

SUSTAINABILITY STATEMENT 2025

FROM PARTICLEBOARD
TO PLANET-FRIENDLY.



JAN - DEC 2025 KEY ESG HIGHLIGHTS

ENVIRONMENT

CERTIFICATION



**ISO 14001
Certified**
**ISO 9001
Certified**

EMISSIONS



SCOPE 1*

700.57 tonnes/CO₂



SCOPE 2*

10,286.81 tonnes/CO₂



SCOPE 3*

20,687.56 tonnes/CO₂

CLEAN ENERGY GENERATED



Solar Energy Generated
1,928,408.40 kWh

Solar Avoidance
1,454.02 tonnes/CO₂

WASTE MANAGEMENT



Waste generated to landfill
768 tonnes*

Recycle waste generated
6,513 tonnes*

SOCIAL

OUR PEOPLE



Over 1700
employees



Over 320
women employed throughout
management to operations



99.63%
PERMANENT employees



Employee Housing
Completion:
2025/2026

TRAINING



2.39 hours*

Average Training Hours per
employee

SAFETY



ZERO

reported cases on work related
fatalities

LTIR: 3.87**

GOVERNANCE

ANTI BRIBERY



ZERO

reported cases on Anti-Bribery
and Corruption

HUMAN RIGHTS



ZERO

reported cases on Human
Rights Violation

DATA PRIVACY



ZERO

reported cases on breaches of customer
privacy and losses of customer data

COMPLIANCE



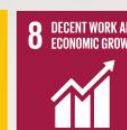
NO whistleblowing reports



NO environmental fines
incurred



**OUR SUSTAINABLE
DEVELOPMENT
GOALS**



HEVEAPAC SDN. BHD.

"Globally Recognised – The Preferred Manufacturer in Asia"



About This Report

HEVEAPAC SDN. BHD. (Company Registration Number: 166282W (198701007564)) ("Heveapac" or "the Company"), a leading producer of Ready-To-Assemble furniture and laminated particleboard shelving in Malaysia, recognises that sustainability is a fundamental aspect of driving long-term success while safeguarding the environment, empowering communities, and fostering ethical business practices. As a key player in the wood-based panel and furniture industry, Heveapac embraces its responsibility to integrate Environmental, Social, and Governance ("ESG") considerations into its operations and strategies, actively striving to balance economic growth with environmental stewardship, and social responsibility, thereby ensuring its business drives positive change for the future. This Sustainability Report highlights the company's key initiatives, progress, and challenges as it aligns with global standards and Malaysia's sustainable development goals, focusing efforts on critical areas such as climate resilience through renewable energy like its solar power system, waste management by maximising the use of wood residues and wood dust, enhancing energy efficiency, supporting employees' welfare with modern facilities and safety standards, and maintaining sound corporate governance. Through these pillars, Heveapac aims to create shared value for all stakeholders while minimising environmental impact and strengthening its contributions to society, emphasising that transparency, accountability, and innovation remain central to its vision as it works towards a more resilient and inclusive tomorrow.

Reporting Boundaries & Scope

This sustainability statement encompasses the business divisions of Heveapac's manufacturing plant in Senawang, including our core manufacturing operations. As most of our workforce operates in this region, our reporting focuses primarily on activities under our direct operational control.

Reporting Period & Cycle

The reporting period of this Report is from 1 January 2025 to 31 December 2025.

Reporting Frameworks



Heveapac adheres to various sustainability reporting framework and guidelines to ensure accuracy, transparency, accountability, and to mitigate any instances of reporting bias/misinformation. These include:

- Bursa Securities Malaysia Berhad ("Bursa Securities")'s Main Market Listing Requirements on Sustainability Reporting.
- Global Reporting Initiative ("GRI") Standards.
- Sustainability Accounting Standards Board ("SASB")
- Task Force on Climate-related Financial Disclosures ("TCFD").

In relation to sustainability goals, we are aligned with the recommendations published by the United Nations Sustainable Development Goals ("UNSDGs").

Progressive Statements

This Report contains progressive statements regarding Heveapac's objectives, strategies, plans, and future initiatives that are intertwined with our business, financial, and non-financial performance. These statements encompass terms such as 'expects', 'targets', 'intends', 'anticipates', 'believes', 'estimates', 'may', 'plans', 'projects', 'should', 'would', and 'will'. It is crucial to note that these statements should not be construed as a guarantee of future operating or financial performance, as they may entail potential risks or unforeseen consequences for Heveapac. Factors that could lead to actual results differing materially from those in the progressive statements include global, national, and regional economic and social conditions, particularly those affecting the wood-based panel and furniture industry.

Assurance

At Heveapac, we recognise that trust is built through transparency. While we have carefully prepared this sustainability statement with accurate data, we acknowledge that external verification would further strengthen its credibility. As we progress in our sustainability journey, we aspire to engage independent assurance in future reports to validate our disclosures. For now, we welcome any feedback from our stakeholders as we continue improving our reporting processes. This reflects our commitment to growing responsibly while maintaining humility about the work still ahead. This Report was prepared by Heveapac's Sustainability Management Committee (“SMC”) and has been reviewed and approved by the Board of Directors (“the Board”).

Feedback

Heveapac always values the feedback and views of all our stakeholders to better understand their needs and concerns. As part of our transparency efforts, we encourage all types of inquiries and questions to be forwarded, and we will try our utmost best to review and provide our replies to the best of our abilities. Kindly submit all feedback to:

Mr. Max Han
Senior Finance Manager, Heveapac
E-mail: maxhan@heveapac.com.my

Statement of Commitment and Materiality Assessment

We formally recognise that upholding strong ethical conduct, ensuring comprehensive employee welfare, and maintaining integrity across our supply chain are material factors that directly influence our enterprise value. These risks, which include potential legal liability, operational disruption, and reputational damage, require structured disclosure aligned with the four core pillars Governance, Strategy, Risk Management, and Metrics and Performance.

Heveapac is a wholly owned subsidiary of Heveaboard Berhad (“Heveaboard”). The ultimate responsibility for the Group's leadership and corporate governance rests with the Heveaboard Board of Directors (not to be confused with Heveapac’s Board of Directors). This structure ensures that Heveapac’s operational policies leverage the robust governance and control frameworks established at the Heveaboard Group level.

Our foundation for managing these risks is already established through internal policies, including a zero tolerance Anti-Corruption (“ABC”) Policy, compliance with the Malaysian Anti-Corruption Commission Act 2009 (“MACC”), and the adoption of the international Ethical Trading Initiative (“ETI”) Base Code for labour practices.



Stakeholder Engagement

We believe that continuous engagement with our stakeholders is vital to making our sustainability initiatives effective and well known. Recognising the importance of identifying and addressing sustainability issues with our stakeholders enables us to make well informed decisions to achieve our sustainability goals.

The following table outlines the key stakeholders that influence our business operations, their respective areas of interest, and the engagement methods we undertook to address these interests.

Stakeholder group	Frequency and type of engagement	Topics of concern	How we manage the issue
Customers (existing and potential) 	Frequency: Continuous Type: Awareness initiatives, personalised one-on-one interactions	- Quality of product - Timeliness of Deliveries - Identification and Resolution of Flaws - Reconnecting with Clients and Ensuring Continuous Improvement	- Quality management system ISO 9001 - Quality assurance
Media 	Frequency: Ad-Hoc Type: Print media, digital platforms, media briefings, and Product launches	- Company performance - Addressing Misunderstandings About the Brand - Resolving Concerns Regarding Offerings or Support	- Media Announcements and Updates - Showcasing Initiatives via Outreach and Communication Platforms
Employees 	Frequency: Ad-Hoc, Continuous Type: Learning Workshops, Employee Interaction Initiatives, Staff Feedback Assessments	- Organisational Health and Employment Stability - Employee Care and Perks - Workplace Safety and Security - Professional Skills and Performance Excellence	- Staff engagement programmes - Implementation of Health, Safety and Environment programmes involving employees - Professional Development Sessions and Skill-Building Programs
Suppliers 	Frequency: Ad-Hoc Type: Evaluation Discussions, Training Sessions, and Guidance for Adherence	- Compliance issues - Bid Pricing and Payment Terms - Cost Optimisation - Health, Safety and Environment Standards	- Engagement with suppliers during assurance audit - Consistent and ongoing communication - Continuous process enhancement - Collaborate and address concerns with relevant stakeholders

Stakeholder group	Frequency and type of engagement	Topics of concern	How we manage the issue
Investors and Financiers 	Frequency: Annual, quarterly Type: Annual general meeting, Quarterly Performance Updates, Media Briefings, Focused Presentations, and Strategic Discussions	- Adherence to Regulatory Requirements - Profitability at the Cost of Environmental and Community Welfare - Operational Vulnerabilities - Challenging Market Dynamics - Adverse Public Sentiment	- Semi-annual reporting and regular audit - Communicating with investors and conveying the corporate strategy - Launching a variety of cost-effective services
Industry associations 	Frequency: Ad-Hoc Type: Represent in association	- Rising cost of business - Financial Impact Stemming from New Regulatory Measures - Legislative Changes and Policies Negatively Influencing the Sector	- Explore strategic acquisitions or deeper partnerships in related services.
Business partners 	Frequency: Ad-Hoc Type: Meetings, discussions, functions, product launches	- Payment - Terms of reference - Performance Evaluation - Human Rights - Health, Safety and Environment Standards	- Standard Operation Procedure ("SOP") - Proper SOP for monitoring and tracking - Benchmarking
NGOs 	Frequency: Ad-Hoc Type: Meetings, discussions, Joint Initiatives	- Environmental issues - Human rights - Challenges Impacting the Surrounding Population	- Environment engagement programmes - Corporate Social Responsibility ("CSR") programmes

Materiality Assessment

Heveapac recognises that both the direct and indirect effects of its significant issues are crucial in determining the enduring value generated for its stakeholders. These concerns also significantly guide the company's business plan and choices regarding resource distribution in tackling major sustainability issues. To guarantee that these issues are properly handled, the Group undertakes a detailed review of material topics every three years. The most recent comprehensive evaluation took place in 2025, engaging key stakeholders, both internal and external, to capture their concerns and interests.

The objective of this methodology was to guarantee that the company's sustainability approaches correspond with the shifting priorities of stakeholders and the dynamic operating environment.

A summary of the updated process for material assessment conducted at the Group level is provided in the subsequent table:

STEP 1 Review Existing Material Sustainability Matters



A comprehensive inspection of the Company's crucial sustainability topics integrates both internal and external considerations, such as business plans, potential dangers, expectations of interested parties, and new developments.

STEP 2 Sustainability Impact Evaluation



The Company utilises the metrics of Enterprise Risk Management ("ERM") to assess the probability of risk and the resulting consequences related to sustainability subjects.

STEP 3 Benchmarking Review



Determine both local and international developments, then conduct a comparative evaluation. Searches across media platforms and specialised knowledge help pinpoint worldwide and regional sustainability patterns. A comparative analysis is executed against industry competitors and exemplary practices. Ensuring correspondence with Bursa Securities requirements, GRI standards, and SDGs confirms pertinence.

STEP 4 Stakeholder and Executive Integration



The Group engages internal and external stakeholders (including the Board and Senior Management) to incorporate their perspectives and subsequently uses management meetings to refine priorities. This process integrates material sustainability matters into business and sustainability strategies, which results in the Materiality Matrix

STEP 5 Validation and Approval



The resulting Materiality Matrix is formally validated against the Group's strategies and presented to the SMC for final deliberation and formal endorsement



Board and Senior Management Oversight Structure

Heveapac operates as a wholly owned subsidiary of Heveaboard, creating a governance structure where internal operational autonomy is balanced by parent-level strategic oversight. While Heveapac maintains internal management of its operational conduct and policy endorsement under the leadership of Founder and Executive Director Mr. Peh Ju Chai, the organisation leverages the robust frameworks of Heveaboard for critical corporate functions.

Specifically, Heveaboard provides essential oversight in areas such as risk management and audit committee functions, with its Board of Directors assuming ultimate responsibility for the Group's leadership, corporate governance, and sustainability initiatives. This hierarchical arrangement ensures that while Heveapac's specific operational needs receive high-level strategic attention, they remain aligned with the established control frameworks of the broader Group.

The responsibility for operational management and compliance within Heveapac is systematically distributed among its senior management team. According to the Health, Safety and Environment ("HSE") Policy, senior leadership is accountable for achieving defined policy goals, though successful implementation requires the active cooperation of all employees, contractors, and visitors with the HSE Section personnel. Furthermore, to ensure alignment with international standards, a senior management representative from Heveapac is formally assigned the responsibility for health and safety within the ETI framework. This designation ensures that safety and ethical compliance are treated as core executive priorities rather than peripheral administrative tasks.

Internal compliance and the enforcement of ethical standards are primarily centralised within the Human Resource ("HR") and Admin Department. The HR and Admin Manager serves as a pivotal figure in managing the company's critical risk areas and maintaining organisational integrity. This department is designated as the primary administrative body for enforcing the **No Child Labour Policy** and for managing the confidential grievance processes related to discrimination.

Additionally, the HR and Admin Department acts as the formal channel for receiving reports regarding anti-corruption suspicions, thereby serving as the cornerstone of Heveapac's internal enforcement and ethical reporting infrastructure.

Internal Controls and Processes for Ethical Conduct

Heveapac employs documented internal controls to structure its compliance efforts. Assurance over the adequacy and effectiveness of the risk management and internal control framework for the entire Group, which includes Heveapac, is provided by the Audit Committee ("AC") of Heveaboard.

This AC assists the Heveaboard Board of Directors in overseeing the financial reporting, internal control, and risk management systems for the Group. The internal audit function, which assesses the effectiveness of risk management and internal control, is outsourced to an independent internal audit consulting firm by Heveaboard.

Operationally, Heveapac commits to a "systematic approach to HSE management system designed to ensure compliance with the requirement of Occupational Safety and Health Act 1994 (Act 514)".

Regarding ethical conduct, the Anti-Corruption policy functions as a mandatory manual. Staff are required to adhere to the requirements of the manual and understand their obligations under anti-bribery legislation.

Furthermore, employees are specifically instructed to protect the company's assets, both tangible (equipment, buildings, funds) and intangible (intellectual property, trade secrets, and confidential information). This explicitly links ethical conduct to the protection of financially material assets.

Governance Mapping: Heveapac's Processes and Controls

The table below maps our established internal mechanisms to the key Governance Material Matters

Governance Material Matters	Heveapac Policy/Process Reference	Policy Mechanism
Governance processes, controls, and procedures used to monitor and oversee risks	Anti-Corruption Policy, Heveaboard AC and Internal Audit Function	Mandatory guidelines and reporting to Management / HR; Group level oversight of risk management and internal control is outsourced to Heveaboard's Audit Committee and Internal Audit function.
Management approach to sustainability risks and opportunities (Strategy)	HSE Policy (Systematic HSE management)	Continuous commitment to providing a safe and healthy environment; systematic approach to HSE management system for legal compliance.
Value chain scope in relation to risks	Anti-Corruption Policy, Prohibition of Discrimination Policy	Explicit application to Board, Bocowood contract employees, stakeholders, suppliers, clients, consultants, interns, and all third parties.

