual energy consumption of 30,623,017 kWh. This marked a 4% increase from the previous year, attributed to heightened business activities in the post-pandemic period and the establishment of MAG Catering Operations in the South Support Zone (SSZ). Notably, the Hangar and MASKargo in the South Support Zone are the primary consumers, accounting for roughly 65-70% of MAG's energy demand. Reducing energy usage in these two facilities is vital for MAG's broader energy reduction goals.

Energy-saving measures implemented in 2023:

- Replaced a total of **4,565 light-bulbs** across MAG facilities in SSZ with LED light bulbs
- Upcoming new simulator building at SSZ (to be constructed in 2024) is designed to be a green building certified facility

Our on-site solar PV panels generated 6,531 tonnes of renewable energy (RE) in 2023, contributing 17% towards the Group's total energy consumption.

In late 2023, Malaysia passed the Energy Efficiency and Conservation Bill 2023 (EECA Bill) as part of its energy transition strategy towards achieving net-zero emissions by 2050. The bill targets large energy usage facilities (those consuming > 6,000 MWh annually) and large office spaces (> 8,000 m<sup>2</sup>). In response, MAG plans to prepare for the impending EECA implementation by digitising energy consumption data for our facilities, conducting energy audits to identify energy savings measures (ESM) for high-consumption facilities, and performing building conditioning audits for older buildings to address potential cooling leakages caused by building envelope and facility. Moving forward, MAG will monitor building and facility energy consumption based on Building Energy Index (BEI) metrics to evaluate the energy efficiency of our facilities operations.

## TOTAL ANNUAL ON-SITE RE GENERATED (kWh)

Business Entity	2021	2022	2023
MAG	6,987,835	6,467,636	6,531,454



# RESPONSIBLE WASTE AND MATERIAL RESOURCE MANAGEMENT

GRI 3-3, 301 -3, 306-2, 306-4

MAG actively implement waste management strategy that prioritises waste reduction, recycling, and responsible disposal throughout our operations. We foster recycling initiatives, and adhere to environmental regulations, MAG look to significantly mitigate our environmental footprint and advance sustainability efforts.



## GROUND WASTE MANAGEMENT

At MAG, we’re dedicated to minimising our environmental impact through waste management strategies. We prioritise waste reduction as a key component of our sustainability mission, emphasising the principles of reduce, reuse, and recycle.

Despite returning to pre-COVID operations and experiencing a rise in waste generation, we have actively pinpointed areas for waste minimisation. Through targeted measures to optimise resource usage, we’ve successfully slowed the growth of waste generation and even achieved reductions in 2023. As we expand, we’re committed to further progress in waste reduction.

Our recycling programme is central to our waste management approach, diverting recyclable materials efficiently. Aligned with our waste reduction goals, this programme has significantly decreased waste sent to landfills. Looking ahead, we’re committed to exploring innovative methods to reduce waste.

Our waste management efforts are through key initiatives, including the implementation of waste segregation protocols across all our facilities. We’re dedicated to streamlining recycling efforts and maximising resource recovery. Through ongoing monitoring and evaluation of our waste management practices, we aim to identify areas for improvement and foster continuous innovation.

IN-FLIGHT WASTE MANAGEMENT

Building upon our plastic reduction initiative from 2022, MAG has transitioned from plastic materials, such as cutlery packs and dental kits, to recyclable, reusable, and biodegradable alternatives. This shift aims to decrease the reliance on single-use plastics (SUP) in our in-flight operations, thereby reducing the volume of plastic waste.

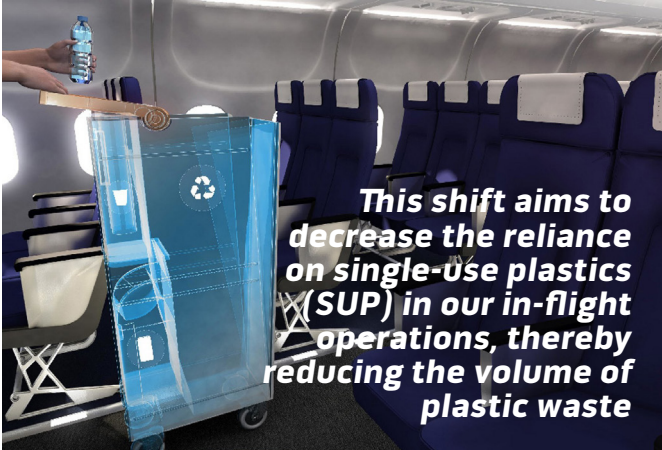
Moving forward, we will continue to replace in-flight plastic materials. The Group has planned to replace up to four (4) types of on-board products including plastic round bowl, plastic plate cover, swizzle stick and amenity kit cover with biodegradable materials or reusable product, as part of our ongoing efforts to reduce in-flight plastic waste.

Total number of disposable cutlery packs (wooden based) deployed is

**4,480,700 packs**

Total number of biodegradable dental kits deployed is

**23,000 sets**



SCHEDULED WASTE MANAGEMENT

MAG has implemented a scheduled waste management strategy aimed at enhancing environmental protection and reducing waste management costs. The strategy involves a multi-faceted approach to handle different types of waste produced across MAG operations, emphasising the following key initiatives:

**Awareness and Training:** We conduct monthly awareness briefings for all staff, aimed at improving knowledge and practices around handling scheduled waste responsibly.

**Waste Segregation:** By segregating domestic waste from scheduled waste right at the source, MAG has effectively reduced the overall costs associated with waste management. This segregation helps in identifying the specific handling and disposal requirements for different types of waste, thereby enhancing recycling and proper disposal measures.

Total Scheduled Waste (SW) Generated in 2023 (tonnes)	
SW109 (Used fluorescent lamp)	6.2
SW204 (Sludge)	10.4
SW206 (Spent inorganic acid)	11.3
SW305 (Used engine oil)	64.3
SW312 (Oil interceptor sludge)	1.4
SW409 (Used contaminated container)	16.4
SW410R (Used rags/ paper)	77.8
SW417 (Waste - ink, paint pigments lacquer, dye or vanish)	21.4
SW411 (Used carbon/sand)	10.0
SW401 (Aqueous alkaline solution)	0.9
Total SW Produced	<b>219.3 tonnes</b>

## UPCYCLING

### Environmental Awareness

The Group Sustainability Office (GSO) encourages Business Entities and Departments to engage in the upcycling programme by providing initial seed funding for upcycling initiatives. Participation in upcycling activities not only enhances awareness about waste reduction through circularity principles but also showcases creativity and innovation in designing products from waste materials.

### Waste Reduction

Business Entities and Departments identify waste materials from their operations that have potential for upcycling. The list of identified materials includes old uniforms, expired life vests, magazines, leather covers, and bags.

### Social Impact Collaborations

The GSO actively seeks opportunities to develop collaborative upcycling programmes with governmental and non-governmental organisations, various associations, social entrepreneurs aimed at improving the socioeconomic wellbeing of marginalised communities.

The GSO, MAB Engineering Services (MABES) and the Women at MAG association (W@M) have established the Scrap to Fab project with Komuniti Tukang Jahit (KTJ) and the Malaysian Prison Department. This initiative turns our operational waste into stylish new products designed for practical use and longevity, while generating income for the communities involved.

In 2023, 1,100 end-of-cycle life vests and 250 crew uniforms were upcycled, diverting this waste away from landfills. In 2024, following the success of the initiative,

we expect to produce more products through the upcycling programme and involve a wider range of business entities and departments.

To centralise the process for this and future initiatives, we plan to establish a central inventory for storing upcycling material at the MAB Academy Building.

Our ADS Club is embarking on Project Reimagined, an initiative aimed at transforming used materials into valuable products. The proceeds of sales will fund the Club's staff welfare programme. Several sample products have been produced as part of the research and development stage.



**1,100** end-of-cycle life vests were upcycled in 2023



**250** crew uniforms were upcycled, diverting this waste away from landfills



# NOISE EXPOSURE MONITORING

GRI 3-3  
IATA E8

Occupational noise-related hearing disorders (ONRHD) are among the most commonly reported occupational diseases in the industry. The effects of ONRHD are cumulative and irreversible, posing a serious risk to our workforce.

Since 2020, MAG has implemented a Noise Exposure Monitoring (NEM) programme to protect our people from the potential health hazards associated with high noise levels in aviation environments. This programme is an integral component of MAG's Occupational Safety and Health strategy, aligning with the Noise Exposure Regulations 2019. The continuous monitoring of workplace noise levels under the NEM has resulted in increased awareness of Noise Induced Hearing Loss (NIHL) among staff, putting us on the right path towards reducing the number of cases in the long term.

## KEY COMPONENTS OF MAG'S NEM PROGRAMME

### Aircraft Noise Certification:

MAG's fleet undergoes rigorous noise certification to comply with ICAO noise standards. By 2023, 91.4% of the fleet met ICAO Chapter 4 noise criteria, which represent more stringent noise reduction requirements compared to Chapter 14, adhered to by 8.6% of the fleet.

### Workplace Noise Assessments:

MAG conducts thorough noise risk assessments at various stations and for new equipment such as the Boeing 737-8. These assessments help identify areas requiring noise control measures, warning signage, and personal hearing protection for employees exposed to high noise levels.

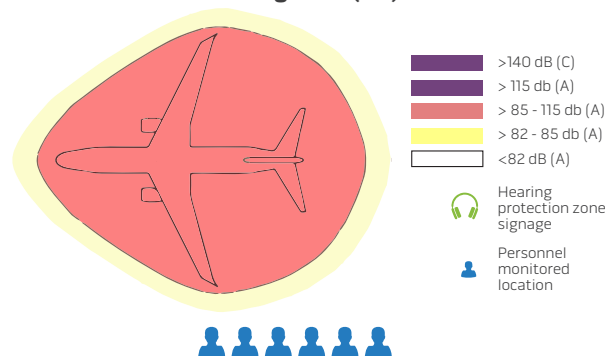
An additional noise risk assessment for MAG's Kuala Lumpur Station was conducted on 23 January 2024, for area mapping and 24 January, 2024, for personal assessment in accordance with the Occupational Safety and Health (Noise Exposure) Regulations 2019 – Regulation 4 (Noise Risk Assessment). The assessment aimed to confirm noise exposure levels for employees based on the Noise Hazard Identification Checklist prepared prior to the assessment date. This assessment included the evaluation of new equipment such as the Boeing 737-8 and four domestic stations in Malaysia (JHB, AOR, LGK, and LHD).

### Hearing Conservation Programme:

Under the Hearing Conservation Programme, MAG identifies excessive noise areas, assesses the noise risk, and implements reduction strategies. Essential elements of the programme include hearing protection, information, instruction, training, and regular audiometric testing to monitor the hearing acuity of exposed employees.

For 2024, the NEM plans to focus on five specific stations (TWU, SDK, SBW, BTU, SZB), aiming to cover 80% of all MAG stations by the end of the year. This expansion signifies MAG's commitment to continuous improvement in monitoring and mitigating noise exposure across its operations. Through these comprehensive measures, MAG strives to enhance workplace safety by effectively managing noise exposure, thereby reducing the risk of noise-induced hearing disorders among our employees.

### B737-8 Noise Monitoring level (dB)





# ENVIRONMENTAL MANAGEMENT

GRI 3-3

MAG supports to environmental conservation, implementing initiatives aimed at restoring ecosystems and promoting sustainability. Our efforts encompass a variety of programmes such as beach cleanups, mangrove tree planting, and educational outreach, which engage and mobilise our employees while also directly addressing environmental issues.

Additionally, MAG's engagement in bird strike prevention, in collaboration with airport authorities, highlights our proactive approach to minimising wildlife hazards that can affect both aircraft safety and animal populations. These comprehensive environmental initiatives are part of MAG's broader commitment to sustainability, emphasising practical actions that contribute to ecosystem balance and biodiversity preservation.

Key activities in 2023 included seven environmental conservation and restoration programmes across Malaysia, which contributed to reducing marine pollution and restoring wildlife habitats. Specific events like the clean-ups at Pantai Gorongon Putatan, Pantai Tiara, and Sungai Melinau Mulu, as well as mangrove tree planting at Le'maas Forest Reserve in Kota Belud, illustrate MAG's active role in preserving the natural environment. These activities not only help mitigate environmental impacts but also foster community

involvement and awareness among employees about the importance of conservation efforts.

## MANGROVE TREE PLANTING INITIATIVE FOR WORLD ENVIRONMENT DAY 2023

On World Environment Day, the Lema'as Forest Reserve in Kota Kinabalu, Sabah, Malaysia, served as the venue for a significant Mangrove Tree Planting Project. This event was a joint effort between MAG and the KK Wetlands Society. A dedicated team of 66 MAG volunteers contributed to the ecological restoration of the area by planting 126 mangrove saplings, including species such as *Rhizophora apiculata* and *Rhizophora mucronata*.