Anti-Corruption and Business Ethics

Heveapac's strategy for managing economic and reputational risks is built upon a philosophy of **zero tolerance for corruption**, applied consistently across its entire extended value chain. The ongoing review of the Group's risk management system is performed periodically through the Heveaboard's AC to ensure the entire Group remains efficient and capable of achieving its strategic goals and objectives.

Identifying and Assessing Anti Corruption Risks

Our risk identification process is legally anchored in compliance with the MACC Act 2009. We define bribery broadly as the offer, gift, or acceptance of favours, cash, or gifts intended to influence a business decision. The potential risk scope is comprehensive, covering internal personnel (i.e. employees), external government officials, private individuals, and indirect exposure through third parties, including joint ventures, suppliers, clients, consultants, and all other third parties acting on behalf of Heveapac.

Our strategy is focused on mitigating financial impact, evidenced by the explicit mandate to protect core financially material assets such as company funds, intellectual properties, trade secrets, and confidential information, all of which are directly threatened by corrupt practices.



The policy's application to "all third parties acting on behalf of Heveapac," specifically including suppliers and clients, is a critical strategic measure for risk mitigation. This helps ensure that liability is mandated upstream and downstream by implementing explicit contract termination clauses for third party corruption violations, we also reduce the likelihood of financial penalties and operational disruption.

Policy Controls for Mitigation and Prevention

We employ specific controls to prevent unethical conduct. The policy clearly prohibits the acceptance of bribes, defined as money or promises made to influence judgment or conduct, and kickbacks/commission, defined as payments received in return for influence or control over a business transaction.

To address common business courtesies, the policy includes a detailed gift and gratuity protocol. Employees are prohibited from offering or accepting items that are illegal, inappropriate, cash or cash equivalents, loans, personal services, or gifts/gratuities linked to "important business decisions during sensitive decision periods". The policy also bans any form of payment offered as an alternative to gifts, meals, lodging, entertainment, or travel expenses, removing ambiguity in everyday business interactions.

Enforcement Strategy and Consequences

Management views any breach of the code of conduct as a "serious violation" of Heveapac policies and procedures. This zero-tolerance approach is backed by decisive enforcement consequences:

1. **Employees:** If a *prima facie* case is presented against a Heveapac employee (including Board members, contract employees, and interns), their service will be terminated immediately after inquiry with 24 hours' written notice.
2. **Third Parties:** Any violation by suppliers, consultants, or other third parties can result in disciplinary action up to and including termination of the agreement/contract with Heveapac.

Cybersecurity & Digitalisation

At Heveapac, we are committed to enhancing cybersecurity, Information Technology (“IT”) infrastructure and digitalisation efforts across our business operations to drive secure innovation and strengthen risk management capabilities, without compromising stakeholder value across our digital ecosystem.

In today’s rapidly evolving digital landscape, cyberattacks are becoming increasingly sophisticated through ransomware, Artificial Intelligence and social engineering, creating significant challenges in security breach prevention.

The growing complexity of threats targeting operational data, proprietary technologies and supply chain transactions could disrupt operations and undermine stakeholder trust, leading to legal, financial and data privacy repercussions.

We are committed to strengthening our cybersecurity framework by investing in advanced technologies and robust defence systems. This will ensure we can keep expanding our digital capabilities without compromising the safety of data privacy, information and assets. Our enhanced cyber maturity and adherence to the Personal Data Protection Act and General Data Protection Regulation safeguard our position as a trusted Ready-To-Assemble furniture provider while protecting our digitally integrated systems from cyberattacks, information leakage and security breaches.



- Zero substantiated complaints concerning breaches of customer privacy and losses of customer data in last 5 years.
- Zero identified leaks, thefts or losses of customer data in last 5 years.
- Zero cyber incidents recorded that led to breaches (very high and high severity) recorded in last 5 years.
- Zero business critical system downtime in last 5 years.

CYBERSECURITY MEASURES USED TO STRENGTHEN HEVEAPAC'S IT SECURITY POSTURE

Annual Online Cybersecurity Training	▶ Ensures all users complete mandatory cybersecurity training video ▶ Aims for full compliance among designated employees
Virtual Private Network ("VPN")	▶ Adds a layer of protection for secure system access ▶ Safeguards against unauthorised remote logins
Antivirus/Malware Zero-Day	▶ Deploys advanced antivirus tools to combat emerging malware threats ▶ Protects systems against zero-day vulnerabilities
Active Network Monitoring	▶ Provides continuous, real-time monitoring to detect anomalies ▶ Enables swift responses to suspicious network activities
90-Day Password Change Policy	▶ Enforces password updates every 90 days with stricter complexity rules ▶ Strengthens account security through regular credential refreshing
Minimised Administrative Account Access	▶ Limits privileged access to critical systems to authorised personnel ▶ Reduces risks associated with unauthorised system changes
Increased Restrictions on Vendor Access	▶ Tightens third-party access controls to safeguard operations ▶ Ensures external partners meet required security standards
Blocked Universal Serial Bus ("USB") Access	▶ Restricts USB usage to prevent external threats and data breaches ▶ Controls unapproved external device connections

GHG EMISSION OVERVIEW



Total CO2 EMISSIONS

SCOPE 1

700.57 tCO₂e

SCOPE 2

10,559.67 tCO₂e



Solar Avoidance : 1,454.02 tCO₂e

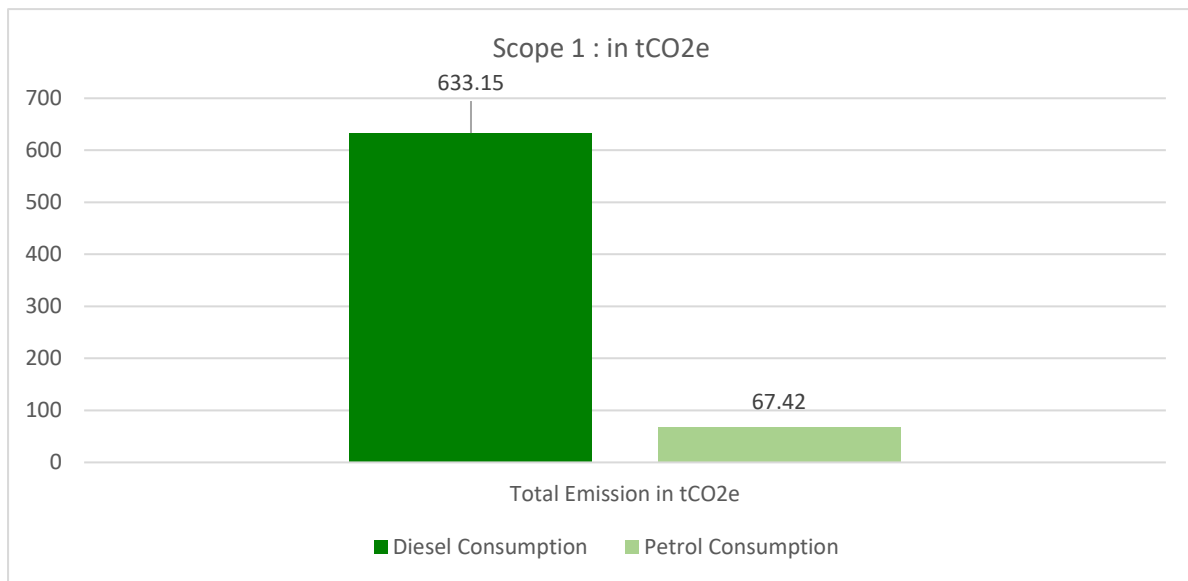
Net Scope 2 Emissions (After Solar): 9,105.65 tCO₂e

SCOPE 3

20,954.73 tCO₂e



Scope 1: Direct Emissions



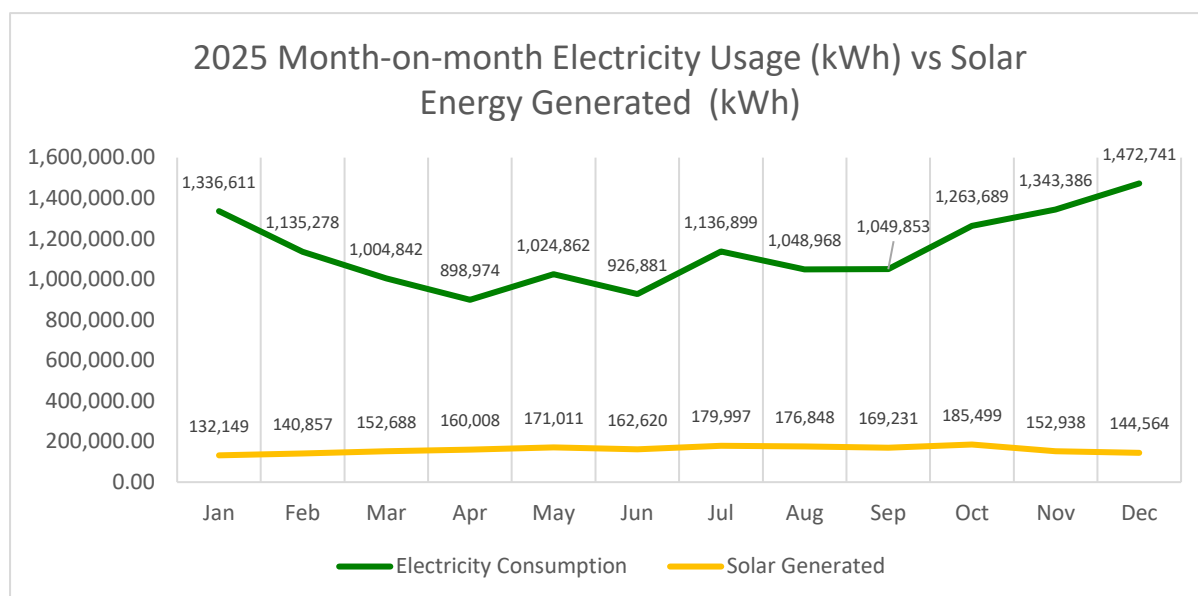
	Total Consumption (in litres)	Total emissions (tCO ₂ e)
Diesel Consumption	237,886.22	633.15
Petrol Consumption	31,680.76	67.42

For Heveapac direct greenhouse gas (GHG) emissions from mobile combustion sources, categorised under Scope 1, for the reporting period of January 1, 2025, to December 31, 2025. Total fuel consumption from the fleet of company owned vehicles was 269,566.98 litres. This comprised 237,886.22 litres of diesel, resulting in 633.15 tonnes of CO₂ equivalent ("tCO₂e"), and 31,680.76 litres of petrol, resulting in 67.42 tCO₂e. The diesel consumption is attributed to seven lorries for external logistics, two lorries for internal logistics, and the main skip tank which serves as the fuel repository for the factory's many forklifts.

Conversion rate for diesel and petrol is based on UK Government GHG Conversion Factors for Company Reporting by DEFRA.



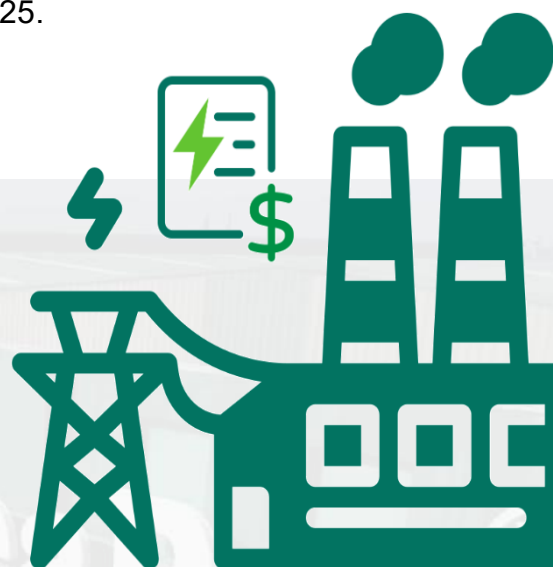
Scope 2: Indirect Emissions from Purchased Energy



	Total Electricity (in kWh)	Total emissions in tCO ₂ e
Electricity Consumption	13,642,984.00	10,559.67
	Total Electricity (in kWh)	Total Solar Avoidance in tCO ₂ e
Solar Generated	1,928,408.40	1,454.02

Heveapac's energy consumption and associated Scope 2 GHG emissions for the period of January 1, 2025, to December 31, 2025.

During this time, the total electricity purchased from the grid was 13,642,984.00 kilowatt-hour ("kWh"), resulting in 10,559.67 tCO₂e. Concurrently, our on-site solar PV system generated 1,928,408.40 kWh of renewable electricity, which represents an equivalent of 13.77% of the grid energy consumed. This on-site generation successfully prevented 1,454.02 tCO₂e emissions that would have otherwise been created.



Note: Scope 2 Grid Emission Factors for peninsular Malaysia is 0.774 and for East Malaysia is 0.525.

Source: <https://meih.st.gov.my/documents/10620/cdddb88f-aaa5-4e1a-9557-e5f4d779906b>

Scope 3.4

Upstream Transportation and Distribution



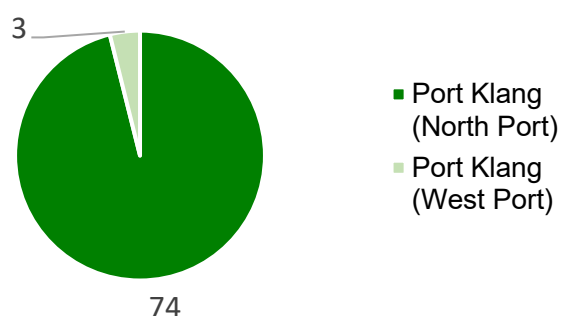
Scope 3.4.1

Upstream Transportation and Distribution By Sea

For the year 2025, the frequency of deliveries to Port Klang (West Port / North Port) varies significantly across the ports of origin. The total number of deliveries in 2025 across all ports of origin is 79 shipments, collectively resulting in 31.86 tCO₂e. The most frequent shipments come from Shekou, China, with 48 deliveries, followed by Kaoh Siung, Taiwan, with 11 deliveries. Other ports, such as Ho Chi Minh (Vietnam), Osaka (Japan), and Shanghai (China), have considerably fewer shipments, with frequencies of 9, 3, and 4, respectively.

Port of Origin	Port of Discharge	Frequency of delivery in 2025	Total tCO ₂ e
Ho Chi Minh, Vietnam	Port Klang (WP/NP)	9	1.37
Kaoh Siung, Taiwan	Port Klang (WP/NP)	11	2.78
Kobe, Japan	Port Klang (WP/NP)	1	0.04
Osaka, Japan	Port Klang (WP/NP)	3	0.79
Shanghai, China	Port Klang (WP/NP)	4	1.49
Shekou, China	Port Klang (WP/NP)	48	23.41
Others	Port Klang (WP/NP)	2	1.98
Total		79	31.86

Upstream Transportation and Distribution by Sea to Port of Discharge Frequency 2025



Note: Emission Factor for DEFRA Bulk Carrier 10,000–34,999 dwt per tonne per km (in kg/CO₂e) is based on UK Government GHG Conversion Factors for Company Reporting by DEFRA. Methodology, judgements and assumptions are further explained under “Methodology, Judgements, and Assumptions”.

Scope 3.4.2

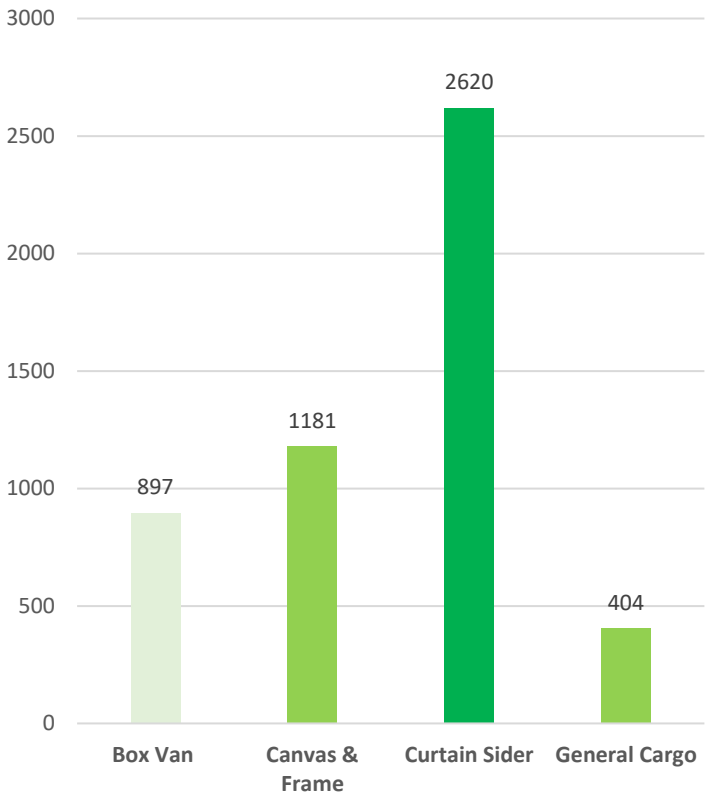
Upstream Transportation and Distribution By Land

For the year 2025, Total upstream land transportation-related carbon dioxide emissions were 5,489.13 tCO₂e. The Canvas & Frame vehicle type represented the most significant contributor to the total distance travelled, at 472,057.30 kilometres, which resulted in 3,626.21 tCO₂e.

Type of Upstream Land Transportation	Total Distance (km)	Total tCO ₂ e
Box Van	48,900.70	155.92
Canvas & Frame	472,057.30	3,626.21
Curtain Sider	261,620.90	1,532.68
General Cargo	37,052.50	174.33
Grand Total	819,631.40	5,489.13

Note: Emission Factor for DEFRA Van, Average laden, up to 3.5 tonnes, HGV Rigid (>3.5 - 7.5 tonnes) 50% laden, HGV Rigid (>7.5 - 17 tonnes) 50% laden, HGV Rigid (> 17 tonnes) 50% laden, all in per tonne per km (in kg/CO₂e) is based on UK Government GHG Conversion Factors for Company Reporting by DEFRA. Methodology, judgements and assumptions are further explained under “Upstream and Downstream Land Transport Emissions”.

Frequency of Usage (by trips) by Type of Upstream Land Transportation



Scope 3.5: Waste from Operations



WASTE TO LANDFILL

General Waste	Weight in Tonnes
General Waste (Canteen/Hostel)	543 tonnes
General Waste (Production)	225 tonnes



WASTE RECYCLED/REUSED

Type of Waste	Weight in Tonnes
Plastic	951 tonnes
Metal	66 tonnes
Kotak (Boxes)	372 tonnes
Wood Dust	1974 tonnes
Offcut	3150 tonnes

Our operations generated waste from various streams, which were managed through landfill disposal, recycling, and specialized treatment for hazardous materials. A total of 768 tonnes of general waste was directed to landfill. This comprised 543 tonnes of general waste originating from canteen and hostel facilities, alongside 225 tonnes of general waste from production activities.

Significant progress was achieved in our waste recycling and reuse initiatives, diverting a total of 6,513 tonnes of material from landfill. This included 951 tonnes of plastic, 66 tonnes of metal, 372 tonnes of cardboard boxes (Kotak), 1,974 tonnes of wood dust, and 3,150 tonnes of production offcut materials. These materials were successfully reintegrated into the production cycle or processed by authorized recycling partners, contributing to a circular economy.



SCHEDULED WASTE SENT TO LICENSED RECYCLING FACILITY

Scheduled waste	Weight in Kilograms
SW305	1400kg
SW401	0kg
SW417	3619kg
SW409	2431kg
SW410	8445kg
SW422	131kg

Regarding scheduled waste, which is classified as hazardous, all designated materials were managed in strict compliance with environmental regulations and sent to licensed recycling facilities for proper treatment and disposal. Based on the updated annual records, the total quantity of scheduled waste handled reached 16,026 kilograms. The specific quantities handled were as follows: SW410 at 8,445 kilograms, SW417 at 3,619 kilograms, SW409 at 2,431 kilograms, SW305 at 1,400 kilograms, and SW422 at 131 kilograms. It is confirmed that no waste under the code SW401 was generated during this reporting period. Our management of scheduled waste underscores our commitment to mitigating environmental and health impacts through responsible stewardship throughout the waste lifecycle.



Scope 3.6: Business Travel

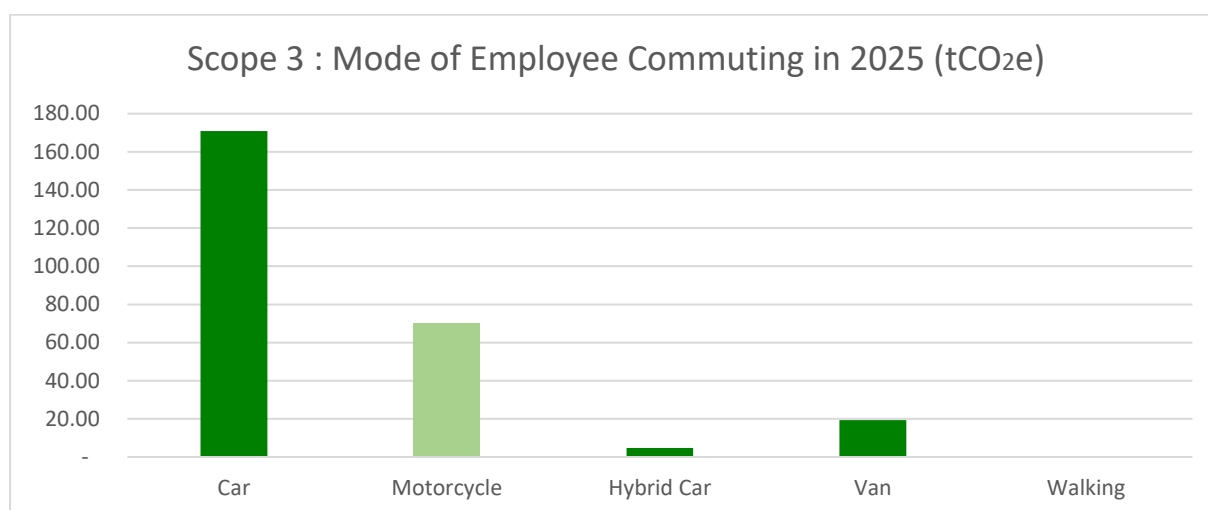


	Number of round-trip flights	Total emissions (Total kgCO ₂ e)
2025	9	4,038

Source: International Civil Aviation Organisation, www.icao.int

In 2025, we recorded a total of nine round-trip flights, resulting in a calculated 4,038 kgCO₂e emissions for all 9 journeys. We are committed to monitoring and reporting our travel-related emissions as part of our ongoing efforts to minimise our environmental impact.

Scope 3.7: Employee Commuting



Method of transport	Total distance (in km) travelled by employees	Total emissions (tCO ₂ e)
Car	1,039,056.20	170.92
Motorcycle	616,785.40	70.11
Van	109,015.54	19.35
Hybrid Car	37,848.00	4.77
Walking	On-site Dormitory	-
Grand Total	1,802,705.14	265.16

During the reporting period, our employees travelled a grand total of 1,802,705.14 km for their daily commute, leading to a combined emission of 265.16 tCO₂e. A detailed breakdown reveals that the majority of this impact originated from car travel, which accounted for 1,039,056.20 km and produced 170.92 tCO₂e. Travel by motorcycle covered a distance of 616,785.40 kilometres, contributing 70.11 tCO₂e to the total. The use of vans resulted in 19.35 tCO₂e from 109,015.54 km travelled, while hybrid car usage accounted for 37,848.00 km and produced 4.77 tCO₂e. We also recognise employees housed in the dormitories on factory site as walking as a mode of transport, which produced no direct emissions.

Conversion rate for diesel and petrol is based on UK Government GHG Conversion Factors for Company Reporting by DEFRA. Values are based on average sizes for each corresponding vehicle. For Van, the factor of diesel MPV is used however taking into consideration that each employee commuting may also share the same van with other van commuters, an assumption of at least 7 passengers share the same van commuting, leading to an overestimation of distance travelled. Hence the distance travelled is adjusted to offset this overestimation.

Scope 3.9

Downstream Transportation and Distribution



Shipping Liner Company	Frequency of Usage
WAN HAI	1839
ONE	1047
OOCL	266
CMA CGM	186
HEUNG A	185
INTERASIA	151
EVERGREEN	121
MSC	68
ANL	57
HAPAG-LLOYD	46
NAMSUNG	38
MAERSK	36
SITC	36
YANG MING	35
COSCO	13
SEALEAD	12
KMTC	11
KARTEN	8
SINOKOR	8
TASCO	6
EMIRATES SHIPPING	4
FMC	4
CNC	3
HMM	2
KAHEY SEA	2
NEW STAR	2
VISTAR SHIPPING	2
CORTEN SHIPPING	1

Scope 3.9.1

Deliveries by Sea

Heveapac's indirect greenhouse gas emissions from downstream transportation and distribution, classified under Scope 3 Category 3.9, totalled 2,641.49 tCO₂e. These emissions are attributed to cargo transportation services procured from a portfolio of close to thirty shipping liner companies. The primary contributors to this footprint were WAN HAI with 946.67 tCO₂e, ONE with 640.66 tCO₂e, and OOCL with 175.11 tCO₂e. The total cargo weight associated with these emissions was 48,565.27 tonnes, which was transported across a total of 4,189 separate shipping instances. Bocowood division contributed to up to 2.03 tCO₂e.

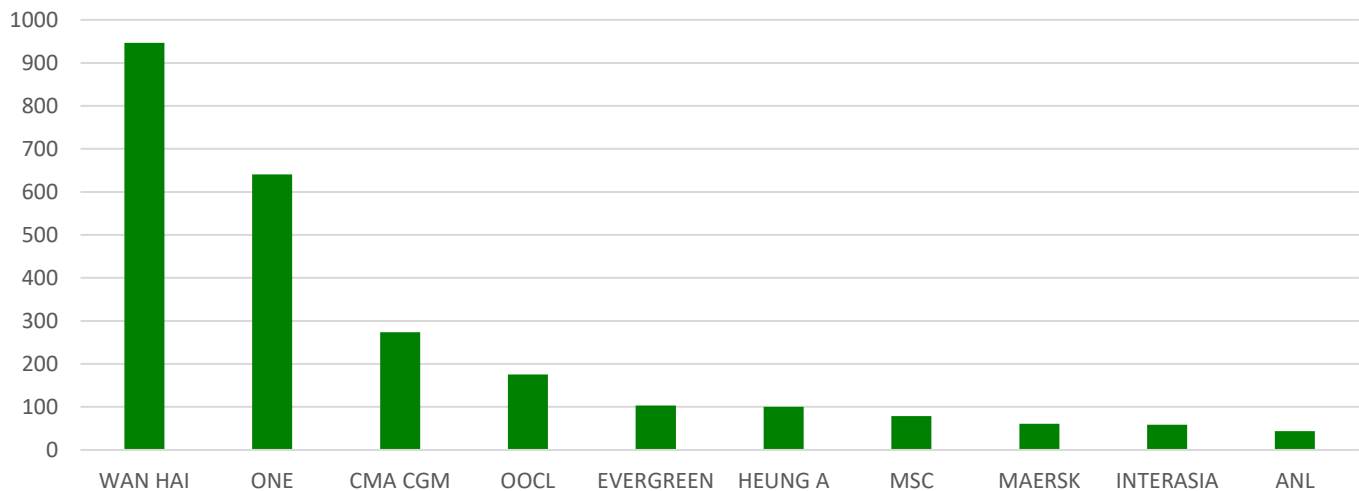
BOCOWOOD Division Downstream Sea Emissions

Port of Discharge	Total emissions(tCO ₂ e)
Kuching x 4 Trips	1.22
Miri x 4 Trips	0.69
Bintulu x 1 Trip	0.12
Total	2.03