Beyond this initiative, the spirit of environmental conservation extended to additional locations. MAG volunteers also engaged in tree planting activities at the BKI Administration Building and Rosary Hill at St. Peter Claver's Church in Ranau, adding 21 trees to these areas. These efforts underscore MAG's broader commitment to enhancing biodiversity and fostering a healthier environment through practical, hands-on conservation activities.

## BEACH CLEANUPS

In a clear effort towards environmental sustainability, the MAB Corporate Safety Oversight (CSO) and MAG Group Safety & Security (GSS) joined forces for a beach cleaning event on 15 December, 2023, at Bagan Lalang Beach. This initiative reflects our dedication to hands-on environmental conservation efforts.

Continuing this momentum, the MAB Flight Operations Department hosted another beach cleaning event the following day, on 16 December, 2023, at Pantai Morib in Kuala Langat. This event was notable for its wide-ranging participation, drawing involvement from various levels of the organisation. Distinguished attendees included the Chief Operating Officer, the Director of Flight Operations, and members from Cabin Crew, Human Capital, Flight Operations Training, Business Integrity, Staff Services, Operations Control Centre, Crew Deployment Centre, as well as family members of MAB staff. These activities not only fostered team cohesion but also underscored the collective commitment to supporting environmental causes through direct action.

### Environmental conservation initiatives and programmes:

1. Beach cleaning at Pantai Gorongon Putatan jointly organised by MAG & Green Buddy
2. Mangrove tree planting at Le'maas Forest Reserve, Kota Belud
3. Beach cleaning at Pantai Tiara, F.T. Labuan
4. River cleaning at Sungai Melinau Mulu
5. Beach cleaning during Tanjung Aru Beach Festival
6. Beach cleaning at Bagan Lalang
7. Beach cleaning at Pantai Morib, Kuala Langat



# BIRD-STRIKE MONITORING AND REDUCTION

Bird strikes pose several risks to airlines, primarily related to safety and operational efficiency. There are some indirect environmental concerns associated with bird strikes. Aircraft damage can cause delays or cancellations, leading to increased energy consumption from rescheduled or diverted flights. Some bird species may be endangered or protected. If the aircraft's engines ingest birds or if parts are damaged and require replacement, it can lead to the release of hazardous materials from engine oils, hydraulic fluids, or other chemicals.

## TOTAL ANNUAL BIRD-STRIKES

Metrics	2021	2022	2023
Total number of bird strikes recorded	110	311	347
Total number of flights	7,949	15,203	18,634

### KUL-MAHB MITIGATION ACTION

At Kuala Lumpur International Airport (KUL), Malaysia Airports Holdings Berhad (MAHB) has implemented several mitigation actions to address bird strike risks:

- Conducted bird profiling at Langkawi (LGK) and Alor Setar (AOR) stations to better understand local bird populations and behaviours.
- Utilised two units of propane cannons, one for each terminal (Terminal 1 and Terminal 2), to deter birds from the airport vicinity.
- Increased bird dispersal activities from twice to three times daily to minimise the presence of birds in critical areas.
- Conducted risk-based analysis on birds' flocking behaviour, body density, and species composition to inform targeted mitigation strategies.
- Benchmarked against local and regional operators, such as Malaysia Airports Sdn Bhd (MASB) and Changi Airport, to learn from best practices and improve bird strike prevention measures.
- Implemented daily grass cutting and tree pruning adjacent to the runway to reduce bird habitats and nesting sites, thereby decreasing the likelihood of bird strikes.

### LDU STATION BIRD STRIKE/PRESENCE MITIGATION PLAN FOR Q2 2024

- Installation of bird nets near the Precision Approach Path Indicator (PAPI) for Runway 11, completed on 31 January, 2024, to prevent birds from accessing critical flight paths.
- Continuous efforts to eliminate water ponding in the striped areas, which can attract birds, thus reducing their presence near the runway.
- Cutting down Tembusu trees at the airport known to harbour bird nests, minimising potential nesting sites and decreasing bird activity in the vicinity
- Trimming and pruning trees in Fajar Town, located opposite the airport, to further reduce nesting opportunities for birds. Estimated completion date: 30 May, 2024.
- Installation of liquid spray or gel with unpleasant scent and taste to birds as another repellent measure. Estimated completion date: 30 June, 2024.

# SOCIAL

## 2023 Social Performance Highlights



**34%**  
female  
participation  
in MAG's  
workforce



Lost time injury  
frequency rate  
(LTIFR) is  
**0.77**



Total number of  
upcycled products  
produced through  
community  
partnership is  
**826 units**

Empowering Employees and Community	<b>41</b>
Customer Experience	<b>51</b>
Digitalisation	<b>53</b>
Community Development	<b>54</b>





# EMPOWERING EMPLOYEES AND COMMUNITY

GRI 3-3, 401-1, 401-2, 401-3, 403-1, 403-2, 403-3, 403-4, 403-5, 403-6, 403-7, 403-9, 404-1, 404-2, 405-1  
IATA S.2, S.3, S.4, G.1

MAG’s commitment to social responsibility is reflected in our various initiatives designed to have a positive impact on communities and employees. These initiatives encompass employee welfare, community engagement, diversity, and inclusion, which all contribute to nurturing a culture of resilience and excellence.

Through these focused efforts, MAG not only enhances our corporate social responsibility profile but also enriches the lives of its employees and the communities in which we operate, fostering a positive impact that extends beyond direct business interests.

## HEALTH AND SAFETY

In our pursuit of sustainable operations, MAG prioritises the health and safety of our employees and stakeholders. With a holistic view approach rooted in proactive risk management, continuous improvement, and adherence to safety standards and best practices, we aim to set a benchmark for excellence in occupational health and safety.

 <b>VISION</b> To be the Premier Asia Pacific Airlines with Safety and Security at the forefront	 <b>MISSION</b> To ensure safe and secure operations	 <b>GOALS</b> Zero accidents and 100% compliance	 <b>SAFETY IN 2030</b> MAG to be in the top 10 safest airlines in the world	
<b>SAFETY DOMAINS</b>				
 Future of Flying	 Safety Culture	 Safety Leadership	 Workforce Health Protection	 Pandemic Preparedness

## GROUP SAFETY AND SECURITY DEPARTMENT

In 2023, MAG significantly improved of our safety framework with the establishment of the Group Safety and Security Department. This department has taken on the crucial role of overseeing safety operations across the entire Group.

The department's responsibilities include:

- **Emergency Management:** Developing and maintaining robust emergency response protocols.
- **Safety Management System (SMS) Documentation:** Keeping accurate and detailed safety records that are essential for effective safety management.
- **Safety Data Management:** Collecting and analysing safety-related data to identify trends and potential risk areas.
- **Flight Data Analysis:** Examining flight data to improve flight safety
- **Safety Investigation and Training:** Conducting thorough investigations of safety incidents and providing targeted training to address identified issues.
- **Compliance and Quality Assurance:** Ensuring adherence to safety regulations and maintaining high-quality standards.
- **Safety Risk Analysis:** Evaluating potential risks and implementing measures to mitigate them.
- **Occupational Safety & Health:** Protecting the well being of employees by maintaining a safe work environment.
- **Radiation Safety:** Managing radiation exposure risks to ensure safety.



Metrics	2021	2022	2023
Work-related lost time injury (LTI)	51	71	37
DOSH Reportable Cases	31	32	28
Lost time injury frequency rate (LTIFR)*	1.18	1.62	0.77
Main types of work-related injury	Manual Handling Injury	Manual Handling Injury	Slip, Trip & Fall

\*LTIFR: (Loss time injury + Total working man hours) x (1,000,000)

## MAG'S SAFETY STRATEGY (2023 - 2030)

The Group's Safety Strategy for the years 2023 - 2030 outlines our strategic initiatives, goals, key value drivers, and challenges.

### 2023 - 2030

#### SAFETY STRATEGIC INITIATIVES

Domain	Strategic Initiatives	Actions 2024
<b>Future of Flying</b>	<ul style="list-style-type: none"> <li>Anticipating emerging and evolving risks</li> <li>Simplifying a complex system</li> </ul>	<ul style="list-style-type: none"> <li>Post COVID-19 Operational Risks</li> <li>Readiness for 737-8 &amp; A330neo</li> <li>Safety tools – Safety at Our Fingertip</li> </ul>
<b>Safety Culture</b>	<ul style="list-style-type: none"> <li>Behaviour enhancement towards Sustainable Generative Safety Culture</li> </ul>	<ul style="list-style-type: none"> <li>Safety Culture Blueprint</li> <li>Engage, educate, enable, empower and embrace</li> </ul>
<b>Aviation Safety Leader</b>	<ul style="list-style-type: none"> <li>Aviation Safety Leader at Regional and Global Level</li> </ul>	<ul style="list-style-type: none"> <li>Safety Training Programmes with MABA</li> <li>IOSA Level Auditor Pool Certification</li> <li>Representation at various safety forums</li> </ul>
<b>Workforce Health Protection</b>	<ul style="list-style-type: none"> <li>Physical Wellness</li> <li>Mental Wellness</li> </ul>	<ul style="list-style-type: none"> <li>Road safety</li> <li>Advocacy of physical and mental wellness</li> <li>OSH and Radiation Safety</li> </ul>
<b>Pandemic Preparedness</b>	<ul style="list-style-type: none"> <li>Future pandemic preparedness through collaboration and standardisation</li> </ul>	<ul style="list-style-type: none"> <li>Lessons Learned</li> <li>Networking - MOH, WHO, ICAO, IATA</li> <li>Stockpiling and health technology</li> </ul>

#### END STATE SUCCESS MEASURES:



Top 5 Asia Pacific, Top 10  
World's Best Airlines



Generative Safety  
Culture



Aviation Safety Centre  
of Excellence



100% Resilient  
Workforce



Pandemic  
Ready MAG

#### KEY VALUE DRIVERS

Safety Leadership	Safety Expertise	Safety Tools	Safety Network	Safety Culture Elements
<ul style="list-style-type: none"> <li>Very high commitment to safety at all levels</li> <li>Safety First Business Principles</li> <li>Monthly Safety Action Group</li> <li>Quarterly Safety Board</li> <li>Townhall updates</li> </ul>	58 highly trained Safety, QA experts in MAG <ul style="list-style-type: none"> <li>Safety data management</li> <li>Safety risk management</li> <li>Flight data analysis</li> <li>Annex 13 Safety investigators</li> <li>QA Compliance auditors</li> </ul>	Electronic Safety documentation system used by 23 BUs covering 15,000 documents  Corporate Safety information System accessible to all personnel for safety reporting	<ul style="list-style-type: none"> <li>Participate in IATA Safety Data Exchange</li> <li>Member of AAPA/oneWorld Safety</li> <li>Member of IATA Medical Advisory</li> <li>Group IOSA/ISAGO certified</li> </ul>	<ul style="list-style-type: none"> <li>Reporting Culture – Avg 6,600 hazard reports/year</li> <li>Just culture – balance of error and accountability</li> <li>Informed culture – evidence based</li> <li>Learning culture – lessons learned and continuous improvement</li> <li>Flexible – MOC and adapt</li> </ul>
<b>Safety (and Health) Challenges</b>	Automation v Human – Cockpit and Crew Resource Management challenges Safety Behavior Enhancement – Change takes time and buy in Human Resource – Push/Pull, increased workload Robotics and Technology – investment costs and catch-up game			Sustainable Lifestyle and Behavior Change – Behavior modification a big challenge Lost Time Injury – areas of Musculo Skeletal Disorder Future pandemic – Bureaucratic and poor global leadership Stockpiling – balance of readiness versus wastage





## MENTAL HEALTH AND WELLBEING

The MHeart programme is a comprehensive employee assistance initiative designed to support the emotional and mental well-being of our people. The programme includes the Naluri application, webinars in English and Bahasa Malaysia, a careline, consultation sessions, and workshops.

Key components of the MHeart programme include registration and active engagement with the Naluri app, which offers support services such as consultations, careline support, webinars, and workshops. The programme's impact is evident from the utilisation rates and outcomes:

**Naluri App Engagement:** A significant number of employees have registered for the Naluri app, utilising its features to support their mental health and emotional well-being.

**Consultation Utilisation:** Over 203 hours of consultations have been utilised, underscoring the active participation of employees in seeking support when needed.

**Mental Health Outcomes:** The programme has yielded positive results, with a majority of employees who were initially at risk and were re-assessed improving their mental health outcomes.

This initiative is aligned with MAG's overall strategy to foster a resilient and supported workforce capable of facing the demands of the aviation industry. Through the MHeart programme, MAG is demonstrating its dedication to not just the operational and business aspects of its enterprise but also to the human element, ensuring its employees have access to the resources and support they need to thrive both professionally and personally.