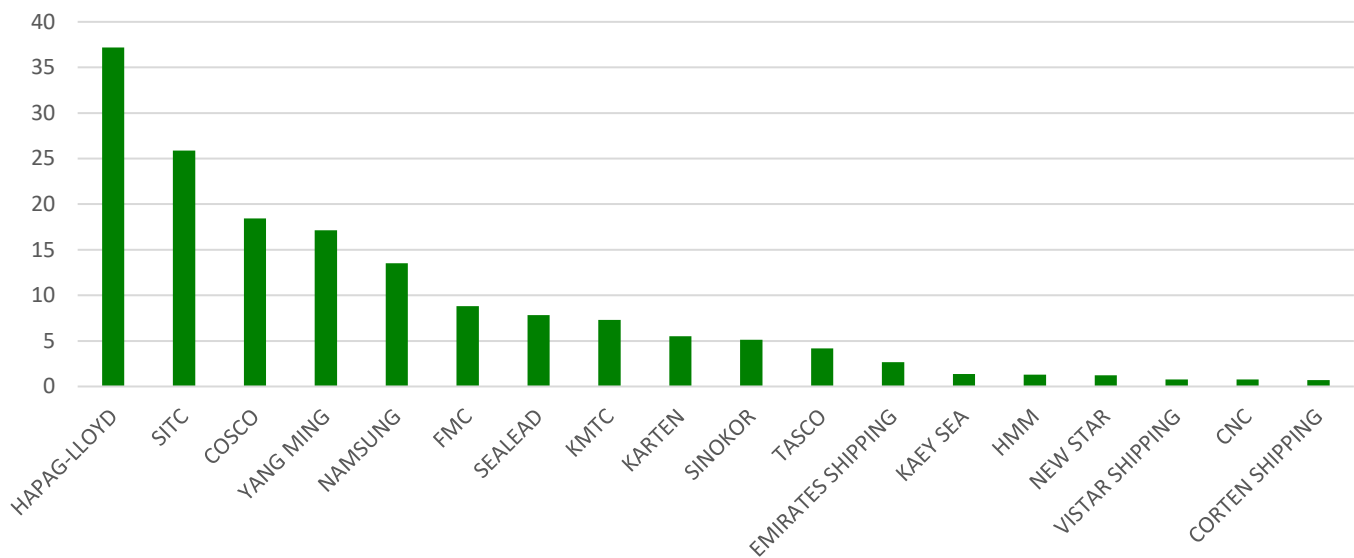
Scope 3.9.1

Deliveries by Sea

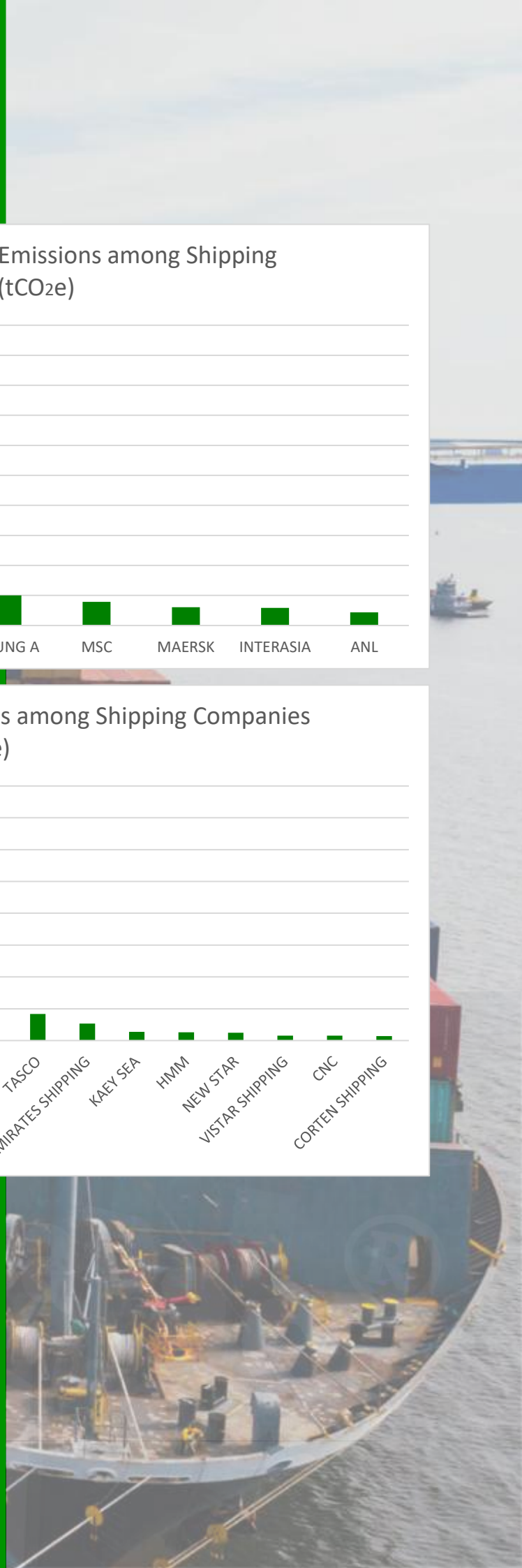
Top Ten Largest Contributors of CO₂e Emissions among Shipping Companies 2025 (tCO₂e)



Remaining Contributors of CO₂ Emissions among Shipping Companies 2025 (tCO₂e)



Note: Emission Factor for DEFRA Bulk Carrier 10,000–34,999 dwt per tonne per km (in kg/CO₂e) is based on UK Government GHG Conversion Factors for Company Reporting by DEFRA. Methodology, judgements and assumptions are further explained under “Methodology, Judgements, and Assumptions”.



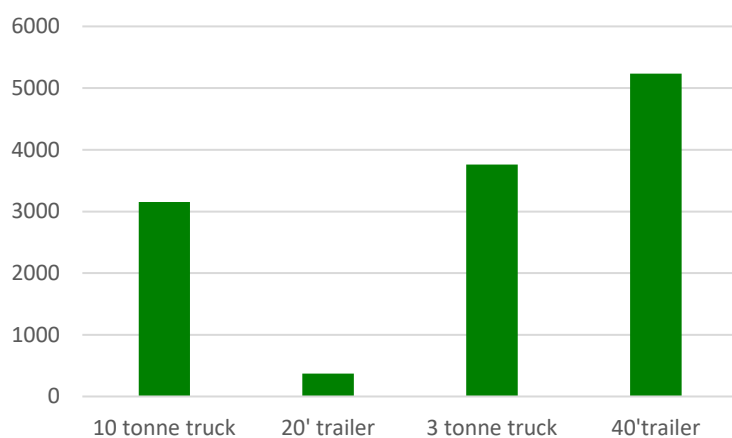
Scope 3.9.2

Deliveries by Land

The total emissions from downstream transportation by land amounts to 12,523.05 tCO₂e. The largest contributor was transport via 40-foot trailers, which emitted 5,234.08 tCO₂e. Emissions from 3-tonne trucks totalled 3,761.53 tCO₂e, while 10-tonne trucks accounted for 3,155.46 tCO₂e. Transport utilising 20-foot trailers resulted in 371.99 tCO₂e. These emissions are directly linked to the distribution of the company's goods across a total cargo weight of 50,016.65 tonnes.

Note: Emission Factor for DEFRA for various land vehicles (in kg/CO₂e) is based on UK Government GHG Conversion Factors for Company Reporting by DEFRA. Methodology, judgements and assumptions are further explained under "Methodology, Judgements, and Assumptions".

Scope 3.9.2 - Total cargo delivered by Land Vehicle Type (in tons)



Scope 3.9.2 - Total emissions (tCO₂e) by Land Vehicle Type





A COLLECTIVE COMMITMENT TO SAFETY



Health, Safety, and Environment Risk Management

At Heveapac, we believe a competent and risk-aware workforce is the cornerstone of a safe and productive workplace. Our 2025 training calendar was not a mere checklist but a strategic initiative designed to directly address the specific hazards identified through our Hazard Identification, Risk Assessment, and Risk Control (“HIRARC”) process.

We are committed to a continuous improvement model for safety. Our policy outlines a commitment to having a systematic approach to its HSE management system designed to ensure compliance with Act 514 Occupational Safety and Health Act 1994. Continuous improvement is pursued through proactive accident prevention.



Specific provisions ensure a safe and healthy environment. This includes providing a safe and hygienic working environment, minimising hazards, providing regular and recorded health and safety training for all workers (including new and reassigned staff), and ensuring access to basic clean facilities (toilet facilities, potable water, and sanitary facilities for food storage). Where accommodation is provided, it must be clean, safe, and meet the workers' basic needs.



Below some of the initiative that have been implemented through this policy thus far:

Practical Sanitation and Fire Prevention Measures

The physical implementation of these safety standards is evidenced by the presence of clearly marked waste disposal stations within the facility. These stations utilise color-coded bins to facilitate proper waste segregation, supported by instructional signage in multiple languages to ensure comprehension across a diverse workforce. This visual management system serves as a practical application of the company's commitment to a hygienic and organised environment, reducing risks associated with improper waste handling while reinforcing the "No Smoking" and "No Littering" policies.



Promoting a Safe and Regulated Smoking Environment

Our commitment to a safe and hygienic working environment extends to the management of designated outdoor areas, such as the smoking zones provided for our workforce. To minimise fire hazards and ensure the premises remain clean, we have established specific disposal points for cigarette butts, clearly marked with instructional signage and visual aids.

These designated areas are part of our broader effort to provide a systematic approach to workplace safety, ensuring that all aspects of the facility from the production floors to outdoor rest areas, remain orderly and safe for everyone.



Ensuring Access to Clean Facilities and Safe Drinking Water

Our dedication to a systematic HSE management system is clearly reflected in the provision of high-standard sanitary facilities for our workforce. We provide dedicated drinking water stations that are clearly labelled to ensure easy access to potable water throughout the day. These stations are maintained for hygiene and include instructional signage to prevent misuse, such as hand-washing in drinking troughs, which helps minimise cross-contamination and health hazards. This infrastructure is a key part of our commitment to maintaining a safe and healthy working environment that meets the basic needs of all staff.



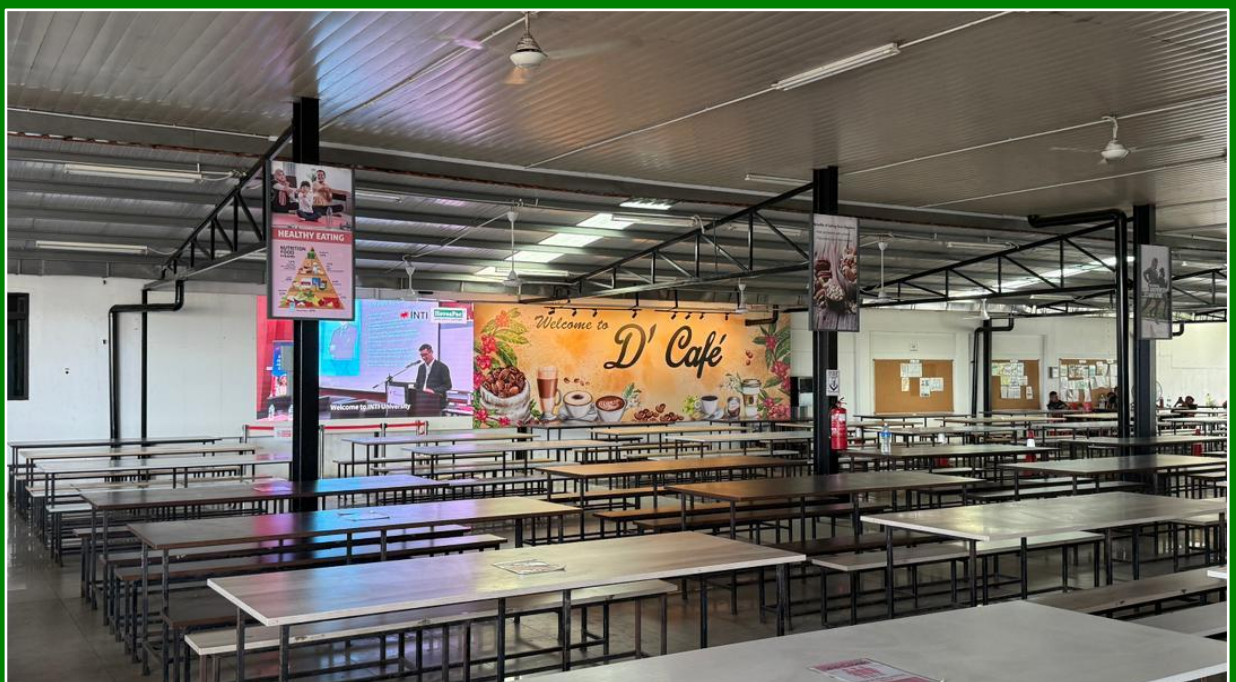
Workplace Welfare and Safe and Easy Access to Money

To further promote welfare, we have integrated essential services like self-banking kiosks within these communal areas, accompanied by dedicated recycling points for paper waste to maintain general order and cleanliness.



Integration of Welfare Facilities and Workplace Safety

A core component of our systematic approach to HSE management is ensuring that all employees have access to basic clean and safe facilities that meet their daily needs while minimising potential health hazards. This commitment is exemplified by the provision of organised eating areas, such as the D' Café, which offers a spacious and hygienic environment for staff to consume food and rest. These areas are kept orderly and well-ventilated to prevent the accumulation of waste and ensure a pleasant atmosphere, aligning with our policy of providing sanitary facilities for food storage and consumption.



Promoting Hazard Awareness through Visual Safety Controls

Our commitment to a risk-aware workforce is physically integrated into the warehouse through high-visibility visual controls and structural safeguards. Support pillars are painted in high-contrast safety colours to mark the location of essential fire extinguishers and emergency communication equipment, ensuring rapid response during an incident.

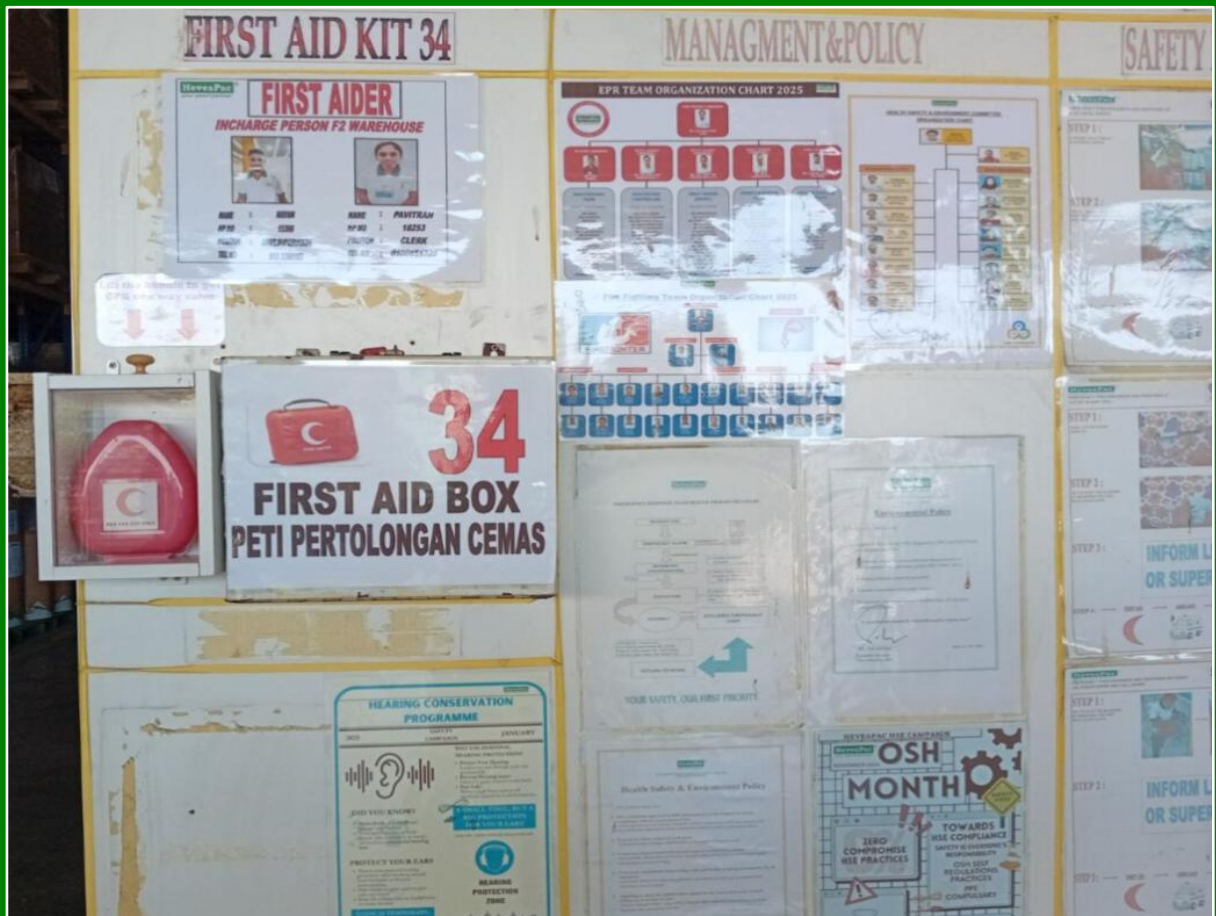
To address hazards identified in our HIRARC process, we utilise physical guardrails to separate pedestrian walkways from heavy machinery, reinforced by "Watch for Forklift" signage that provides constant safety reminders in high-traffic areas. These proactive measures ensure that industrial risks are minimised through clear, systematic reinforcement of safety protocols on the production floor.



Promoting Emergency Preparedness and Regulatory Compliance

Our commitment to maintaining a systematic HSE management system is clearly demonstrated through our centralised safety communication boards, which ensure all workers are informed of critical protocols. We provide high-visibility first aid stations, which are clearly labelled and include identifying photographs of trained First Aiders to ensure immediate assistance during emergencies. This infrastructure is supported by detailed information on our Emergency Preparedness and Response (EPR) Team organisation and Fire Fighting Teams for 2025, ensuring a structured approach to incident management.

To maintain continuous improvement in accident prevention, these boards also display our core HSE policies and specialised health initiatives, such as the Hearing Conservation Programme. By showcasing our Environmental Policy and specific OSH Month campaigns, we foster a risk-aware culture that prioritises zero-compromise safety practices. These recorded health and safety instructions bridge the gap between policy and practice, ensuring our workforce is competent, compliant with the Occupational Safety and Health Act 1994, and prepared for any workplace hazards identified through our HIRARC process.



We diligently track our performance to drive continuous improvement, and our lost-time incident rate over the last three years stands at 2.42 in FY2023, 3.03 in FY2024 and **3.87 for FY2025**. Thus far there have been **zero incidences** of cases of fatalities in FY 2025.



HEALTH AND SAFETY	UNIT	FY 2025	FY 2024	FY 2023
Number of work-related fatalities	Number	0	0	1
Lost time incident rate ("LTIR")	Rate	3.87	3.03	2.42
Number of employees trained on health and safety standards	Number	1199*	N/A	N/A



Recognising the diverse risks within our particleboard manufacturing operations especially from machinery operation and chemical handling to noise exposure and emergency situations, our management has been committed to implemented a multi-layered training approach. This approach ensures that every employee receives foundational safety knowledge, while specialised teams are equipped with advanced, certified skills for high-risk tasks.

This is done to foster a proactive and vigilant safety culture, we ensure our workforce is well-informed and competent; within the last year, **1,199** staff members, representing **67.40%** of our total workforce, were trained on our health and safety standards.

* Number of workers trained on health and safety is derived from the sum total number of participants from each training, measures are taken to reduce the chance of duplication in counting, however it remains as a reasonable estimate.

OHSA Induction Training

We organise and conduct OHSA-related training at both the office business division and factory business divisions levels. In 2025, we continued to refine and update our OSHA induction course, which is mandatory for all employees. All existing and new staff are required to complete the course, covering OHSE-related topics such as the responsibilities of employers and employees, hazard and risk identification and incident reporting.

Hearing Conservation Programme (Management & Employee)

We organise and conduct OHSA-related training at both the office business division a and factory business divisions levels. In 2025, we continued to refine and update our OSHA induction course, which is mandatory for all employees. All existing and new staff are required to complete the course, covering OHSE related topics such as the responsibilities of employers and employees, hazard and risk identification and incident reporting.



Security Guard SOP Training

This session was specifically for our security team to standardise and reinforce their Standard Operating Procedures (SOPs).

The training covered crucial duties such as access control for employees and visitors, vehicle inspections, patrolling techniques, and, most importantly, their role as first responders during an emergency. They received instruction on incident reporting, managing evacuations, and coordinating with external emergency services like the Fire and Rescue Department of Malaysia (BOMBA), ensuring our facility's first line of defence is competent and prepared.

Sexual Harassment Training in the Workplace

This program for over 30 employees was aimed at fostering a safe, respectful, and inclusive workplace culture. The training provided a clear definition of what constitutes sexual harassment, educated employees on their rights and responsibilities under the Malaysian Employment Act, and detailed Heveapac's internal policy and reporting channels. The goal was to empower employees to identify and report inappropriate behaviour and to assure them of a confidential and fair investigation process, thereby addressing psychosocial risks in the workplace.

Fire Fighting Team Training

This practical training was delivered to all our in-house Fire Fighting Team. In a high-risk environment with combustible wood dust and materials, this team is crucial for immediate incident response. The training covered the theory of the fire triangle, different classes of fire, and hands-on practice using various types of fire extinguishers and fire hose reels on controlled fires. This ensures the team can confidently and effectively contain a small fire before it escalates, protecting both life and property.

Electrical Safety Training

Aimed at a specialised group of 6 maintenance personnel, this intensive 2-day course provided in-depth knowledge of electrical hazards. The training covered the principles of electrical safety, recognising potential dangers, emergency procedures for electrical shock, and other critical procedures before commencing any maintenance on machinery.

Internal Lorry Driver Safe Driving Training

This targeted session for our internal lorry drivers focused on promoting defensive driving techniques within the factory premises. The training emphasised site-specific hazards such as pedestrian crossings, intersections with forklift traffic, and designated speed limits. The objective was to reinforce safe vehicle operation, reduce the risk of on-site collisions, and ensure the safe transport of raw materials and finished goods.

Certified First Aid Training

To ensure immediate and competent medical assistance is available at all times, we provided a full-day Certified First Aid course to over 30 employees, split into two teams over two days. This comprehensive training, conducted by a certified body, equipped participants with the skills to handle a wide range of medical emergencies, including CPR, wound management, fracture stabilisation, and response to chemical exposure, until professional medical help arrives.

Scheduled Waste Management Training

Targeted at over 20 employees directly involved in handling production by-products and maintenance waste, this training focused on environmental compliance and safety. Participants were trained on the proper identification, segregation, labelling, storage, and disposal of scheduled wastes as stipulated by the Environmental Quality (Scheduled Wastes) Regulations 2005. Key topics included handling chemical-contaminated materials, used oils, and other hazardous by-products from the particleboard manufacturing process, ensuring Heveapac prevents illegal dumping.





Chemical Safety Handling Training

Given the extensive use of resins and other chemicals in particleboard production, this training for production and maintenance employees was critical. The session focused on the Safe Use of Hazardous Chemicals (“USECHH”) Regulations 2000. Participants learned how to interpret Safety Data Sheets (“SDS”), understand the health risks of chemicals, use appropriate Personal Protective Equipment (“PPE”), and apply correct procedures for handling, storing, and cleaning up chemical spills. This practical training directly mitigates the risk of acute and chronic health effects from chemical exposure.



PPE, Safe Work Procedure (SWP) & HIRARC Training

This foundational session for over 20 employees served as a core component of our OHS management system. It covered three integrated topics: the correct selection, use, and maintenance of Personal Protective Equipment; the development and application of Safe Work Procedures for specific tasks; and the principles of Hazard Identification, Risk Assessment, and Risk Control (“HIRARC”). This training empowers workers to not just follow safety rules but to actively participate in identifying hazards and contributing to safer work methods.



Emergency Preparedness & Response Team Combined with Mock Fire Drill Training

This comprehensive 3-day program for our Emergency Response Team (ERT) was an immersive exercise in crisis management. The training went beyond basic firefighting to cover the entire emergency response structure, including roles and responsibilities, evacuation coordination, search and rescue protocols, and communication strategies. The program culminated in a full-scale mock fire drill, testing the team's practical skills and the effectiveness of the site's overall emergency plan in a simulated, high-pressure environment.



Machinery Safety & Permit-to-Work (PTW) Training

This training for over 20 production and maintenance operators focused on the safe operation and servicing of heavy industrial machinery. Participants were trained on machine guarding principles, emergency stop procedures, and the dangers of moving parts. A key component was the Permit-to-Work system, which is a formal process for ensuring high-risk jobs like confined space entry or hot work are conducted only after all safety precautions have been implemented and verified.



DEVELOPING AN INCLUSIVE, DIVERSE AND EQUAL WORKFORCE



Human Capital and Social Equity

We address material risks related to human capital by strategically adopting comprehensive international labour standards, primarily the ETI Base Code, which governs key areas such as employment practices, wages, safety, and non-discrimination.

Commitment to Core Labor Rights and Modern Slavery Mitigation

We explicitly align our labour strategy with international frameworks. The ETI Base Code provides detailed rules on ensuring labour is freely chosen, prohibiting forced, bonded, or involuntary prison labour. Workers are not required to lodge deposits or identity papers and are free to leave after reasonable notice.

Additionally, our No Child Labour Policy prohibits any employee from being made to work against their will, work as bonded/forced labour, or be subject to corporal punishment or coercion of any type related to work.

Our commitment to eliminate child labour is rigorous. The policy aligns with the Malaysia Employment Act 1955. We prohibit employing any person below the age of eighteen years at the workplace and extend this prohibition to child labour in our supply chain. A system for checking and maintaining age records is mandated upon employment and is open to verification by authorised personnel or statutory bodies.

Fair Compensation and Working Conditions

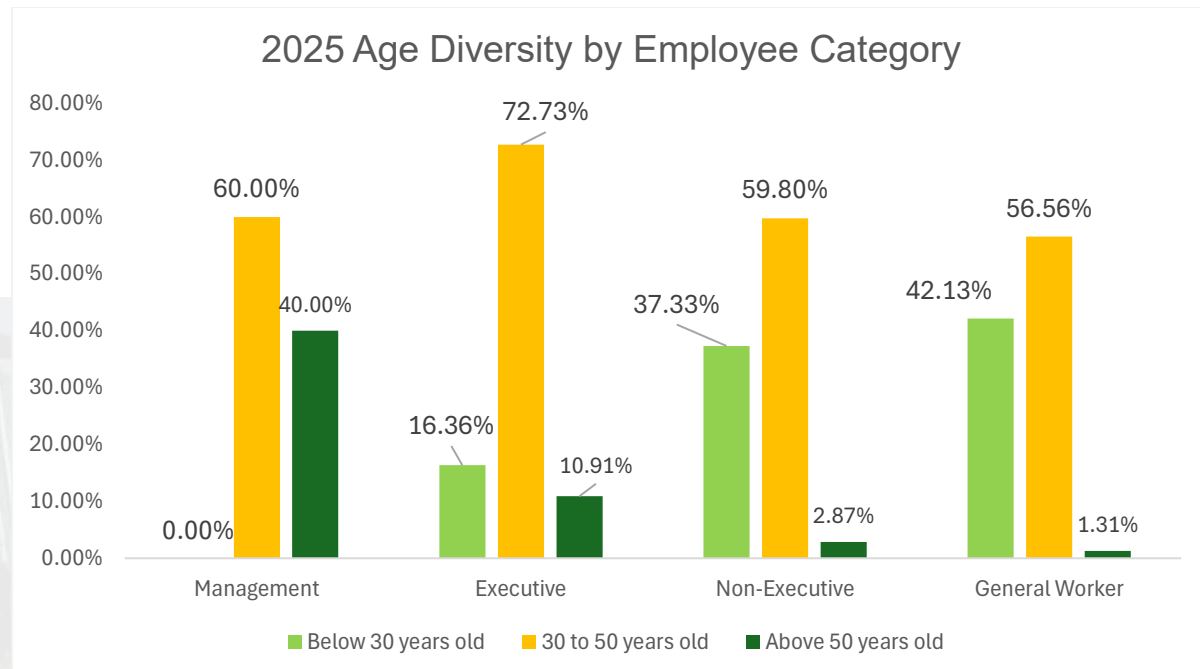
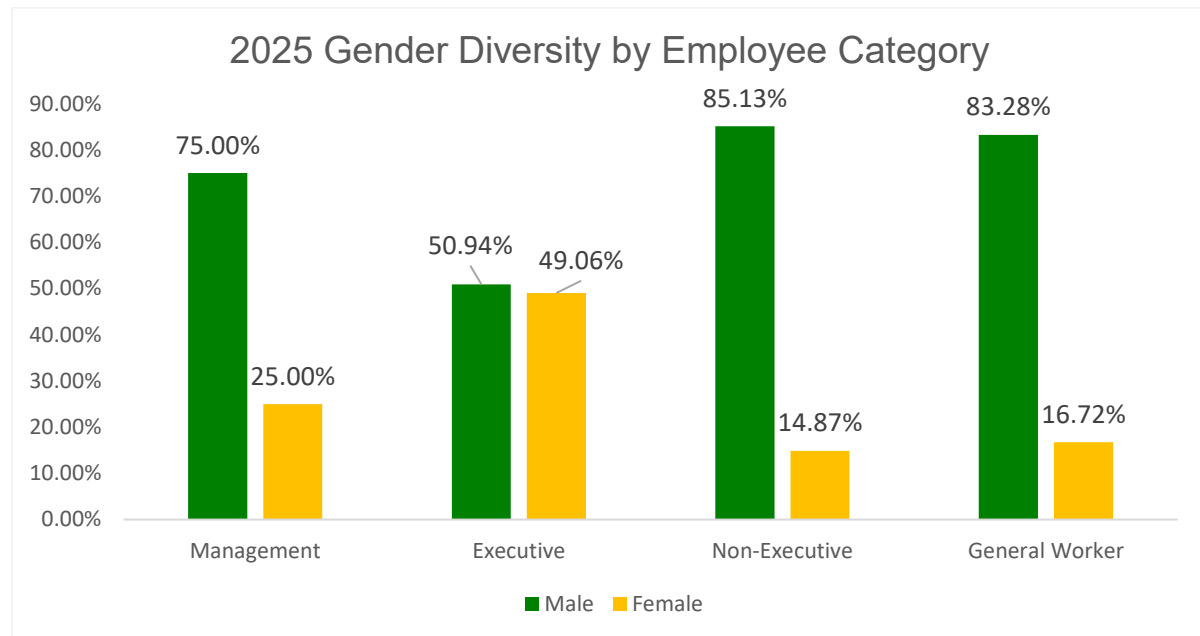
We employ high standards for compensation designed to ensure workforce stability and fairness. The living wage standard requires that wages and benefits paid for a standard working week must meet, at a minimum, national legal standards or industry benchmark standards, whichever is higher. Furthermore, the policy specifies that wages must always be enough to meet basic needs and provide some discretionary income.

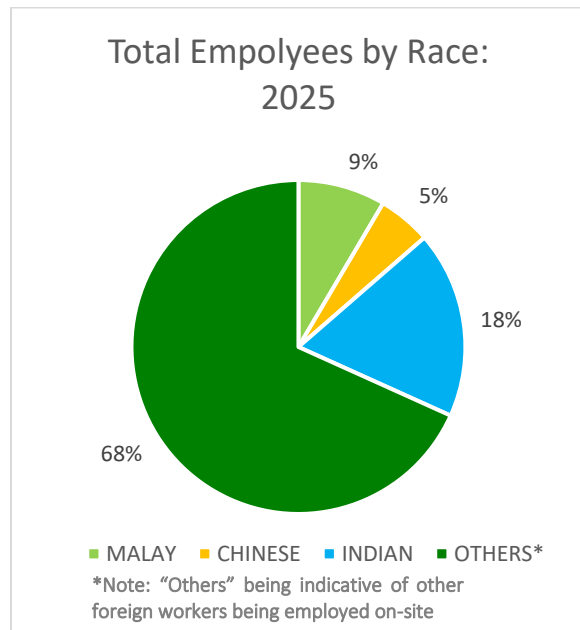
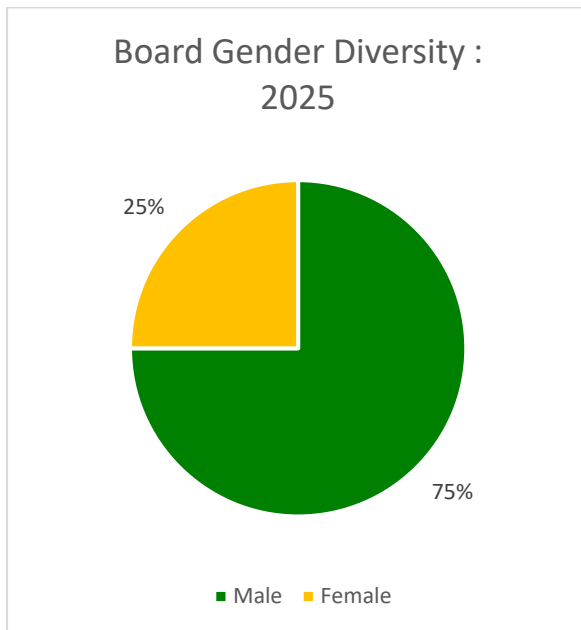
Working hours are strictly controlled. Regular working hours, excluding overtime, are defined by contract and shall not exceed 48 hours per week, with a total maximum of 60 hours worked in any seven-day period (with specific exceptions for emergencies only). All overtime must be voluntary, compensated at a premium rate (recommended to be not less than 125 percent of the regular rate), and not used to replace regular employment. Workers must receive at least one day off in every seven-day period.