### MHEART'S IMPACT IS EVIDENT FROM THE UTILISATION RATES AND OUTCOMES:



**8,748**  
of employees  
registered for  
Naluri



**203**  
of hours of  
consultation  
utilised

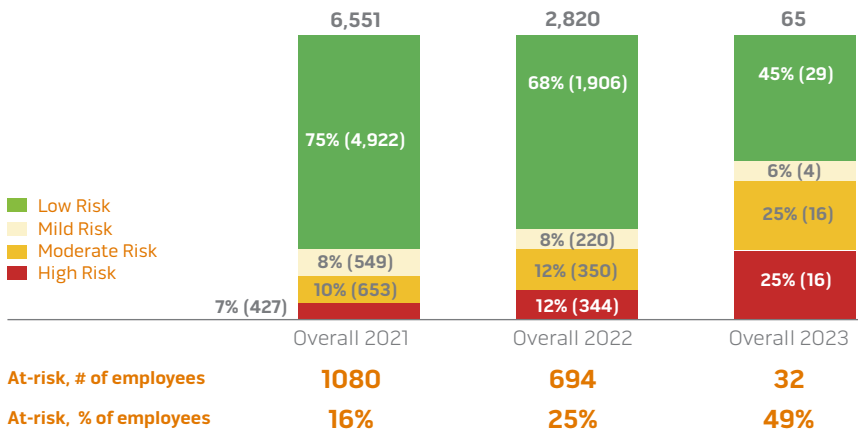






To understand where our employees were in terms of their mental health, we established a baseline from the data collected in our 2022 and 2023 DASS-21 survey of a small sample group of employees, in which they reported a decline in their emotional wellbeing. From this baseline, we measured the outcomes of the MHeart programme.

Year on Year breakdown of overall DASS-21 risk level from 2021 - 2023



The snapshot from 2020 to 2023 below reveals the reach of DASS-21 baseline survey and MHeart programme.

**HEALTH BASELINE**

**25%**  
of employees  
at risk (694),  
in 2022

**49%**  
of employees at risk (32),  
in 2023

~50% of MAB (15) and ~64% of executive (9) and middle management levels (7)

**OUTCOMES**

**55%**  
of employees who  
were at risk have  
achieved mental  
health outcomes<sup>4</sup>

**4.7**  
out of 5 average  
audience ratings  
for Naluri CARE  
training

**12%**  
improvement  
in overall ORS<sup>5</sup>  
scores

**9**  
out of 10  
Average  
SRS<sup>5</sup> score

<sup>1</sup> Includes Naluri app registration, consultation, careline, webinars and workshops

<sup>2</sup> Based on estimated total company size of 10,000 employees

<sup>3</sup> Based on 2820 employees who completed DASS-21 in 2022, and 65 employees who completed DASS-21 in 2023

<sup>4</sup> Includes members who were at risk and have undergone a reassessment of the DASS (425 employees) from 2020 -2023

<sup>5</sup> ORS is Outcome Rating Scale; SRS is Session Rating Scale used for counselling/consultation services – note that these are only implemented in May 2023

TRAINING AND DEVELOPMENT

We are as good as our people. MAG places strong emphasis on training and development, recognising it as a crucial component of its strategy to maintain high standards of professionalism and service quality. This focus is part of MAG's broader commitment to fostering a skilled and knowledgeable workforce, capable of adapting to the fast-paced changes in the aviation industry.

When planning a training programme, we consider the employees' specific needs and goals in addition to addressing the gaps within the organisation. Our employees have the opportunity to participate in non-mandatory programmes as well.

Our aim is to create a workplace where our employees can develop their skills and build their careers with us. The Learning & Development pipeline is a programme that guides specific talent groups along a career path at MAG.

In 2024, we will roll out online ESG training modules to enhance MAG employees' understanding of the fundamentals of ESG and its specific applications in the aviation sector.



Average training hours per employee in 2023

30 hours



# EMPOWERING DIVERSITY

## BOOSTING FEMALE REPRESENTATION

In 2023, MAG achieved a milestone in gender diversity, with women constituting 34% of our workforce. This surpasses the International Air Transport Association's (IATA) "25by2025" initiative, which sets a target of increasing female representation in the aviation industry by 25%, or achieving a minimum of 25% by 2025. Additionally, the Group has made remarkable strides in advancing women into leadership roles. Women now hold half of the senior management positions and 44% of middle management roles, demonstrating our strong commitment to gender inclusivity and the empowerment of women in key decision-making capacities.

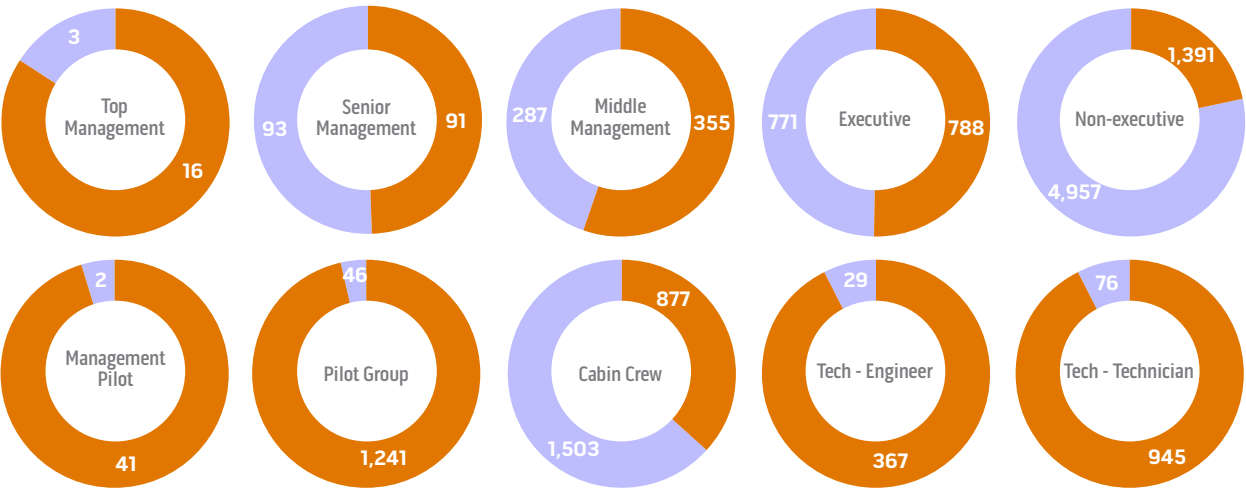
MAG is equally committed to boosting female representation in roles traditionally dominated by men, such as pilots and engineers. Significant progress has been made: the percentage of female management pilots has increased to 5% in 2023. Similarly, the proportion of female engineers has increased from 6% to 8%, and female technicians from 5% to 8%. These advancements highlight MAG's ongoing efforts to create a more balanced and inclusive workforce.

Active educational outreach programmes targeting school leavers and tertiary education students are essential to combat sector stigmatisation, particularly as there is a notably low number of female applicants for cadet pilot and engineering trainee positions. Additionally, it is crucial to understand and address the barriers that women face in technical roles, such as limited opportunities for growth, gender pay disparities, and the lack of inclusivity in the working environment, in order to help retain female employees.



### 2023 MAG Employee Gender Diversity Performance Data

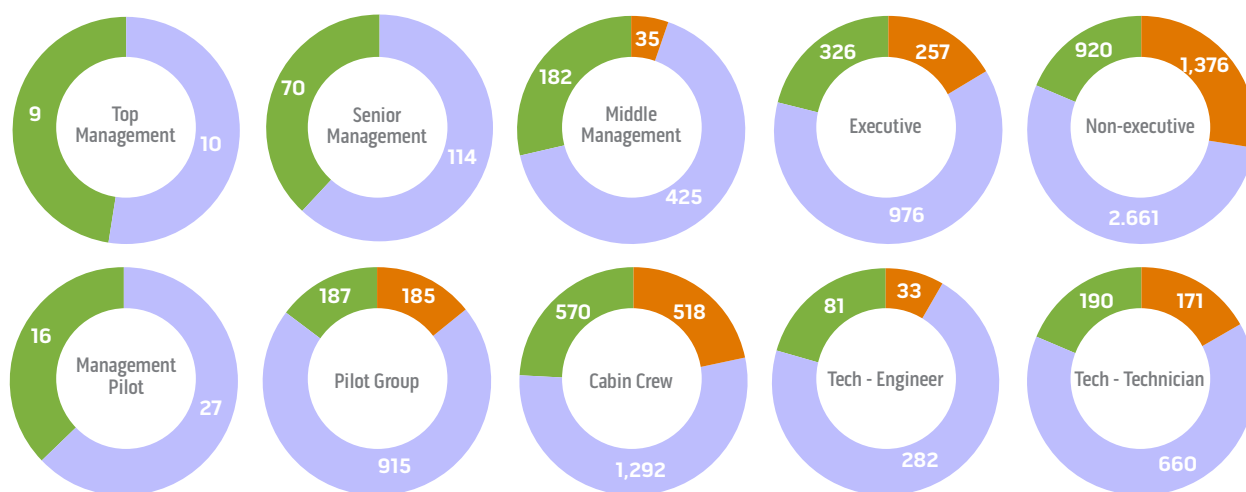
- Male
- Female



For data year 2021-2022, please refer at Performance Data.

## 2023 Diversity in Age Groups

● <30 ● 30-50 ● >50



For data year 2021-2022, please refer at Performance Data.

The composition of MAG's workforce primarily consists of employees aged between 30 and 50, who make up 59% of our total workforce. Meanwhile, employees under the age of 30 and those above the age of 50 represent 21% and 20% of our workforce, respectively.

In 2022 and 2023, the percentage of female new hires at MAG was 45%, showing an increase from the 40% hiring rate in 2021.

Regarding the age distribution of new hires, 63% were under 30 years of age, 34% were between 30 and 50 years old, and 3% were above the age of 50.

In 2023, MAG reported a male employee turnover rate of 64%, while the turnover rate for female employees was 34%.

By age group, the highest turnover rate was among employees aged 30 to 50, at 44%. This was followed by a 38% turnover rate for employees under 30 years of age, and an 18% turnover rate for employees above the age of 50.

## New hiring

	2021	2022	2023
Male	95	644	<b>1,099</b>
Female	65	536	<b>895</b>
Age <30	102	890	<b>1,264</b>
Age 30-50	57	285	<b>679</b>
Age 50>	1	5	<b>51</b>

## Employee turn-over

	2021	2022	2023
Male	835	590	<b>657</b>
Female	512	407	<b>368</b>
Age <30	436	418	<b>392</b>
Age 30-50	475	431	<b>454</b>
Age 50>	436	148	<b>179</b>



## W@M

In 2023, the Women at MAG (W@M) community continued to grow, with 650 female employees registered as members of the association.

W@M organised programmes throughout Cancer Awareness Month, which included a forum on cancer awareness, free cancer screenings, talks on breast cancer for women and colorectal cancer for men, and a video cooking competition to promote healthy eating habits.



Employee Category	Members
Cabin Crew	106
Executive	225
Management Pilot	5
Middle Management	98
Non-Executive	104
Pilot Group	8
Senior Management	49
Tech Group - Engineer	12
Tech Group - Technician	41
Top Management	2
	<b>650</b>

In celebration of International Women's Day, in line with the theme 'Embrace Equity' Malaysia Airlines conducted an all-women operated flight on MH2520 from Kuala Lumpur (KUL) to Kuching (KCH) to celebrate women's contributions to the aviation industry.