Non Discrimination and Grievance Management

We strive for a work environment free from all forms of discrimination, harassment, and inhumane treatment. Our Prohibition of Discrimination Policy applies broadly to all employees, suppliers, contractors, consultants, and visitors. Discrimination is explicitly banned in hiring, compensation, promotion, and termination based on a wide range of protected characteristics, including race, colour, age, gender, sexual orientation, disability, religion, national origin, and union membership.

Employees affected by discriminatory practices are encouraged to file a grievance report. The grievance process is managed confidentially; the company, HR department, management, complainant, and accused are strictly prohibited from discussing the matter with anyone, including other employees, before or after resolution, ensuring integrity and encouraging reporting.





Heveapac is fully in support of equal opportunity for all employees. This overview of the composition of an organisation's employees by category, gender, and age group provides transparency into the organisation's progress toward achieving equal opportunity and diverse representation across its internal hierarchy.

In 2025, the Board Gender Diversity reflects a composition of 75% male and 25% female members. The gender distribution within the organisation reveals a workforce that is predominantly male, particularly in the Management and technical operations categories. In the Management tier, men represent 75.00% of the workforce, while women comprise 25.00%. A more balanced gender distribution is observed at the Executive level, where men and women are represented at 50.94% and 49.06% respectively. However, the proportion of female employees significantly decreases in the Non-Executive (14.87%) and General Worker (16.72%) categories, which are largely occupied by male staff at rates exceeding 83.00%.

Analysis of the age distribution identifies the "30 to 50 years old" demographic as the dominant age group across all employee categories, comprising at least 56.56% of any single tier. In Management, this age group accounts for 60.00% of personnel, with the remaining 40.00% consisting of individuals aged above 50 years.

In contrast, the entry-level and general labour categories show a higher influx of younger talent; individuals below 30 years old make up 42.13% of the General

Worker category and 37.33% of the Non-Executive category. The Executive level maintains a relatively mature profile, with 72.73% of staff aged between 30 and 50 and only 16.36% falling under the age of 30.

For the 2025 reporting period, the organisation's racial composition is heavily represented by the "Others" category, being foreign workers employed on-site, which constitutes 68.00% of the total workforce. The remaining workforce is composed of Indian (18.00%), Malay (9.00%), and Chinese (5.00%) employees.

- Page Left Blank Intentionally-





Heveapac : Climate-Related Financial Disclosures (“TCFD”)

Our Response to Change Climate change presents the furniture industry with profound challenges and significant opportunities, demanding a fundamental shift towards a circular economy. The increasing frequency of extreme weather events and evolving global regulations underscore the urgency of transitioning to sustainable packaging solutions.

As a key player in the Malaysian packaging sector, Heveapac is exposed to climate-related risks. However, we are resilient and committed to strengthening our operations. In alignment with Malaysia's national climate goals and the National Energy Transition Roadmap (“NETR”), we integrate climate adaptation and mitigation strategies to safeguard our assets and ensure business continuity.

Since 2025, we have adopted the TCFD framework to assess, manage, and report on climate-related risks and opportunities. We systematically evaluate physical and transition risks to build a resilient and forward-looking business.

TCFD Core Elements in Heveapac



TCFD Sections	Description
Governance	We govern climate-related matters by integrating them into Heveapac's corporate governance system, with direct oversight from the Board and management.
Strategy	We prioritise business resilience and address climate change scenarios through various mitigation actions and reduce our overall carbon footprint by aligning with the NETR and Bursa Securities' VCM ("Voluntary Carbon Market Handbook").

TCFD Sections	Description
Risk Management	We adopt the Heveapac's Risk Management Framework to address both transition and physical risks and opportunities across our business units.
Metrics & Targets	We identify and set quantitative climate-related targets to ensure the realisation of our 2050 Net Zero aspiration.

Governance

Heveapac's approach to managing climate-related risks is anchored in strong governance. The Heveapac's SMC convenes once a quarter to oversee the company's sustainability performance, including monitoring carbon emissions, waste reduction targets, and other climate-related initiatives. The Chairman of the SMC reports on climate performance to the board quarterly. The Board of Directors ensures the transparency of Heveapac's climate-related disclosures in accordance with TCFD recommendations.



Strategy

Our priority is to systematically eliminate our carbon footprint by aligning our operations with Malaysia's national climate ambitions, securing our position as a sustainable leader in the green economy.



Short-Term Until 2025

Key Target:

- Establish a data-driven, pre-2025 baseline of energy usage hotspots.
- Commence planning for future mandatory energy audits and Scope 1 electrification.

Medium-Term 2026 to 2040

Key Target:

- Reduce overall energy consumption by 22% through large-scale retrofits and energy audits.
- Slash Scope 2 emissions by a corresponding amount.
- Implement an internal shadow carbon price to drive investment in efficiency.

Long-Term 2040 to 2050

Key Target:

- Achieve an overall 70% reduction in Scope 2 emissions against the pre-2025 baseline via green energy procurement (i.e. Power Purchase Agreement ("PPA"), Third-Party Access ("TPA") system, Corporate Green Power Programme ("CGPP")).
- Achieve Net Zero in 2050 by neutralising all residual Scope 1 and Scope 2 emissions through high-quality carbon credits and Carbon Capture, Utilisation, and Storage ("CCUS") services.

Transition Risks

S: Short-term
(1-3 years)

M: Medium-term
(3-5 years)

L: Long-term
(> 5 years)



High



Significant



Medium



Low

Note: Heveapac assesses the severity of climate risk based on its potential financial impact to the Company's EBITDA. For the purpose of this analysis, an Earnings Before Interest, Taxes, Depreciation, and Amortisation ("EBITDA") loss greater than RM10,000,000 is the internal threshold used to classify a climate-related risk as having a High Impact on the company.

Type	Transition Risk/ Physical	Potential Impact	Exposure	Management Approach
Market Risk	Shift in customer preferences	- Reduced sales - Impact on revenue		Management: Conduct regular market research to monitor evolving consumer trends. Mitigation: Develop and promote a dedicated line of eco-friendly products and enhance marketing to highlight sustainability initiatives.
Reputational Risk	Perceived as a climate laggard	- Increased cost of capital - Reduced access to capital/markets		Management: Proactively engage with investors and stakeholders on ESG performance. Pursue green certifications. Mitigation: Develop, publish, and transparently report on progress against the company's decarbonisation roadmap.
Technology Risk	Inefficient resource management	- Higher operational costs - Inability to meet efficiency targets		Management: Oversee the project implementation and integration of new operational technology. Mitigation: Invest RM 10 million in an integrated Enterprise Resource Planning-Manufacturing Execution System-Computer-Aided Design Computer-Aided Manufacturing ("ERP-MES-CAD-CAM") named SOONFOR system upgrade for data-driven decision-making and efficiency.
Policy & Legal	Uncertainty about the government implementing carbon pricing as an instrument to capture the external cost of GHG emissions.	- Increased costs from paying a price on carbon emissions. - Higher costs for energy and materials as suppliers pass on their carbon liabilities.		Systematically execute initiatives outlined in Heveapac's four-phase Net Zero Roadmap to achieve our phased emissions reduction targets. Proactively engage with regulatory bodies and government agencies on forthcoming carbon pricing regulations, using our internal shadow carbon price to inform strategy and prepare for future compliance.

Type	Physical Risk	Potential Impact	Exposure	Management Approach
Physical Risk (Acute)	Damage to factory's physical assets due to extreme weather change such as flooding and sea level rise	• Asset write-offs/Impairment • Business interruption costs		Management: Annually review and secure adequate insurance policies to ensure sufficient coverage. Mitigation: Transfer financial risk by procuring comprehensive insurance for flood and fire damage at an annual premium of RM 1 million.
Physical Risk (Acute)	Damage to critical infrastructure and prolonged closure of highways due to extreme weather change such as flooding and landslides	• Increased transportation costs • Business interruption costs		Management: Regularly assess the climate vulnerability of key logistical routes. Mitigation: Diversify transportation routes and logistics providers to build supply chain resilience.
Physical Risk (Acute)	Water scarcity	• Production halt • Increased operational costs		Management: Secure contracts and establish protocols for activating contingency water supplies. Mitigation: Mitigate operational downtime by pre-emptively engaging a water transport company for emergency delivery.
Physical Risk (Chronic):	Heatwaves and heat stress impacting high absenteeism in workforce	• Reduced productivity • Increased operational costs		Management: Conduct regular health and safety audits focusing on thermal comfort and heat stress management. Mitigation: Enhance workplace safety protocols and factory temperature regulation protocols



Climate Change Scenario Analysis

Projected Sea Level Rise Across Shared Socioeconomic Pathways (“SSP”) Scenarios and Warming Pathways

The extent of future sea level rise will be shaped by the success of global climate mitigation efforts. Each scenario presents distinct implications for coastal infrastructure, supply chain resilience, and economic stability.

In a **Low-Impact (Optimistic) Scenario**, where robust global climate action curbs emissions effectively, sea level rise is expected to remain below 0.3 meters by 2100. Under these conditions, coastal infrastructure would only require minor adaptations, with minimal risk of flooding. Businesses could maintain operations with modest enhancements in energy efficiency and logistics monitoring.

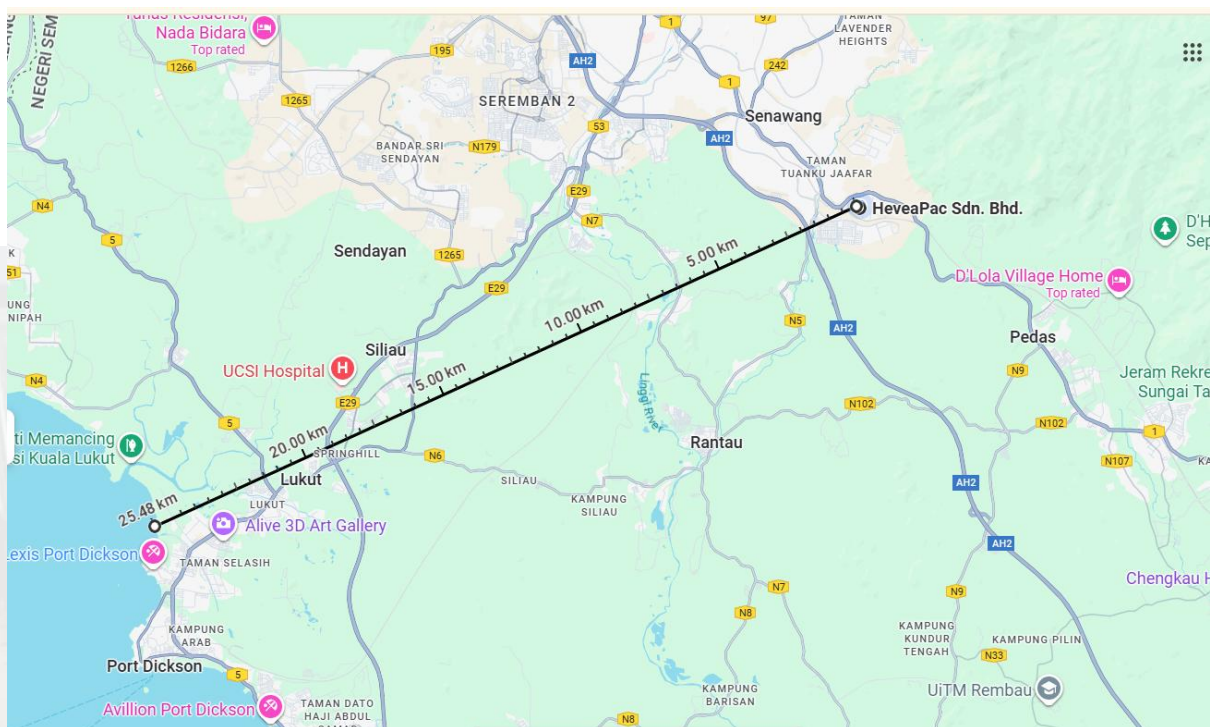
A **Moderate-Impact (Realistic) Scenario** reflects partial progress in mitigation efforts, resulting in a projected sea level rise between 0.3 and 0.6 meters by 2100. This would likely lead to intermittent disruptions at ports and transport hubs due to storm surges and coastal flooding. Companies would need to build greater resilience

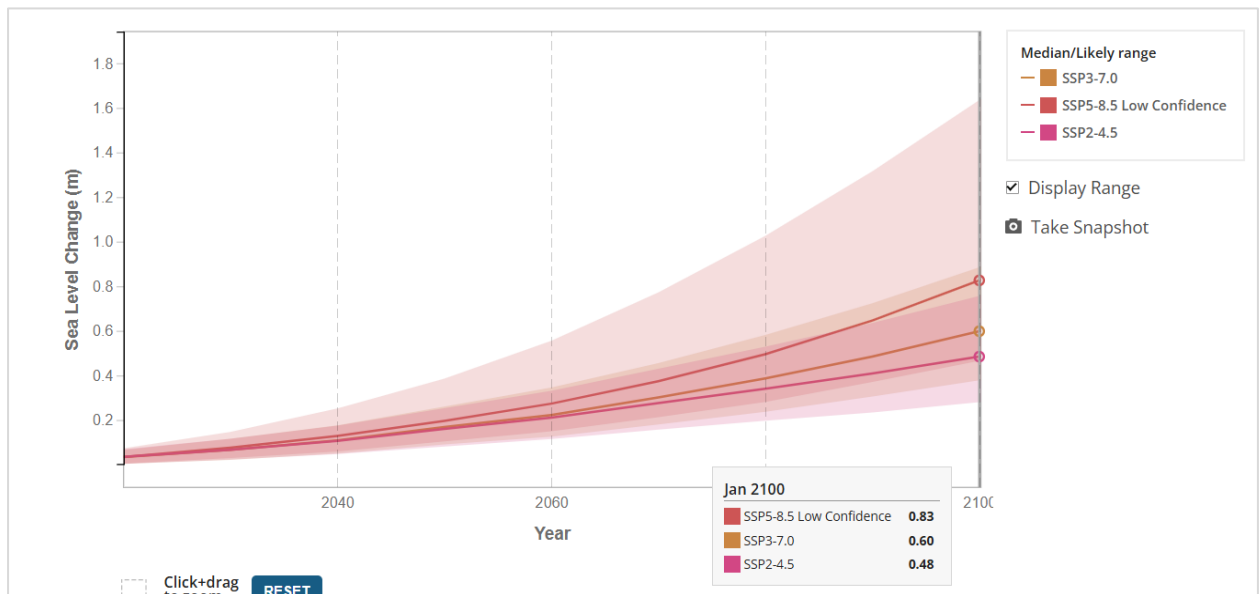
by diversifying supply chains, improving flood defences, and establishing alternative logistics pathways.