Key initiatives	Objectives and Initiatives Details	Outcome
Scrap to Fab Project	Developing skills and providing economic opportunities for women from lower income communities and prison inmates through participation in the upcycling programme	5 underprivileged women household and over 20 convicts benefitted from the project
MAG X Barbie: You Can Be Anything Collaboration	To inspire and educate young girls aged 12-14 about the diverse opportunities in the aviation industry. W@M organised a visit for 11 school girls and their teacher to explore MAG facilities to provide them with first hand insights into various aviation careers. The visit was captured in a video that was shared across MAB and Mattel's social media platforms. 5 winners of the competition received a grand prize package, which included a stay at the Grand Hyatt and air tickets, encouraging them to pursue careers in aviation.	Young girls gained first hand experience on careers in aviation
Cancer Awareness Month	To educate, raise awareness, and promote early detection and prevention strategies to mitigate the impact of cancer on individuals, families, and communities. Through a variety of initiatives, campaigns, and educational programs, the aim is to equip employees with knowledge about risk factors, symptoms, screening methods, and available resources for prevention, diagnosis, treatment, and support. By enhancing widespread understanding and encouraging proactive engagement, the goal is to ultimately reduce the incidence, mortality, and overall burden of cancer globally.	More than 150 employees registered for the free cancer screening
School Outreach Programme	To inspire young women and promote their participation in aviation through talks focusing on areas where women are underrepresented.	Feedback from the school principal and alumni was overwhelmingly positive. 136 students from SMK St Francis Convent, Kota Kinabalu, attended the event
Other activities	To promote a healthy working environment and build relationships among W@M members through team building activities that emphasise socialising and physical fitness.	To promote a healthy working environment and build relationships among W@M members through team building activities that emphasise socialising and physical fitness



# CUSTOMER EXPERIENCE

GRI 3-3

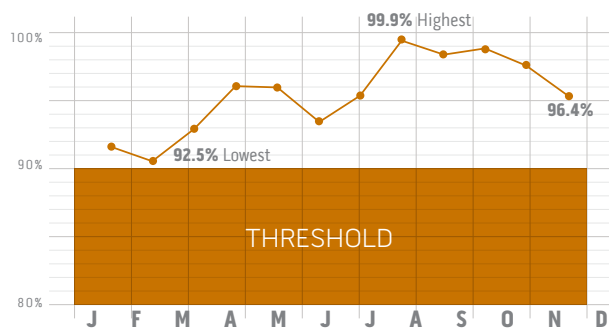
At MAG, we take pride in embodying the essence of Malaysian Hospitality in all aspect of our service offerings. Customer experience and satisfaction are essential to delivering excellence. As such, we remain dedicated to attending to and resolving customer complaints, as well as welcoming their feedback and suggestions. We wish to ensure that every interaction with our customers leaves them feeling valued and cared for.

MAVCOM complaint closure rate of 96.5% in 2023 reflects our efforts to uphold the values of hospitality and service, which are ingrained in our corporate identity.

## MAG MAVCOM report and closure rate

Metrics	2021	2022	2023
Total number of complaints received	3,211	12,532	18,759
Total number of complaints closed in 30 days	3,186	12,184	18,099
Complaint closure rate	99.2%	97.2%	96.5%

## Monthly Actual Performance vs Target

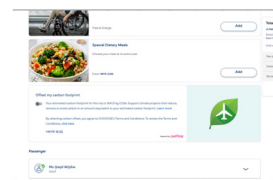


## ESG AS PART OF THE CUSTOMER EXPERIENCE

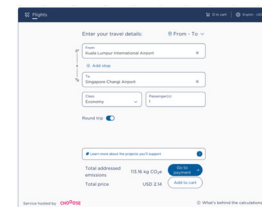
Improving the environmental sustainability of customer travel experiences is crucial for mitigating environmental impact and empowering travellers to make eco-conscious decisions. MAG recognises this importance and is committed to enhancing the environmental friendliness of its services.

In 2023, Malaysia Airlines proudly became the first Malaysian airline to introduce a voluntary Passenger Carbon Offset Programme. We have partnered with CHOOOSE, a reputable climate tech company, to roll out this programme, which enables passengers to offset their flight travel carbon emissions through two convenient option:

**1 API booking flow integration**, which seamlessly integrates emissions calculations and offsetting options into the flight booking process



**2 Our standalone carbon web app**, which allows passengers to calculate emissions and purchase of carbon offsets outside of a booking process flow.



Kindly refer to page 31 of this Report for more details on carbon offset projects supported by this programme and the MAG CHOOOSE Portal.

In 2024, we will expand our voluntary carbon offset programme to cater to corporate and cargo customers, offering them the chance to calculate and offset the environmental impact of their business travel or product logistics, respectively. As more large corporations commit to achieving net-zero emissions targets, voluntary carbon offset programmes present a valuable opportunity for customers to gauge their Scope 3 emissions from business travel and take proactive steps to mitigate them. By empowering our customers to take responsibility for their carbon footprint, we are paving the way for more sustainable air travel practices.

The sustainability of the travel experience extends to the materials used on-board. In 2023, we replaced two of our products with biodegradable materials.

We will evaluate passengers' feedback on the effectiveness and comfort of the new materials, with the view of replacing them with alternative materials based on the results.

#### Cutlery pack



#### Dental kit



*\*Kindly refer to the cabin waste management approach and initiatives of Responsible Waste and Material Management section (page 34) for more details on cabin products replacement details*

## TAKING THE EXPERIENCE TO THE NEXT LEVEL

Convenience and comfort play a large role in ensuring the best experience on our flights. Since 1 November 2023, Malaysian Airlines has offered free wifi on board to all its passengers, regardless of class or loyalty tier. This pioneering initiative offers unlimited data access throughout the entirety of the journey, positioning MAG as one of the trailblazers in providing this level of convenience. This enhancement in the in-flight experience significantly elevates passengers' connectivity, enabling seamless communication with loved ones or uninterrupted professional work. Initially, this service will be accessible on designated widebody aircraft within Malaysia Airlines' fleet, ensuring an enhanced travel experience for all passengers.

In 2024, we will introduce an exclusive private terminal transfer service exclusively designed for Enrich Platinum, Business Suite, and Business Class passengers, offering unrivalled comfort during their journey between the Main Terminal Building and the Satellite Building of KLIA Terminal 1. This premium service entails chauffeuring passengers in state-of-the-art all-electric cars, seamlessly blending luxury with sustainability. By integrating eco-friendly transportation options into the premium travel experience, we continue to uphold the ethos of Malaysian Hospitality while prioritising environmental stewardship.



EN ▾

✈ DPS: 0hrs 42mins



Wi-Fi is available



# Welcome

We are on our way to Denpasar

Malaysian Hospitality  
begins with us





# DIGITALISATION

GRI 3-3, 418-1

Digitalisation stands at the forefront of our strategic priorities in navigating the evolving landscape of the aviation industry. MAG is committed to transforming our operations, enhancing customer experiences, and optimising efficiency through comprehensive digital initiatives that embrace technological advancements.

This focus on digitalisation is not merely about adopting new technologies; it represents a fundamental shift in how we conduct our business, interact with customers, and manage internal processes.

By integrating digital solutions across various facets of our operations, from improving operational efficiency and safety to personalised customer service and innovative cargo management, MAG aims to ensure sustainability and competitiveness in a fast-paced digital world. Through these efforts, MAG is aiming to deliver exceptional value to passengers, enhance employee engagement, and optimise operational workflows.

## CYBERSECURITY

In an era where digital threats are increasingly sophisticated, MAG has prioritised the development of robust cybersecurity measures to protect its data, operations, and customer information.

Total number of substantiated complaints received concerning breaches of customer privacy

	2021	2022	2023
Complaints received from outside parties and substantiated by the organisation	0	0	0
Complaints from regulatory bodies	0	0	0
Total number of identified leaks, thefts or losses of customer data	0	0	0

## DEFENCE IN DEPTH

We have outlined a comprehensive Defence in Depth cybersecurity strategy to create a resilient, multilayered defence system where information risks in assets and data are systematically identified, thoroughly understood, and effectively managed to acceptable levels.

Defense in Depth Strategy	Protecting	Threats
Governance, Risk & Compliance	Reputation • Audit • Standard • Process	• Strategic Misalignment • Reputational Damage • Non-compliance
Data Protection	Crown Jewel • Financial Data • Customer Data • Trade Secrets	• Data Breaches • Ransomware • Data Corruption
Identity Security	Users • Internal Users • B2B Users • Vendors	• Insider Threats • Credential Theft • Account Takeover
Network Security	Network Infra • Communications • Connectivity • Services	• Malware Propagation • Brute Force Attack • Misconfiguration
Device & Application Security	Mobile Devices • Laptops • Mobile Phone • Tablets	• Vulnerabilities • Data Leakage • Insecure App


 A graphic illustration featuring a stylized tree with orange leaves and a cloud-like shape above it, composed of small dots.
 

# COMMUNITY DEVELOPMENT

GRI 3-3, 413-1  
IATA S.1

MAG is committed to fostering positive social impacts through our community development initiatives. These efforts are central to promoting socioeconomic well-being and easing the challenges faced by local communities.

At the heart of MAG's approach is a focus on enhancing community wellbeing through diverse programmes. These initiatives encourage active employee participation in volunteer activities, demonstrating MAG's dedication to civic engagement and social responsibility. Moreover, MAG supports various social causes by sponsoring flight tickets, thereby facilitating essential travel for those in need and supporting broader humanitarian efforts.

Additionally, MAG has established meaningful partnerships with various organisations to bolster community support systems. These collaborations are specifically designed to improve the livelihoods of vulnerable populations, ensuring that the benefits of economic growth are more evenly distributed. Through these strategic partnerships, MAG not only extends its social impact but also reinforces its commitment to sustainable community development.

In 2023, we collaborated with MAKNA (Majlis Kanser Nasional or the National Cancer Council Malaysia) to offer 30 return domestic flight tickets for cancer patients to ensure they could travel for treatment and support without the added burden of travel costs. In addition, MAG has pledged to provide 50 return Economy class tickets for use by cancer patients and their caregivers, valid for flights operated by MAG's affiliated airlines from 1 October 2023 to 30 September 2024, as part of the CANSUPPORT collaboration between Malaysia Aviation Group (MAG), Tata Consultancy Services (TCS), and National Cancer Society Malaysia (NCSM). This commitment reflects MAG's ongoing dedication to supporting community health initiatives and the broader goal of positively impacting the communities we serve.



Malaysia Airlines, as the Official Airline Partner for MERCY Malaysia, has leveraged its network and resources to aid in disaster relief efforts. This collaboration involves the movement of essential goods and volunteers both globally and domestically, utilising both cargo shipments and commercial flights to ensure timely and effective delivery of aid.



## MH RANGERS

MH Rangers is an initiative that mobilises a pool of employee volunteers who offer their time and expertise to support a range of activities, fostering a spirit of unity and elevating the collective morale within MAG. This proactive volunteer force assists in various customer service quality initiatives and ad hoc company activities, ensuring MAG's presence is felt both within the company and in the wider community



# 1,567

Registered



# 627

Active (2023)



# 10

Total Deployment



# 548

Total Man-days

## ACTIVITIES



**Turnaround Aircraft  
Quality Control**

Every Friday



**On-Site  
Assistance**

Peak Periods



**Special Assistance  
Team for Crisis**

In-Progress



**Faces  
of MH**

Upon Request



**MH Humanitarian  
CSR**

Upon Request



**MH  
Educational  
Awareness**

Upon Request

Date	Mission	Level of Criticality	No. of Days	MH Rangers	Man- Days
Jan, 20 - 23	On-Site Support   CNY - Balik Kampung Mission	Low	4	34	32
Mar, 17 - 19	External Event   MATTA Fair H1/2023	Medium	3	20	27
Apr, 18 - 21	Standby Mode   HRA - Balik Kampung Mission@KLIA	Low	4	52	-
Apr, 19 - 21	On-Site Support   HRA - Balik Kampung Mission@SZBAP	Low	3	17	29
Jun, 28 - Jul, 01	Standby Mode   MCAT-BCP Deployment	High	4	198	-
Sep, 01 - 03	External Event   MATTA Fair H2/2023	Medium	3	141	185
Sep, 04 - 05	On-Site Support   MAG60 Appreciation Programme	Low	2	13	26
Sep, 08 - 10	On-Site Support   MCAT - OmniCatering	High	3	30	45
Sep, 12 - 13	On-Site Support   MCAT - Stock Relocation@Brahim	Medium	2	11	12
Sep, 12 - Oct, 04	On-Site Support   MCAT - KLIA Customer Fronting	High	17	111	192
			<b>45</b>	<b>627</b>	<b>548</b>

## PRIMARY ACTIVITIES DURING FLOOD RELIEF

RELIEF-CARE PACKS	RELIEF & RECOVERY TEAM	TEMPORARY EVACUATION SHELTERS	TEMPORARY EVACUATION SHELTERS
<ul style="list-style-type: none"> <li>Centralised a packaging center to integrate surplus from internal &amp; external contributors</li> <li>Route the care packs to affected locations &amp; MABA (Hub for Klang Valley)</li> <li>MH Rangers and HC Team built the production strength to pack 472 relief-care packs.</li> </ul>	<ul style="list-style-type: none"> <li>Distributed Flood Relief Care Packs to affected staff in Selangor &amp; Pahang. They also rescued our colleagues &amp; loved ones who were stranded.</li> <li>MH Rangers with 4WD were assigned based on area postcode to expedite this mission to ensure timely delivery.</li> <li>436 relief-care packs were distributed (12, air-flown to KUL).</li> </ul>	<ul style="list-style-type: none"> <li>MABA Hotel Lobby &amp; SSZ-KLIA Gym were converted to Evacuation Shelters for employees who were stranded / evacuees.</li> <li>Essential items were provided, including meals, clothes and comfort kits.</li> <li>MH Rangers manned the shelters from 0600 – 2000 hrs.</li> </ul>	<ul style="list-style-type: none"> <li>Mobilised MH Rangers and BU Team in a team of 6 to help clean affected homes covered with mud &amp; debris.</li> <li>Water jets and cleaning utensils were provided at both hubs – MABA and SSZ</li> <li>The team managed to clean 26 houses during this mission.</li> </ul>

### MH RANGER CALL CENTRE (MHRCC)

MH Rangers were assigned to contact affected employees to ascertain their well-being and if any further support was required. They were assigned based on area postcodes and would coordinate with MH Rangers' Delivery Team, both within the company and in the wider community.

### MAG FLOOD RELIEF DONATION DRIVE

Besides monetary donations, MAG Flood Relief Donation Drive also appealed for provisions (essential food supplies and necessities) to be distributed to all MAG employees affected by the flood. MH Rangers were assigned to assist in the sorting of the donations at the hubs.

### ON-SITE BUSINESS SUPPORT

MH Rangers were deployed to support Business Unit LSG Sky Chefs Brahim and at Level 5 Departure Hall KLIA as some operations staff were stranded and unable to work. This deployment was crucial in preventing any disruption of inflight meal services and flight delays.

## FLIGHT TICKETS SPONSORSHIP

DESCRIPTION	NUMBER OF TICKETS
Ticket sponsorship for Majlis Kanser Nasional (MAKNA) - cancer patients	10
Ticket sponsorship for MERCY Malaysia	4
Ticket sponsorship for Make-A-Wish	8
Ticket sponsorship for USM Students - Spaceport Championship in El Paso (Wow Rocketry Team - Rocket Competition in Texas, US)	6
Mangrove Tree Planting - share cost of organising (Kota Kinabalu)	-
Ticket sponsorship - Erasmus Joint Master's Degree Program	1
Ticket sponsorship - Visit Langkawi - Special Education Students SMK Panchor	39
Ticket sponsorship - Sek Keb Putrajaya Precint 11 - World International Robotic 2023	12
Ticket sponsorship - Borneo International Innovation & Invention Competition 2023 - SMK Rantau Panjang	5
Ticket sponsorship - Family reunification in Vienna	2
Ticket sponsorship - National Cancer Society of Malaysia	2

# UPCYCLING PARTNERSHIPS FOR SOCIAL IMPACT

MAG has developed partnership with community members to upcycle waste materials from MAG's operation into valuable new products.

## MALAYSIA PRISON DEPARTMENT PARTNERSHIP

This upcycling partnership is designed to establish a sustainable model that not only benefits the environment but also supports marginalised communities, contributes to prisoner rehabilitation, and aids societal reintegration. They are involved in crafting upcycled products from expired life vests and discontinued uniforms, thereby gaining practical skills, earning opportunities, and preparing for a sustainable livelihood after completing their sentences.

## KOMUNITI TUKANG JAHIT (KTJ) PARTNERSHIP

The KTJ initiative specifically targets skill development and income generation for women from lower-income groups (B40) and single mothers. By repurposing waste materials into upcycled products like bags, the project addresses critical issues such as gender inequality and socioeconomic disparities, fostering independence and resilience among participating women.

In 2023, we have successfully produced a total of **826 upcycled items**. Of these, the Malaysia Prison Department produced 653 products, including sling bags and tote bags, while KTJ contributed 173 pouches.

Through these partnerships, MAG demonstrates its profound commitment to creating social impact. By empowering marginalised groups and supporting environmental sustainability through upcycling, MAG is actively contributing to a more equitable and sustainable future.

Upcycled Products	Quantity	Collaborations
Sling Bag	304	Malaysia Prison Department
Tote Bag (Blue Lining)	108	Malaysia Prison Department
Tote Bag (Yellow Lining)	98	Malaysia Prison Department
Tote Bag (No Lining)	143	Malaysia Prison Department
Small Pouch	173	KTJ



Scrap to Fab Project produced  
**826**  
upcycled items





# GOVERNANCE

## 2023 Governance Performance Highlights



**Zero number**  
of confirmed bribery  
and corruption  
incidents



**Zero sanctions**  
for non-compliance  
with Flight Safety  
Regulations



**1,534**  
of supply chain  
vendors with ESG  
awareness

Corporate Governance	59
Business Ethics & Regulatory Compliance	60
Risk Management	65
Sustainable Supply Chain	66



# CORPORATE GOVERNANCE

GRI 2-9, 3-3

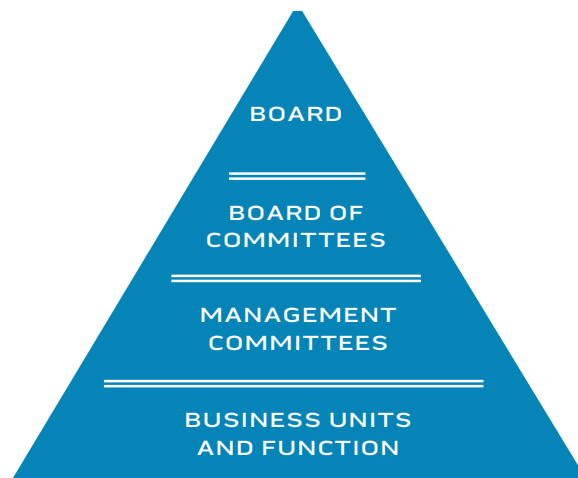
Central to our governance approach is the alignment with international best practices and adherence to regulatory requirements, which guides our operations and strategic decisions. Our governance structure is designed not only to comply with legal standards but also to foster a culture of integrity and responsible business practices that resonate through our interactions with stakeholders.

Through our governance practices, MAG aims to create a sustainable business model that not only drives economic growth but also contributes positively to the social and environmental contexts in which we operate.

Our corporate governance framework is designed to ensure oversight, transparency and accountability across our organisation while balancing the interests of all stakeholders.

The Board oversees the Group's overall sustainability and governance development, as set out in the Board Manual. The Board's roles include reviewing the Group's strategy and key operational matters, corporate plans and Key Performance Indicators, Risk and Internal Control, ESG, ensure adequacy of internal policy and regulatory compliance systems, establish ethics standards, code of conduct and appropriate behaviours, ensure a diverse and effective Board, appoint and support Management, as well as communication and report to shareholder and other stakeholders.

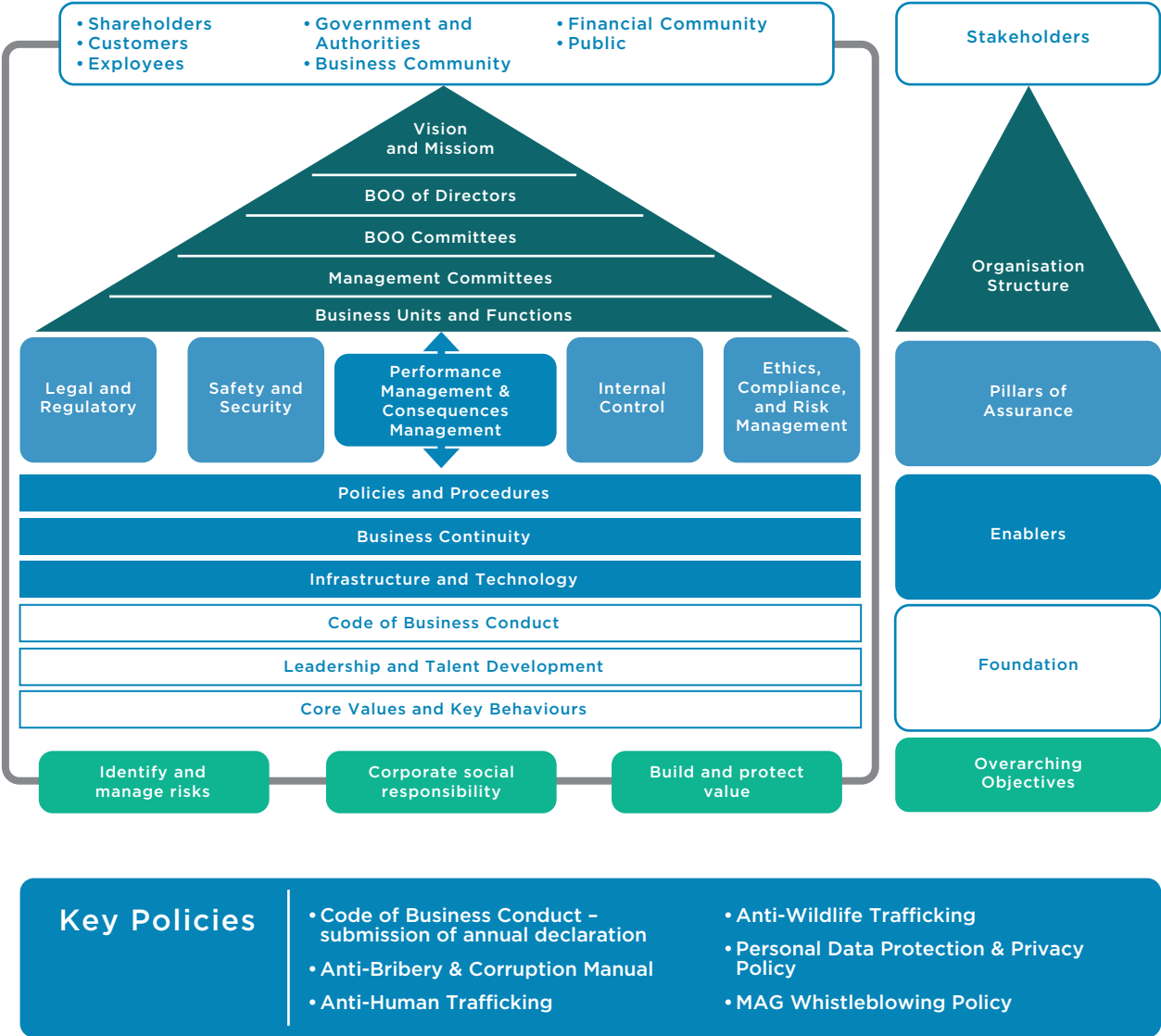
The Board is supported by three (3) committees, comprising the Audit Committee, Nomination and Remuneration Committee and Safety and Security Committee, assisting the Board in facilitating efficient decision-making and ensuring issues are discussed in depth. The Chairmen of the respective Board Committee report the key issues discussed and the decisions and/or recommendations made by the committees at each meeting.





# BUSINESS ETHICS AND REGULATORY COMPLIANCE

GRI 3-3, 2-16, 2-23, 2-24, 2-25, 2-26, 2-27, 205-2, 205-3  
IATA G.2





## AIRCRAFT SAFETY MANAGEMENT

Maintaining registration with the International Air Transport Association's Operational Safety Audit (IOSA) is a fundamental component of MAG's strategy to enhance aircraft safety. IOSA sets stringent standards and conducts thorough audits of airline operational processes, playing a vital role in ensuring compliance with international safety regulations, identifying potential safety risks, and fostering ongoing improvements in safety performance across the aviation sector.

In a notable achievement, Firefly successfully completed its initial IOSA from January 29 to February 2, 2024. The audit resulted in 48 findings and 14 observations, demonstrating a 95% conformance rate. This accomplishment underscores FY's commitment to adhering to high safety standards.

Moreover, Malaysia Airlines also achieved a significant milestone by completing the Risk-based IOSA (RBI) from February 19 to 22, 2024. The RBI audit, which focuses on evaluating risks and management effectiveness, concluded with 7 findings and 4 observations, reflecting a 99% conformance rate. This high level of compliance highlights MAB's ongoing dedication to maintaining rigorous safety protocols and enhancing its operational safety framework.

	2021	2022	2023
Total number of aircraft related incidents (cases)	Nil	Nil	Nil
Sanctions for Non-Compliance with Flight Safety Regulations (number)	Nil	Nil	Nil

## ANTI-BRIBERY AND CORRUPTION

MAG is proactively addressing the critical issue of corruption through comprehensive risk assessments and robust management systems. This approach focuses on three key areas where corruption risks are most prevalent: conflict of interest, bribery, and false claims. Through these measures, MAG is dedicated to upholding the highest standards of business integrity and fostering a culture of transparency and accountability across our operations.

### Risk Assessment on Corruption

Risk assessment was conducted on three (3) critical areas: conflict of interest, bribery and false claim.

### Implementation of the Anti-Bribery Management System

MAG has implemented the Anti-Bribery Management System with the goal of achieving ISO 37001 certification by the end of 2024. This system sets out structured measures to prevent, detect, and manage bribery risks across its operations.

### Group Business Integrity Declaration Portal

MAG has established a declaration portal that enables employees to annually submit declarations regarding conflicts of interest. The portal also facilitates the reporting of any gifts, hospitality, or sponsorships given or received, ensuring transparency and accountability in all business dealings.