In the **High-Impact (Pessimistic) Scenario**, little to no climate action drives global temperatures above 3°C, leading to sea level rise exceeding 0.8 meters by 2100. This would significantly disrupt coastal operations, causing frequent port closures, rising logistics costs, and potential labour shortages. To adapt, businesses may need to relocate key operations inland, localise supply networks, and invest in renewable energy infrastructure to sustain long-term resilience.

The scenarios below consider three possible futures based on the severity of sea-level rise and associated risks in the Straits of Melaka and surrounding regions.

Our Sustainability Committee Members has conducted a climate-related risk assessment considering the three possible futures based on the severity of sea-level rise and associated risks in the **Strait Of Malacca (Pelabuhan Kelang)** and surrounding regions. with reference to several SSP scenarios prescribed by the Intergovernmental Panel on Climate Change (“IPCC”) 6th Assessment Report (“AR6”), particularly SSP5 – 8.5:





Source : IPCC AR6

Effects of Climate change	2021-2040 Short-term	2041-2060 Medium-term	2081-2100 Long-term
Rising Sea Level	0.13m	0.27m	0.83m



We reviewed our primary business location:

- Land elevation above current sea level – approximately 41.00 m to 66.00 m above sea level
- Distance from coast – it is least 25 KM from the coast
- Primary location has experienced flooding in the recent 3 years and is looking to implement drainage system improvements.

Monitoring Physical Flood Risk: Rainfall and River Level Data

To effectively assess and manage acute physical flood risks at our primary production facility, Heveapac utilises data from the most proximate government monitoring stations. Our facility's location in the Sungai Gadut Industrial Area dictates the selection of both rainfall and river level gauges to create a comprehensive view of local and regional flood conditions.

Our monitoring strategy is two-pronged:



1. Localised Rainfall Monitoring (Pluvial Risk)

For immediate, localised risk, we monitor rainfall intensity. High-intensity downpours can lead to pluvial (surface water) flooding within the industrial park. The most representative data points for our operational footprint are the rainfall station at **Masjid Taman. Tuanku Jaafar**. Due to its close proximity, these stations provide a critical, real-time feed for assessing flash flood potential.

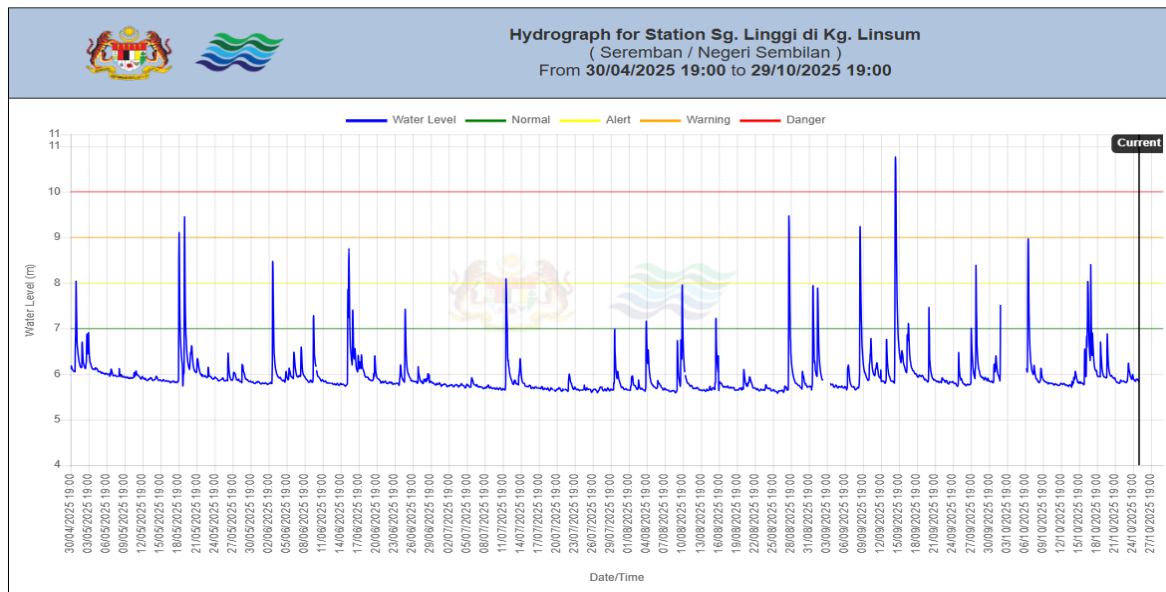


2. Regional River Level Monitoring (Fluvial Risk)

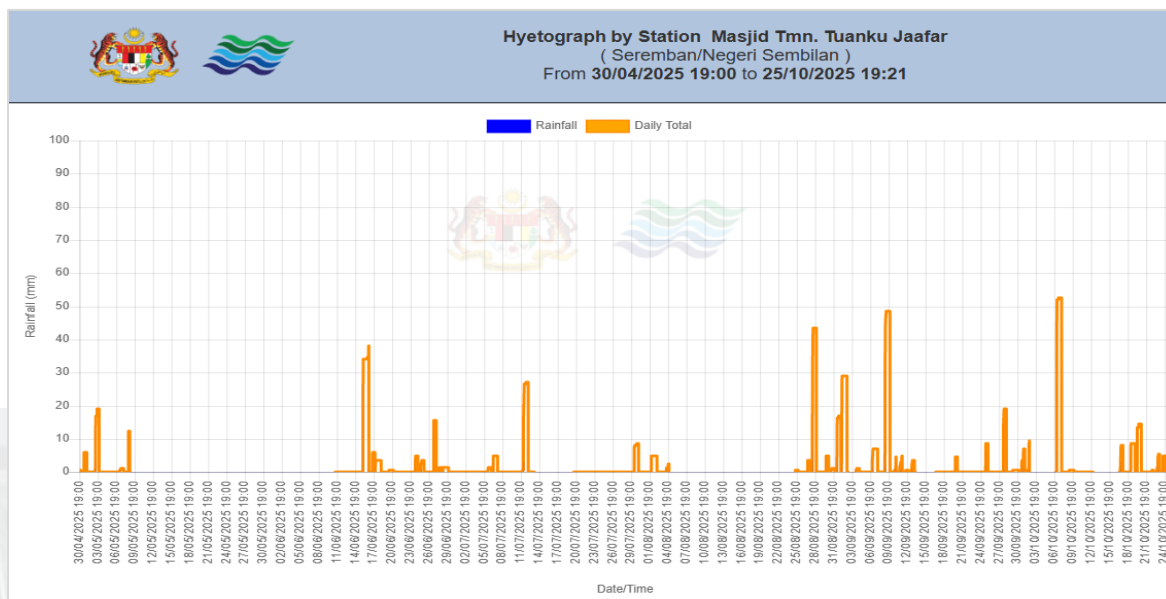
To monitor broader, regional flood risk from river overflow (fluvial risk), we use river level data. While the Sungai Gadut is the river flowing directly adjacent to our facility, the nearest available public monitoring station is located on the main river of the basin at **Sg. Linggi at Kg. Linsum**. This station is crucial for monitoring the overall water level within the Sungai Linggi basin, providing an indicator of widespread flood conditions that could impact the region, including our supply chain routes and the local infrastructure.

The combined data from these rainfall and river level stations forms a comprehensive early warning system. This dual approach, monitoring both localised flash flood triggers and regional river system status, serves as a key input for our climate risk modelling. It enables the proactive activation of our business continuity and

emergency flood response plans, enhancing our operational resilience against acute physical risks.



Source : Department Of Irrigation And Drainage Malaysia ,
<https://publicinfobanjir.water.gov.my/hujan/?lang=en>

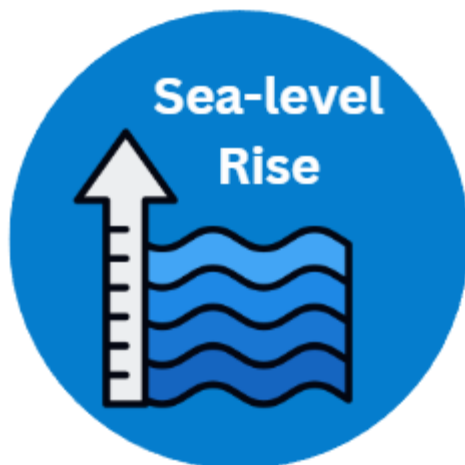


Source : Department Of Irrigation And Drainage Malaysia ,
<https://publicinfobanjir.water.gov.my/hujan/data-hujan/?state=NSN&lang=en>

Note : Convective rain more than 60 mm in 2 to 4 hours duration (typical) may cause flash floods. However, monsoon rains are typically of long duration with intermittent heavy bursts and the intensity can occasionally exceed several hundred mm in 24 hours (Source: Department of Irrigation and Drainage of Malaysia).

We assessed and concluded that the risks we highlighted are based from:

- **Rising sea level (flood, erosion and inundation)** – Low, as impact to



primary work site due to the relatively comfortable distances from coast and are sitting on higher land elevation with option of relocations when necessary. However as Heveapac is dependant on many import and export activities for their operations the Klang West Port and North Port still remains a key site to be monitored for risks of closures due to rising sea levels.

- **Rising mean temperature (extreme heat)** – High, although readily



available historical data for mean temperature at our specific location is limited, we deemed the risk from extreme heat to be high due to the strong physical link between temperature and precipitation. Periods of low rainfall lead to drier ground conditions. Without moisture in the soil, the sun's energy is no longer consumed by the process of evaporation, which has a natural cooling effect on the surrounding environment. Instead, this solar energy directly heats the dry surface and the air above it, a process often intensified by the clearer skies associated with dry weather. Hence, we concluded that a sustained decrease in rainfall makes prolonged periods of extreme heat a significantly higher possibility for our operational environment, justifying the high-risk classification.

- **Rainfall (extreme rainfall and flood)** – Low to Moderate, as the locations are



prone to flooding due to heavy rainfall (as much as over 45 mm a day* in the last 6-months). However, other factors may increase the risk of flood caused by surrounding development and deteriorating drainage which are not directly link to climate change.

- **Water Scarcity (municipal water shutdown)** - Low, despite the documented



instances of municipal water disruptions, such as those that occasionally occur via government order in the Seremban area. This low risk classification is due to several critical mitigating factors. Firstly, the high volume of local rainfall provides Heveapac, with a readily available, free, and alternative source of fresh water, which can be harnessed for operational

needs. Secondly, the nature of Heveapac's manufacturing processes, which involve the production of Ready to Assemble furniture, are not considered water intensive. This combination of low operational dependency and a robust, free natural water alternative.

To navigate these evolving risks, organisations should pursue a phased strategy, beginning with short-term vulnerability assessments, progressing to medium-term infrastructure reinforcements, and ultimately implementing long-term structural adaptations to ensure operational continuity in a changing climate.

Climate Scenario Analysis for Heveapac

This analysis evaluates the resilience of Heveapac's strategy against three distinct climate futures, assessing the potential impact of identified physical and transition risks on our operations and financial performance.

Scenario 1: Low Impact (Optimistic Scenario)



Assumes global climate action is highly successful and warming is constrained.

Impacts on Heveapac

In this scenario, climate risks remain manageable and are not expected to trigger significant financial losses.

- **Physical Risks:** The likelihood of acute physical events remains low. Risks such as **Damage to critical infrastructure** (e.g., Port Klang) and **Prolonged closure of highways** manifest as minor, infrequent disruptions with negligible impact on production schedules. The risk of direct **Damage to physical assets** from flooding remains minimal.
 - **Financial Materiality:** No individual risk is projected to cause an EBITDA loss exceeding RM10,000,000 to Heveapac.
- **Transition Risks:** The transition is orderly and predictable. The **Policy & Legal Risk** of a carbon price results in a low, manageable carbon tax that is easily absorbed. **Market Risk** from shifting customer preferences evolves slowly, allowing for gradual adaptation of our product lines.

Strategic Actions

- **Risk Management:** Continue to monitor localised rainfall and river level data (Kg. Linsum, Taman. Tuanku Jaafar) as part of our standard operational risk management.
- **Operational Efficiency:** Focus on incremental efficiency improvements through our planned ERP-MES system upgrade to manage minor increases in compliance and energy costs.
- **Supply Chain:** Maintain and strengthen relationships with current logistics partners, with a focus on communication protocols for minor weather disruptions.

Scenario 2: Moderate Impact (Realistic Scenario)



Assumes climate mitigation is only partially successful, leading to noticeable physical changes and more assertive policy responses.

Impacts on Heveapac

Under this scenario, several climate risks become financially material, requiring proactive management to protect profitability.

- **Physical Risks (Critical):** Acute physical risks escalate significantly.
 - **Damage to critical infrastructure** and **Prolonged closure of highways** become a critical concern. Periodic flooding events disrupting Port Klang or major transport arteries could halt production for several days. **This risk carries a potential EBITDA loss > RM10,000,000 per major incident** due to lost revenue and expedited freight costs as well as extreme weather which causes acute physical risks to materialise and affect Heveapac's operation sites.
 - **Heat stress impacting workforce** (a chronic risk) begins to measurably reduce factory productivity during increasingly frequent heatwaves.
- **Transition Risks (Critical):** Policy and market shifts accelerate, posing a direct financial threat.
 - The **Policy & Legal Risk** becomes critical with the implementation of a moderate carbon price. Based on our emissions profile, this tax is projected to have a direct **annual EBITDA impact > RM10,000,000**.
 - **Market Risk** and **Reputational Risk** intensify. Key customers now require transparent reporting on sustainability, and being perceived as a laggard could jeopardise major contracts.
 -

Strategic Actions

- **Supply Chain Diversification:** Actively identify and engage alternative logistics routes and potentially secondary suppliers in less flood-prone regions to mitigate infrastructure risk.
- **Financial Mitigation:** Procure comprehensive Climate Risk Insurance to transfer the financial risk of business interruption from critical physical events.
- **Decarbonisation Investment:** Accelerate investments in energy efficiency and explore renewable energy PPAs to reduce exposure to the newly implemented carbon tax.

Scenario 3: High Impact (Pessimistic Scenario)



Assumes limited success in global climate action, leading to severe physical impacts and reactive, disruptive policy measures.

Impacts on Heveapac

In this future, climate risks pose a severe and continuous threat to Heveapac's operational viability and financial stability.

- **Physical Risks (Critical):** Acute and chronic physical risks become severe and frequent.
 - Frequent and prolonged shutdowns of Port Klang due to severe storms and sea-level rise make the **Damage to critical infrastructure** risk a constant operational challenge. **Each disruption now results in an EBITDA loss far exceeding RM10,000,000.**
 - The risk of direct **Damage to physical assets** becomes acute. The proximity of the **Sungai Gadut** means our facility faces a high probability of direct flood damage, threatening asset write-downs and extended operational halts.
 - **Water scarcity** emerges as a new critical risk, with droughts potentially halting water-intensive production processes.