### ABAC PERFORMANCE

	2021	2022	2023
Total number of employees completed ABAC training	All employees have completed the ABAC training. Awareness session on anti-bribery & corruption is conducted during HC onboarding session twice every month for new hirers		
Total number of confirmed incidents of corruption and bribery	0	0	0

### Whistleblowing Platform

Under the MAG Whistleblowing Policy, a secure and anonymous platform is available for employees and stakeholders to report any suspicions or cases of bribery and corruption. This platform guarantees the anonymity of whistleblowers, encouraging more individuals to come forward with information without fear of reprisal.

### Enhancement of Training Modules

MAG is continuously improving our training modules on anti-bribery and corruption. This ongoing enhancement is part of the broader implementation of ISO 37001, designed to educate and empower employees to recognise and combat corruption effectively.

## COMBATING HUMAN AND WILDLIFE TRAFFICKING

The aviation industry connects various parts of the world, facilitating international and domestic travel. Unfortunately, this accessibility also makes it a preferred mode of transport for traffickers to move victims across borders discreetly. The industry's extensive network can inadvertently serve as a channel for illegal human trafficking operations if not monitored and regulated carefully.

For the aviation industry, combating human trafficking aligns with broader CSR initiatives that emphasise ethical practices and human rights. Airlines and other stakeholders in the aviation sector are increasingly recognising their role in safeguarding passengers and upholding social welfare. Taking a stand against human trafficking not only reflects ethical business practices but also supports global efforts towards social justice and human dignity.

MAG employs a large number of employees, ranging, from flight crews to ground and security personnel. Proper training in recognising and responding to potential trafficking situations is crucial. Educating our employees on signs of trafficking and appropriate intervention methods is vital for preventing such activities and ensuring passenger safety.

MAG has renewed our partnership with SHUT (Stop Human and Underage Trafficking), a key player in the global fight against trafficking. This collaboration underscores our ongoing commitment to leveraging external expertise and resources to enhance our internal capabilities and effectiveness in combating trafficking activities.

In an effort to raise public awareness, MAG collaborated with Majlis Anti-Pemerdagangan Orang (MAPO) to publish an article in the July edition of Malaysia Airlines' in-flight magazine, Going Places. This article, timed with the World Day Against Trafficking in Persons, educates passengers about the seriousness of human trafficking and the collective efforts needed to combat it.

MAG has partnered with Kinesso, a US-based IT company, on a CSR programme at Kuala Lumpur International Airport (KLIA). This initiative aims to spread anti-human trafficking awareness to visitors at KLIA, illustrating a proactive approach to educating the public and enhancing vigilance within high-traffic environments.

TRAINING	2021	2022	2023
Total number of employees completed anti-human trafficking training	All cabin crew trained on victim identification and reporting mechanism	Collaboration with SHUT on Train the Trainer sessions – total of 98 staff from Inflight Services, Airport Services, ADS, Security, MW, Firefly	Twice a month session for all new cabin crew intakes on victim identification and reporting mechanism
Total number of employees completed anti-wildlife trafficking training	All cabin crew and MASKargo employees via online module on detecting wildlife trafficking and reporting mechanism	0	0

CONFIRMED INCIDENT	2021	2022	2023
Total number of confirmed incidents of human trafficking	0	0	0
Total number of confirmed incidents of wildlife trafficking	0	0	0



Recognising the importance of timely and efficient reporting in combating human trafficking, MAG is developing a specialised app to digitalise the reporting mechanism. This app, accessible to crew, ground staff, and other MAG employees via PowerApps, will facilitate the swift and secure reporting of any suspicions or incidents of human trafficking. This tool is designed to empower MAG’s workforce, providing them with a straightforward and effective means to contribute to global anti-trafficking efforts.

We have significantly strengthened our anti-wildlife trafficking initiatives through strategic collaborations and the establishment of a dedicated task force at KLIA. These efforts underscore MAG’s commitment to combating illegal wildlife trade effectively within our operational domains.

Malaysia Airlines is an active member of the KLIA anti-wildlife trafficking task force, established by Malaysia Airports Holdings Berhad (MAHB). This task force is a collaborative effort involving various stakeholders, including Customs, the Royal Malaysia Police (PDRM), the Department

of Wildlife and National Parks (PERHILITAN), and Batik Air. Since its formation in August 2023, the task force has successfully detected at least five cases of smuggling illegal wildlife through the KLIA terminal. The task force’s proactive approach and collective vigilance have been instrumental in curbing wildlife trafficking activities at one of Asia’s busiest airports.

We collaborate closely with Customs and PERHILITAN at KLIA and the MAGkargo complex. This partnership focuses on joint operations that enhance the ability to detect and intercept wildlife trafficking cases. By pooling resources and expertise, these operations leverage the strengths of each organisation, ensuring a more robust defence against the illegal wildlife trade.



WHISTLEBLOWING POLICY

MAG has established a whistleblowing policy and series of initiatives designed to ensure transparency, uphold ethical standards, and foster an environment where employees feel safe and supported in reporting misconduct. These measures are vital components of MAG’s broader commitment to corporate governance and integrity.

The Group’s Whistleblowing Policy provides a clear framework for the reporting of unethical behaviour, misconduct, or breaches of law within the organisation. The policy outlines the procedures for filing a report, ensuring that all employees understand how to raise concerns responsibly and securely. Since implementation in 2016, the Group has received and investigated 563 incidences.

A critical feature of the Whistleblowing Policy is the assurance of complete confidentiality and anonymity for whistleblowers. This protection encourages employees to come forward with information without fear of retaliation or adverse consequences.

To facilitate the secure and confidential submission of reports, MAG has implemented a dedicated whistleblowing platform. This platform is accessible to all employees and is designed to handle reports with the utmost sensitivity, ensuring that each case is treated with the required seriousness and discretion.

	2021	2022	2023
Total number of whistle-blowing case reported	46	88	79
Total number of whistle-blowing case investigated and closed	46	88	78
Total number of whistle-blowing case under investigation	0	0	1

Understanding the importance of awareness, MAG conducts regular training sessions for employees on the whistleblowing policy and the correct procedures for reporting. These training programmes are crucial for ensuring that employees feel empowered and knowledgeable about how to address and report concerns.

Reports submitted through the whistleblowing platform are reviewed by a dedicated committee responsible for ensuring that each case is investigated thoroughly and appropriate actions are taken. This oversight function is fundamental to the policy's effectiveness, providing a systematic approach to addressing and resolving reports of misconduct. Cases are reported to the Board of Audit Committee every quarter, and to the Malaysian Anti-Corruption Commission (MACC) every six months to ensure full transparency in the investigation process.



Through these initiatives, MAG demonstrates our commitment to maintaining a transparent and accountable organisation where ethical practices are important. This approach not only protects the organisation and its employees but also enhances trust and integrity across all levels.

## ADDRESSING AND PREVENTING SEXUAL HARASSMENT

Addressing sexual harassment is fundamental to creating a workplace where all employees feel safe, respected, and valued. A safe work environment fosters inclusivity and diversity, which are essential for innovative and effective teamwork. Ensuring that all employees can work without fear of harassment or discrimination is crucial for sustaining a productive and positive organisational culture.

Sexual harassment can have severe impacts on the mental and emotional wellbeing of

employees. By actively working to prevent and address such issues, MAG helps ensure the wellbeing of our staff, which in turn enhances job satisfaction and employee retention. High levels of employee satisfaction and low turnover rates contribute to operational stability and sustainability.

MAG conducts group-wide sexual harassment awareness and prevention sessions, with refresher courses conducted targeting departments or divisions with the most recent cases.

	2021	2022	2023
Total number of employees completed sexual harassment training	All employees of MAG	All new hirers during onboarding session  All new cabin crew intakes under the Integrity modules (MABA)  All ADS new intakes	All new hirers during onboarding session  All new cabin crew intakes under the Integrity modules (MABA)  All ADS new intakes  All Engineering staff
Total number of sexual harassment cases reported and investigated	12	28	14

# RISK MANAGEMENT

GRI 2-23, 2-24, 3-3

The MAG Risk Management Framework provides a structured and systematic approach to managing risks across the organisation, enhancing risk awareness, boosting compliance, and instilling confidence among decision-makers. This comprehensive framework is pivotal in equipping MAG with the necessary tools and insights to effectively assess, treat, monitor, and report risks.

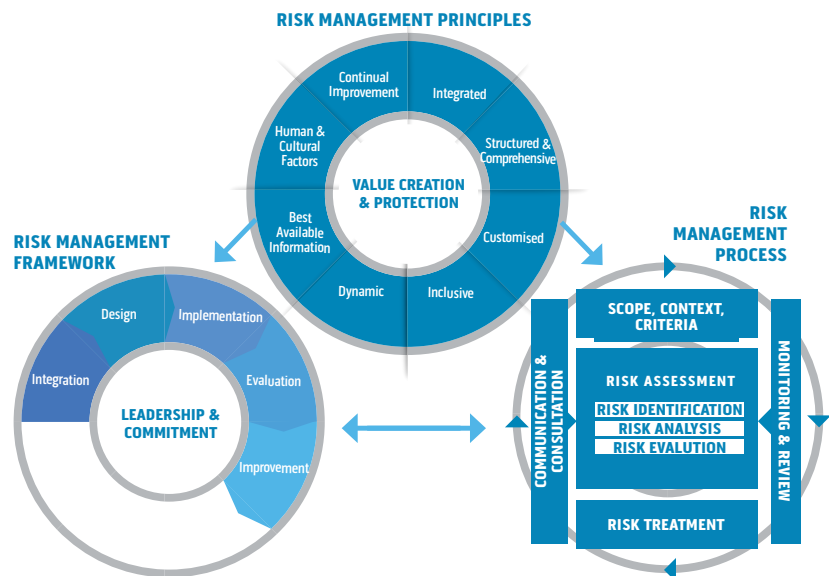
The framework is governed by internationally recognised standards and local regulations, including ISO, the COSO framework, the Malaysia Code on Corporate Governance (MCCG) 2021, Bursa Listing Requirements, and the Task Force on Climate-related Financial Disclosures (TCFD). These guidelines underscore MAG's commitment to upholding rigorous standards of risk management.

Risks within MAG are evaluated using the organisation's Probability and Impact Tables and are subsequently rated according to MAG's Risk Matrix. Based on these evaluations, appropriate mitigation plans are devised and implemented. Critical risks identified through this process are escalated for further review by senior management and the Board Audit Committee (BAC), ensuring a thorough management and oversight of significant risk exposures.

Acknowledging the critical role of sustainability in its operations, MAG is committed to integrating sustainable practices into our risk management efforts. This commitment is highlighted by the planned operationalisation of the Group Enterprise Risk Management System (GRCS) in 2024. The GRCS is designed to enhance the efficiency of risk data management and analysis, facilitating better decision-making and risk mitigation strategies.

The GRCS will also support the implementation of the TCFD framework, improving the accessibility and analysis of sustainability data. This integration will enable more precise risk assessments and foster transparency in disclosing climate-related risks, opportunities, and financial impacts.

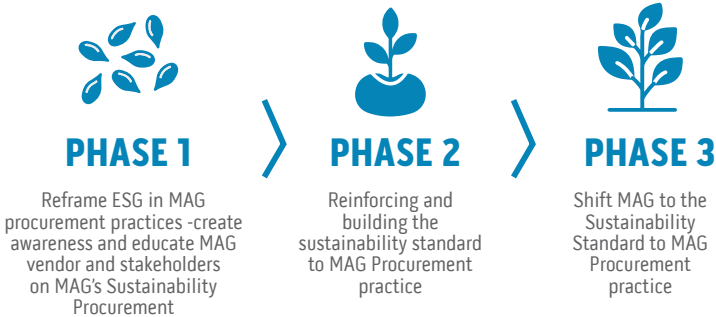
MAG plans to establish independent risk management functions in its main subsidiaries. This initiative aims to not only enhance risk management practices but also to increase transparency and heighten awareness of climate change impacts across its operations.



Through these initiatives, MAG is setting a robust foundation for managing risks in a dynamic and evolving global environment, ensuring both the sustainability and resilience of our business operations.

# SUSTAINABLE SUPPLY CHAIN

GRI 2-6, 3-3



A circular icon containing a stylized handshake, representing a partnership or agreement.

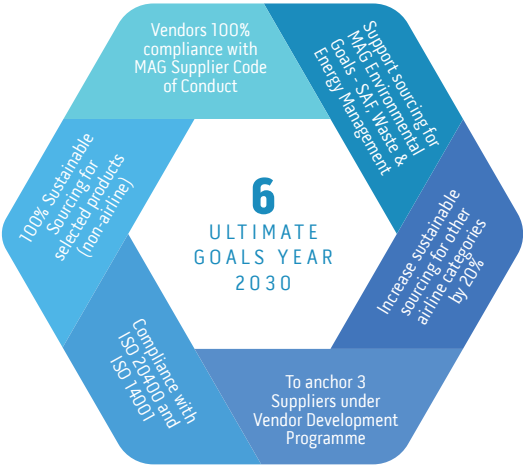
**Supplier Code of Conduct**

Click or scan here to read more

A square QR code that, when scanned, likely leads to the Supplier Code of Conduct document.

## PHASE 1 INITIATIVES

- 1** Endorsement of the Sustainable Procurement Policy, aimed at integrating ESG into all aspects of our procurement and supply chain processes. We have incorporated the Supplier Code of Conduct with the introduction of the MAG Vendor Registration System.
- 2** Conducting life cycle assessments and circular economy studies to evaluate the environmental impact of products throughout their lifecycle. This analysis helps determine which product categories should be prioritised for sustainable sourcing, ensuring that procurement decisions support our sustainability goals. To date, three products have been selected for replacement with sustainable materials.
- 3** Incorporating sustainability metrics into the procurement key performance indicators (KPIs)
- 4** Introducing self-assessment questions that incorporate ESG elements into both supplier profiles and supplier risk performance evaluations. This initiative helps identify potential risks and opportunities related to ESG factors early in the supplier selection and evaluation processes.
- 5** Integrating of a 5% ESG weighting into the technical scoring system for all Request for Proposal (RFX) processes. This adjustment prioritises suppliers who demonstrate strong ESG practices, influencing the overall procurement decisions towards more sustainable options. As of the end 2023, all RFX are subject to ESG technical scoring
- 6** Identifying pilot projects in selected product categories for sustainable sourcing. These projects serve as test cases to refine sustainable procurement practices and showcase the benefits of integrating ESG considerations into sourcing decisions. In 2023, 15 projects were identified, covering 8 product categories.
- 7** Actively supporting vendors in adopting sustainable practices. By facilitating access to these resources, we help our suppliers improve their sustainability performance, which in turn enhances the overall sustainability of MAG's supply chain. We have developed vendor programmes with government agencies and initiatives such as the Ministry of Entrepreneur and Cooperatives Development (MEDAC), MyHijau, and the SME Development Programme. To date, 46 vendors have been encouraged to implement the UNGC SME Sustainability Action Guide



### MAG supply chain awareness on ESG 2023

Metrics	Q1	Q2	Q3	Q4
Number of Approved Vendors	3,833	5,067	7,558	10,850
Number of Vendors with ESG Awareness	493	859	1,501	1534



## PERFORMANCE DATA

### MAG GHG EMISSION PERFORMANCE

Scope	2021	2022	2023
Scope 1	1,389,666	2,779,968	3,729,771
Scope 2	17,624	18,802	23,370
Scope 3	332,050	631,594	926,375

### MAG SCOPE 1 AND SCOPE 2 EMISSIONS BY ENTITY (TCO<sub>2</sub>)

Legal Entity	Emission Scope	2021	2022	2023
MAB	Scope 1	1,081,618	2,201,953	3,095,344
	Scope 2	6,270	6,889	2,428
MABES	Scope 1	-	-	620
	Scope 2	-	-	7,268
AMAL	Scope 1	11,035	211,600	258,185
	Scope 2	-	-	-
Firefly	Scope 1	21,091	93,883	141,975
	Scope 2	1,230	1,549	956
MASwings	Scope 1	23,422	37,376	37,451
	Scope 2	36	163	191
MASkargo	Scope 1	249,612	231,642	191,507
	Scope 2	8,403	8,072	9,018
ADS	Scope 1	2,868	3,513	4,688
	Scope 2	-	-	1,000
MAB Academy	Scope 1	-	-	-
	Scope 2	1,685	2,128	2,508

## PERFORMANCE DATA

### 2023 MAG EMPLOYEE GENDER DIVERSITY PERFORMANCE DATA

	2021			2022			2023		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Top management	11	2	13	16	3	19	16	3	19
Senior management	75	71	146	84	76	160	91	93	184
Middle management	289	206	495	304	229	533	355	287	642
Executive	664	666	1,320	696	703	1,399	788	771	1,559
Non-executive	2,995	1,044	4,039	3,217	1,269	4,486	3,566	1,391	4,957
Management pilot	38	-	38	36	1	37	41	2	43
Pilot group	1,187	35	1,222	1,176	39	1,215	1,241	46	1,287
Cabin crew	844	1,240	2,084	834	1,378	2,212	877	1,503	2,380
Tech - engineer	402	26	428	400	27	427	367	29	396
Tech - technician	1,020	54	1,074	972	50	1,022	945	76	1,021

### DIVERSITY IN AGE GROUPS

	2021			2022			2023		
	<30	30-50	>50	<30	30-50	>50	<30	30-50	>50
Top management	-	6	7	-	9	10	-	10	9
Senior management	-	90	56	-	98	62	-	114	70
Middle management	9	332	154	20	345	168	35	425	182
Executive	219	817	284	233	860	306	257	976	326
Non-executive	675	2,505	859	1,053	2,532	901	1,376	2,661	920
Management pilot	-	28	10	1	23	13	-	27	16
Pilot group	195	887	140	159	900	156	185	915	187
Cabin crew	314	1,338	432	408	1,299	505	518	1,292	570
Tech - engineer	57	316	55	51	311	65	33	282	81
Tech - technician	169	738	167	118	725	179	171	660	190

### EMPLOYEE BENEFITS

	2021		2022		2023	
	M	F	M	F	M	F
Total number of employees took parental leave	196	167	219	108	297	140
Total number of employees return to work after parental leave ended	196	167	219	108	295	138
Return to work rate of employees who took parental leave*	100%	100%	100%	100%	99%	99%

\*Return to work rate: (Total number of employees return to work after parental leave ended ÷ Total number of employees took parental leave) x 100

## GRI INDEX

<b>Statement of use</b>	Malaysia Aviation Group (MAG) has reported the information cited in this GRI content index for the period 1 January 2022 - 31 December 2022 with reference to the GRI Standards.
<b>GRI 1 used</b>	GRI 1: Foundation 2021
<b>Applicable GRI Sector Standard(s)</b>	Not applicable

GRI Standard	Disclosure	Page Number (s) or URL/Direct Answer
<b>GRI 2: General Disclosures 2021</b>	2-1 Organisational details	4, 5
	2-2 Entities included in the organisation's sustainability reporting	3
	2-3 Reporting period, frequency and contact point	3
	2-4 Restatements of information	–
	2-5 External assurance	3, 8, 10
	2-6 Activities, value chain and other business relationships	4, 5, 9, 10
	2-7 Employees	4
	2-8 Workers who are not employees	–
	2-9 Governance structure and composition	49
	2-10 Nomination and selection of the highest governance body	–
	2-11 Chair of the highest governance body	–
	2-12 Role of the highest governance body in overseeing the management of impacts	49
	2-13 Delegation of responsibility for managing impacts	49
	2-14 Role of the highest governance body in sustainability reporting	–
	2-15 Conflicts of interest	–
	2-16 Communication of critical concerns	–
	2-17 Collective knowledge of the highest governance body	49, 52, 53
	2-18 Evaluation of the performance of the highest governance body	–
	2-19 Remuneration policies	–
	2-20 Process to determine remuneration	–
	2-21 Annual total compensation ratio	–
	2-22 Statement on sustainable development strategy	–
	2-23 Policy commitments	7, 8, 12
	2-24 Embedding policy commitments	15, 22, 23, 28, 32, 33, 35, 41, 49, 50, 51, 54
	2-25 Processes to remediate negative impacts	15, 22, 23, 28, 32, 33, 35, 41, 49, 50, 51, 54
	2-26 Mechanisms for seeking advice and raising concerns	49, 50, 51, 53, 54
	2-27 Compliance with laws and regulations	53, 54
	2-28 Membership associations	15, 22, 23, 28, 32, 33, 35, 41, 49, 50, 51, 54
	2-29 Approach to stakeholder engagement	14
	2-30 Collective bargaining agreements	14

GRI Standard	Disclosure	Page Number (s) or URL/Direct Answer
<b>GRI 3: Material Topics 2021</b>	3-1 Process to determine material topics	13
	3-2 List of material topics	13
	3-3 Management of material topics	13
<b>GRI 201: Economic Performance 2016</b>	201-1 Direct economic value generated and distributed	–
	201-2 Financial implications and other risks and opportunities due to climate change	15, 16
	201-3 Defined benefit plan obligations and other retirement plans	33
	201-4 Financial assistance received from government	–
<b>GRI 202: Market Presence 2016</b>	202-1 Ratios of standard entry level wage by gender compared to local minimum wage	–
	202-2 Proportion of senior management hired from the local community	–
<b>GRI 203: Indirect Economic Impacts 2016</b>	203-1 Infrastructure investments and services supported	–
	203-2 Significant indirect economic impacts	–
<b>GRI 204: Procurement Practices 2016</b>	204-1 Proportion of spending on local suppliers	–
<b>GRI 205: Anti-corruption 2016</b>	205-1 Operations assessed for risks related to corruption	–
	205-2 Communication and training about anti-corruption policies and procedures	52
	205-3 Confirmed incidents of corruption and actions taken	53
<b>GRI 206: Anti-competitive Behavior 2016</b>	206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	53
<b>GRI 207: Tax 2019</b>	207-1 Approach to tax	–
	207-2 Tax governance, control, and risk management	54
	207-3 Stakeholder engagement and management of concerns related to tax	–
	207-4 Country-by-country reporting	–
<b>GRI 301: Materials 2016</b>	301-1 Materials used by weight or volume	11, 25, 26, 27
	301-2 Recycled input materials used	26, 35
	301-3 Reclaimed products and their packaging materials	26
<b>GRI 302: Energy 2016</b>	302-1 Energy consumption within the organisation	–
	302-2 Energy consumption outside of the organisation	–
	302-3 Energy intensity	–
	302-4 Reduction of energy consumption	11, 16, 17, 18, 19, 20
	302-5 Reductions in energy requirements of products and services	11, 19, 20, 21



GRI Standard	Disclosure	Page Number (s) or URL/Direct Answer
<b>GRI 303: Water and Effluents 2018</b>	303-1 Interactions with water as a shared resource	25, 28
	303-2 Management of water discharge-related impacts	–
	303-3 Water withdrawal	–
	303-4 Water discharge	–
	303-5 Water consumption	28
<b>GRI 304: Biodiversity 2016</b>	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	31
	304-2 Significant impacts of activities, products and services on biodiversity	31
	304-3 Habitats protected or restored	31
	304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations	–
<b>GRI 305: Emissions 2016</b>	305-1 Direct (Scope 1) GHG emissions	16
	305-2 Energy indirect (Scope 2) GHG emissions	16
	305-3 Other indirect (Scope 3) GHG emissions	16
	305-4 GHG emissions intensity	16
	305-5 Reduction of GHG emissions	11, 20
	305-6 Emissions of ozone-depleting substances (ODS)	–
	305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	–
<b>GRI 306: Waste 2020</b>	306-1 Waste generation and significant waste-related impacts	–
	306-2 Management of significant waste-related impacts	25 - 26
	306-3 Waste generated	–
	306-4 Waste diverted from disposal	11, 25, 27
	306-5 Waste directed to disposal	–
<b>GRI 308: Supplier Environmental Assessment 2016</b>	308-1 New suppliers that were screened using environmental criteria	–
	308-2 Negative environmental impacts in the supply chain and actions taken	–
<b>GRI 401: Employment 2016</b>	401-1 New employee hires and employee turnover	–
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	33, 36-39
	401-3 Parental leave	33
<b>GRI 402: Labor/Management Relations 2016</b>	402-1 Minimum notice periods regarding operational changes	–

GRI Standard	Disclosure	Page Number (s) or URL/Direct Answer
<b>GRI 403: Occupational Health and Safety 2018</b>	403-1 Occupational health and safety management system	33
	403-2 Hazard identification, risk assessment, and incident investigation	30, 31, 33, 49, 54
	403-3 Occupational health services	–
	403-4 Worker participation, consultation, and communication on occupational health and safety	36-39 33
	403-5 Worker training on occupational health and safety	–
	403-6 Promotion of worker health	33, 39
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	32, 37-38
	403-8 Workers covered by an occupational health and safety management system	29 - 30, 33, 37-38
	403-9 Work-related injuries	–
	403-10 Work-related ill health	33
<b>GRI 404: Training and Education 2016</b>	404-1 Average hours of training per year per employee	–
	404-2 Programmes for upgrading employee skills and transition assistance programs	36
	404-3 Percentage of employees receiving regular performance and career development reviews	34
<b>GRI 405: Diversity and Equal Opportunity 2016</b>	405-1 Diversity of governance bodies and employees	34
	405-2 Ratio of basic salary and remuneration of women to men	–
<b>GRI 406: Non-discrimination 2016</b>	406-1 Incidents of discrimination and corrective actions taken	–
<b>GRI 407: Freedom of Association and Collective Bargaining 2016</b>	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	–
<b>GRI 408: Child Labor 2016</b>	408-1 Operations and suppliers at significant risk for incidents of child labor	–
<b>GRI 409: Forced or Compulsory Labor 2016</b>	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	–
<b>GRI 410: Security Practices 2016</b>	410-1 Security personnel trained in human rights policies or procedures	–
<b>GRI 411: Rights of Indigenous Peoples 2016</b>	411-1 Incidents of violations involving rights of indigenous peoples	–

GRI Standard	Disclosure	Page Number (s) or URL/Direct Answer
<b>GRI 413: Local Communities 2016</b>	413-1 Operations with local community engagement, impact assessments, and development programs	7, 26, 31, 35, 45 - 47
	413-2 Operations with significant actual and potential negative impacts on local communities	—
<b>GRI 414: Supplier Social Assessment 2016</b>	414-1 New suppliers that were screened using social criteria	—
	414-2 Negative social impacts in the supply chain and actions taken	—
<b>GRI 415: Public Policy 2016</b>	415-1 Political contributions	—
<b>GRI 416: Customer Health and Safety 2016</b>	416-1 Assessment of the health and safety impacts of product and service categories	—
	416-2 Incidents of non-compliance concerning the health and safety impacts of products and services	50
<b>GRI 417: Marketing and Labeling 2016</b>	417-1 Requirements for product and service information and labeling	—
	417-2 Incidents of non-compliance concerning product and service information and labeling	—
	417-3 Incidents of non-compliance concerning marketing communications	—
<b>GRI 418: Customer Privacy 2016</b>	418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	50

## IATA ESG METRICS

		Units	Page
<b>E.1</b>	Fuel Consumption (flight operations)	t <sup>1</sup>	17
<b>E.2</b>	Scope 1 CO <sub>2</sub> emissions	tCO <sub>2</sub> ; tCO <sub>2</sub> e <sup>2</sup>	16
<b>E.3</b>	Scope 2 CO <sub>2</sub> emissions	tCO <sub>2</sub> ; tCO <sub>2</sub> e	16
<b>E.4</b>	No <sub>x</sub> emissions	kg	16
<b>E.5</b>	Carbon offsets (voluntary - airline purchased)	t	-
<b>E.6</b>	Carbon offsets (voluntary - customer purchased)	t	-
<b>E.7</b>	Carbon offsets (mandatory)	t	-
<b>E.8</b>	Noise: % of fleet that meets with ICAO Chapter III, IV & XIV	%	29-30
<b>E.9</b>	Energy consumption within the organisation, non renewables and renewables	GJ <sup>3</sup> ; MWh <sup>4</sup>	25-28
<b>S.1</b>	Community engagement and charitable support	\$, hours, cargo t, passengers	45-46
<b>S.2</b>	Work related injuries	#, rate	33, 50
<b>S.3</b>	Fatalities as result of work-related injury	#, rate	33, 50
<b>S.4</b>	Employee training; includes different types of trainings	#, hours	36
<b>G.1</b>	Diversity (gender, grade)	#	34
<b>G.2</b>	Total number of confirmed corruption cases	#	52



## ASSURANCE STATEMENT



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### ASSURANCE STATEMENT

#### Context

NORMEC VERIFAVIA (Singapore) Pte Ltd. has been appointed by Malaysia Aviation Group to carry out an impartial verification, providing limited assurance, of the carbon inventory data for **Scope 1, Scope 2, and Scope 3** emissions for the period of **January 1<sup>st</sup> to December 31<sup>st</sup>, 2023**. The calculation of scope 2 emissions was based on location-specific emission factors. The table below presents the comprehensive breakdown of the total CO<sub>2</sub> emissions.

Reporting scope	CO <sub>2</sub> emissions (tonnes)
Scope 1 (Jet fuel, Lubricants, Diesel & Petrol)	3, 729, 771
Scope 2 (Purchased Electricity)	23, 370
Scope 3 (Purchased goods & Services, Capital goods, Upstream transportation & distribution, Energy & Fuel related activities, Waste generated in operations, Business Travel, Employee Commuting, Upstream leased assets)	926, 375
<b>Malaysia Aviation Group Total 2023 Scope 1, Scope 2 &amp; Scope 3</b>	<b>4, 679, 516</b>

#### Criteria

We conducted the independent audit based on the following verification criteria:

- ISO 14065:2013 – *Greenhouse gases – requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition*
- ISO 14064-3:2019 – *Greenhouse Gases – Specification with guidance for the validation and verification of greenhouse gas emissions and removals*
- Chapter 10 of the *Greenhouse Gas Protocol – “A Corporate Accounting and Reporting Standard” (Revised Edition)*

#### Responsibilities

The preparation and reporting of carbon inventory data, along with all supporting information and assessments, are the sole responsibility of Malaysia Aviation Group. Additionally, they are responsible for setting objectives related to carbon information and management, as well as establishing and maintaining performance management and internal control systems that serve as the basis for the reported information. Our role, as stated in the verification contract, is to form an independent opinion based on the examination of the information, data, and documents provided.

In accordance with the verification contract, it is our duty to form an impartial judgment by thoroughly analyzing the information and data presented in the Carbon Footprint. Our subsequent obligation is to convey this opinion to Malaysia Aviation Group. Additionally, we are required to report any instances which are based on our professional assessment:

- There are actual or potential misstatements (omissions, misrepresentations, or errors) or non-conformities related to the carbon inventory data.

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- The verification team/verifier has not been provided with all the necessary information and explanations required to perform a thorough examination.
- Opportunities exist for enhancing the company's performance in the monitoring and reporting of carbon inventory data communicated through the issues log.

We conducted a thorough examination, considering the verification criteria documents listed earlier. This process involved engaging in email and teleconferencing discussions, as well as conducting a virtual site visit between May and June 2024. During these interactions, we interviewed the responsible staff members to obtain limited assurance that the data's amounts and disclosures were appropriately prepared in accordance with the requirements outlined by the Greenhouse Gas Protocol. Our assessment included evaluating the data's relevance, completeness, consistency, transparency, and accuracy. Additionally, we reviewed and considered any necessary estimates and judgments made by Malaysia Aviation Group in preparing the data, while also assessing the overall adequacy of the data's presentation in the Carbon Footprint of Malaysia Aviation Group.

## Independence statement

We can confirm that both NORMEC VERIFAVIA (Singapore) Pte Ltd. and the verification team maintain complete independence from Malaysia Aviation Group. They have not been involved in any capacity with the creation of the carbon inventory, estimation of GHG emissions, or the preparation of any textual or data-related content presented in the sustainability section of Malaysia Aviation Group's annual report, with the exception of this Assurance Statement.

## Opinion

We have carried out a verification of the carbon inventory data reported by Malaysia Aviation Group, as presented earlier. Our verification work, conducted with limited assurance, confirms that these data are accurately represented and do not contain any significant misstatements or non-conformities.

Singapore, 05 June 2024



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## ABBREVIATIONS & ACRONYMS

<b>AATIP</b>	Advanced Aerospace Threat Identification Program	<b>LTAG</b>	Long Term Aspirational Goal
<b>ADS</b>	AeroDarat services	<b>LTJ</b>	Loss Time Injury
<b>AI</b>	Artificial Intelligence	<b>MABA</b>	Malaysia Airlines Berhad Academy
<b>ATR</b>	Average True Range	<b>MACC</b>	Malaysian Anti Corruption Commission
<b>AOC</b>	Air Operations Certifications	<b>MAG</b>	Malaysia Aviation Group
<b>BCP</b>	Business Continuity Plan	<b>MACPC</b>	Malaysia Aviation Consumer Protection Code
<b>BGRC</b>	Board Governance, Risk and Compliance	<b>MAHB</b>	Malaysia Airports Holdings Berhad
<b>BKI</b>	Kota Kinabalu International Airports	<b>MASB</b>	Malaysian Accounting Standards Board
<b>BMI</b>	Business Media International	<b>MAVCOM</b>	Malaysian Aviation Commission
<b>BU</b>	Business Unit	<b>MBM</b>	Market Based Measure
<b>Bumiputra</b>	The concept of a bumiputra ethnic group in Malaysia	<b>MH</b>	Malaysian Hospitality
<b>CAAM</b>	Civil Aviation Authority of Malaysia	<b>MHCIS</b>	Malaysia Airlines Customer Insight Survey
<b>CCUS</b>	Carbon Capture Technologies	<b>MHRCC</b>	MH Ranger Call Centre
<b>CDA</b>	Continuous Descent Altitude	<b>MHQASE</b>	MH Quality Assurance Self Evaluation Form
<b>CITES</b>	Convention on International Trade in Endangered Species of Wild Fauna and Flora	<b>MK</b>	Malaysia Airlines Berhad Kargo
<b>CO<sub>2</sub></b>	Carbon Dioxide	<b>MOR</b>	Mandatory Occurrence Report
<b>COP27</b>	27th Conference of the Parties	<b>MW</b>	MASwings
<b>CORSIA</b>	Carbon Offsetting and Reduction Scheme for International Aviation	<b>MOU</b>	Memorandum of Understanding
<b>COSO</b>	Committee of Sponsoring Organisations	<b>MYA</b>	Miri Airport
<b>CSR</b>	Corporate Social Responsibility	<b>NGO</b>	Non-Governmental Organisation
<b>DNA</b>	Deoxyribonucleic Acid	<b>NGWB</b>	Next Gen Wide Body
<b>DOSH</b>	Department of Safety and Health	<b>NRT</b>	Narita, Tokyo
<b>EAP</b>	Employee Assistance Programme	<b>PBSM</b>	Persatuan Bulan Sabit Malaysia
<b>EMD</b>	Engineering Management Department	<b>PDRM</b>	Polis Diraja Malaysia
<b>EOTI</b>	Engine Out Taxi In	<b>PEN</b>	Penang
<b>EOTo</b>	Engine Out Taxi Out	<b>PEY</b>	Premium Economy
<b>ERMD</b>	Enterprise Risk Management Department	<b>RAAL</b>	Reduced Acceleration Altitude
<b>ERM</b>	Enterprise Risk Management	<b>REVV</b>	Idle Reverse Trust
<b>ESG</b>	Economy, Social, Government	<b>RFLAP</b>	Reduced Drag Landing Flaps Robotic Process
<b>EQA</b>	Environmental Quality Act	<b>SAF</b>	Sustainable Aviation Fuel
<b>FAQ</b>	Frequently Asked Questions	<b>SGD</b>	Sustainable Development Goals
<b>FE</b>	Flight Explorer	<b>SHAME</b>	Sexual Harassment Must End
<b>FY</b>	FireFly	<b>SHUT</b>	Stop Human Trafficking Association
<b>GB</b>	Group Business	<b>SME</b>	Small and mid size enterprises
<b>GMD</b>	Group Managing Director	<b>SOHELP</b>	Safety Health Enhancement Level Program
<b>GHG</b>	Green House Gases	<b>SOP</b>	Standard Operating Procedure
<b>GP</b>	Group Procurement	<b>SP</b>	Outpatients Specialist
<b>GRCS</b>	Governance, Risk and Compliance System	<b>SRB</b>	Safety Review Board
<b>IATA</b>	International Air Transport Association	<b>SRM</b>	Safety Review Meeting
<b>ICAO</b>	International Civil Aviation Organisation	<b>SRM</b>	Supplier Relationship Management
<b>IFE</b>	In flight entertainment	<b>SZB</b>	Sultan Abdul Aziz Shah Airport
<b>IG</b>	Implementation Guidance	<b>SSZ</b>	South Support Zone
<b>IP</b>	Inpatients	<b>SYD</b>	Sydney
<b>IOSA</b>	IATA Operational Safety Audit	<b>TRAFFIC</b>	Trade Records Analysis of Flora and Fauna in Commerce
<b>ISAGO</b>	IATA Safety Audit for Ground Operations	<b>WB</b>	Whistleblower
<b>KLIA</b>	Kuala Lumpur International Airport	<b>WFH</b>	Work from home
<b>KPI</b>	Key Performance Indicator	<b>WHM</b>	Wildlife Hazard Management Program
<b>KRI</b>	Key Risk Indicator	<b>W-lfe</b>	Wireless Inflight Entertainment
<b>KTJ</b>	Komuniti Tukang Jahit		
<b>LHR</b>	Heathrow		



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