- **Transition Risks (Critical):** The transition is disorderly and punitive for carbon-intensive businesses.
 - A high and volatile **Policy & Legal Risk** (carbon tax) severely erodes profitability, with an **annual EBITDA impact escalating into the tens of millions**, threatening the financial sustainability of operations.
 - Severe **Reputational Risk** makes it difficult to access capital from investors with strong ESG mandates and leads to the loss of key customers, fundamentally threatening our market position.

Strategic Actions

- **Strategic Relocation Assessment:** Initiate a formal assessment for relocating critical warehousing or production facilities further inland to areas less vulnerable to flooding and port disruptions.
- **Supply Chain Localisation:** Radically shift sourcing strategies to prioritise domestic suppliers, reducing dependence on vulnerable international shipping lanes.
- **Energy Independence:** Aggressively invest in on-site renewable energy generation (e.g., solar) to mitigate extreme energy price volatility and crippling carbon taxes.

Key Metrics and Targets

Heveapac monitors its climate-related performance through a focused set of Key Performance Indicators (“KPIs”) and specific Targets designed to enhance our business resilience, support the transition to a low-carbon economy, and align with NETR.

Our targets address areas from direct operational emissions and energy efficiency to resource circularity, physical climate risk adaptation, and comprehensive ESG performance.

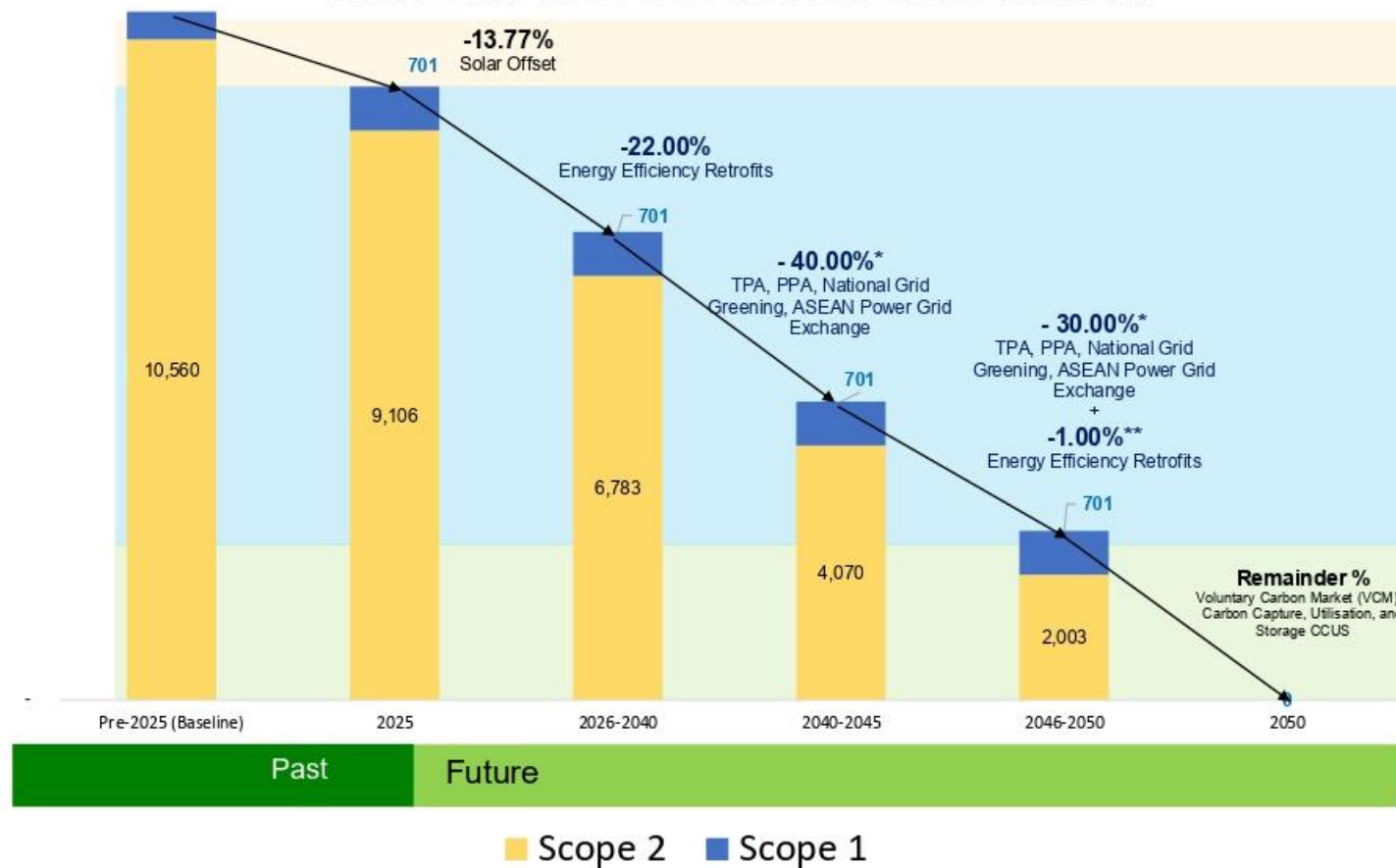
Heveapac's Key Metrics and Targets

Nature of KPI	Description	Status
Metrics for Greenhouse Gas (GHG) Emissions & Energy	GHG Emissions Intensity: Reduce tCO ₂ e per tonne of finished product by 20% from 2025 baseline of 0.23* tCO ₂ e per tonne of finished goods produced. *Based on total scope 1 + scope 2 GHG emissions of 11,260.24 tCO₂e and average output of 50,000 tonnes per of finished goods per year.	Partially Achieved
	Energy Intensity: Reduce kWh per tonne of finished product by 20% from 2025 baseline of 272.86 kWh per tonne of finished goods. Based on 13,642,984.00 kWh per year.	Partially Achieved
	Disclosure of All 15 Scope 3 categories by 2028. Currently disclosed are Scope 3.4, 3.5, 3.6, 3.7 and 3.9.	Partially Achieved
	Renewable Electricity: Increase energy derived from renewable sources by 70% by 2050.	Partially Achieved
Adaptation & Climate Resilience	Adaptation Investment: Allocate Over RM 1,000,000 Operating Expenditure or Capital Expenditure to mitigate physical risks.	Achieved
	Environmental Fines: Maintain Zero for number and value of fines.	Achieved
Resource Efficiency and Circular Economy	Product Design: Achieve 95% of products designed for easy separation of parts (Design for Disassembly) for easy recycling.	Achieved
	Chemical Safety: Monitor Volume of low-formaldehyde or formaldehyde-free resins used to ensure it is within non-harmful levels.	Achieved
Operational and Non-GHG	Water Pollution: Regular monitoring and continuous compliance of water discharge.	Achieved

Environmental Metrics	Air Quality & Noise Pollution: Regular monitoring and continuous compliance of air emissions and noise pollution.	Achieved
Sustainable Procurement	Supplier Oversight: 100% of strategic suppliers audited for environmental and social compliance.	Partially Achieved
	Local Sourcing: Source 70% of raw materials (excluding specialised chemicals) within the country.	Partially Achieved
Social and Governance Metrics	Board ESG Oversight: Hold 4 Board meetings per year with a dedicated climate agenda.	Partially Achieved
	Safety (LTIFR): Maintain Lost Time Injury Frequency Rate (LTIFR) < 3.	Partially Achieved
	Employee Training: Provide 2 Hours per employee for career development.	Partially Achieved
	Community Engagement: Establish 3 partnerships with local communities on social programs.	Partially Achieved
	Stakeholder Engagement: Address and follow up at least 5 ESG-related requests or questionnaire from B2B customers annually.	Partially Achieved

NET ZERO DECARBONISATION ROADMAP

Average ton CO2 Output (based on Scope 1 & Scope 2)



Reduction from on-site Solar photovoltaic installation (PV)



Energy Efficiency Retrofits Under Energy Efficiency and Conservation Act (EECA)



Leveraging TNB's Green Electricity Tariff (GET) program
Third-Party Access (TPA) framework for more economic Renewable Energy Supply
ASEAN Renewable Energy (RE) exchange



Procuring Carbon Capture, Utilisation, and Storage (CCUS) such as Kasawari and Lang Lebah projects
Voluntary Carbon Market (VCM)

Note on Baseline Data Note: The baseline carbon output for the Financial Year Ending (FYE) 2025 is 12 months of actual company data.

Note on Calculation Methodology (*) * This calculation reflects electricity consumption from the National Grid, after accounting for savings from on-site solar power generation and energy efficiency initiatives.

Note on 2050 Efficiency Target (*)** *** This figure represents the final 1% energy efficiency improvement needed to meet the national target of 23% for the industrial sector by 2050. It is calculated by netting off the 22% efficiency already achieved by 2040.

Heveapac's Roadmap to Net Zero by 2050

Following the initial investment in on-site solar PV facilities, which has offset 13.77% of our original grid electricity emissions, Heveapac's remaining carbon footprint stands at 701 tCO₂e for Scope 1 and 10,559 tCO₂e for Scope 2. This roadmap outlines a phased, strategic approach to eliminate this entire footprint by 2050, leveraging the catalysts and frameworks established in NETR. The overwhelming priority will be the aggressive, phased elimination of our Scope 2 emissions, followed by the final neutralisation of all residual emissions.

Phase 1: Foundational Actions & Demand Reduction (2026 – 2040)

This foundational phase focuses on internal optimisation and demand reduction to tackle the "low-hanging fruit" by significantly reducing energy consumption before switching to green sources. This single action is projected to be the most impactful step in the medium term, aligning with national policy and preparing the company for future market opportunities. In line with the forthcoming Energy Efficiency and Conservation Act ("EECA"), we will plan to explore means to conduct comprehensive, mandatory energy audits across all facilities to establish a data-driven baseline of energy usage hotspots. Leveraging these findings, we will plan to explore means to engage with the public Energy Service Company ("ESCO") platform to implement large-scale retrofits using "energy performance contracts" to minimise upfront capital expenditure. This initiative targets a 22% reduction in energy consumption against our pre-2025 baseline, which will slash Scope 2 emissions significantly. Concurrently, we will implement an internal shadow carbon pricing mechanism to assess the future financial risk of emissions and build the business case for these investments, turning the future carbon tax from a liability into a driver for innovation. Planning for our Scope 1 emissions will also commence, with a focus on future electrification.

Phase 2: Large-Scale Green Energy Procurement (2040 – 2045)

With a reduced energy demand from Phase 1, the focus shifts to systematically decarbonising our electricity supply as national renewable energy frameworks mature. This phase targets a further 40% reduction in our emissions against the pre-2025 baseline, a goal that aligns with the NETR's ambition for renewable energy capacity in 2040. This target will not be met by a single mechanism but through a dynamic combination of procurement strategies as we transition from a passive grid consumer to an active market participant. We will leverage the full spectrum of opportunities presented by the national energy transition,

including negotiating long-term Direct PPAs with independent producers via the TPA framework, subscribing to national programs like the Green Electricity Tariff (“GET”), and exploring regional opportunities through the ASEAN Power Grid exchange. This diversified approach is designed to secure a stable, cost-effective supply of clean energy and will eliminate a substantial portion of our Scope 2 emissions, bringing the remainder down to approximately 4,000 tCO₂e.

Phase 3: Final Push to a Green Grid (2046 – 2050)

This period represents the final push to fully decarbonise our electricity consumption. The primary objective is to secure an additional 30% reduction against our pre-2025 baseline. This is a critical step, as this increment, when combined with the 40% reduction from the previous phase, will fulfil the NETR's ultimate national goal of achieving 70% renewable energy in the power grid by 2050.¹

To achieve this, we will intensify our green procurement strategies by continuing to leverage the TPA framework and PPAs, while also actively participating in the CGPP to source electricity from new Large-Scale Solar parks and Hybrid Hydro-Floating Solar projects.

During this phase, we will also implement the final planned energy efficiency retrofits to achieve an additional 1% energy saving, bringing our total efficiency improvement to 23% and meeting the NETR's national target for the industrial sector. By the end of this phase, these combined actions will continue to reduce our remaining Scope 2 emissions.

Phase 4: Final Neutralisation (2050)

The final phase in 2050 is dedicated to tackling the hard-to-abate residual emissions to achieve a true Net Zero balance sheet. The remaining Scope 2 emissions and the entirety of our Scope 1 emissions will be neutralised. This will be accomplished through a dual strategy. First, we will procure high-quality, certified carbon credits from the VCM to offset a portion of these emissions. Second, for the final portion, we will procure services from national CCUS projects, such as the Kasawari and Lang Lebah facilities, to ensure the permanent capture and storage of our remaining emissions. By executing this structured, four-phase roadmap, Heveapac will systematically eliminate its carbon footprint, aligning its operations with Malaysia's national climate ambitions and securing its position as a sustainable leader in the green economy.

Methodology, Judgements, and Assumptions

This section outlines the methodology employed for calculating lorry emissions and sea emissions, explicitly stating the key judgements and assumptions that underpin the quantitative assessment. The approach is segmented into upstream and downstream operations to accurately reflect distinct logistical phases.

3.4 Upstream Methodology for Calculating Lorry Emissions

The upstream emissions calculation is based on a vehicle fleet comprising various lorry and van types. Given the diverse nature of the cargo, a precise classification of each vehicle by its specific load capacity was not feasible. Consequently, emission factors were selected based on cargo weight. In accordance with DEFRA ("Department for Environment, Food & Rural Affairs") guidelines, journeys transporting cargo up to 3.5 tonnes were classified under the 'Van Average' category for emission calculation purposes.

A central assumption was applied to the vehicle load factor. Recognising that lorries typically service multiple drop-off points on a single trip, calculating emissions based on a 100% laden vehicle for the entire journey would lead to an overestimation. To account for the progressive decrease in load as deliveries are completed, an emission factor corresponding to a 50% average laden state was applied. This approach models the vehicle as fully laden at the beginning of its route and progressively lighter thereafter.

Key DEFRA Emissions Used:

0.61643	Van Average up to 3.5 tonnes
0.43990	50% laden HGV Rigid (>3.5 - 7.5 tonnes)
0.26206	50% laden HGV Rigid (>7.5 - 17 tonnes)
0.20077	50% laden HGV Rigid (>17 tonnes)

Furthermore, for the calculation of total distance, it was assumed that the routes from each of the 53 unique points of origin, as provided by Heveapac, are consistent for every dispatch. This allows for the application of a standardised journey length in kilometres for each respective origin point within the total emissions calculation.

3.9 Downstream Methodology for Calculating Lorry Emissions

The downstream lorry operations are categorised into four distinct vehicle types: 3-tonne lorries, 10-tonne lorries, 20-foot trailers, and 40-foot trailers. A differentiated approach was taken regarding load factor assumptions based on the specific operational profile of each category.

For the 3-tonne and 10-tonne lorries, which are involved in multi-stop delivery routes, the same load factor logic as the upstream calculation was applied. An emission factor for a 50% average laden state was used to prevent overestimation, acknowledging that these vehicles begin their journeys fully laden and become progressively lighter as deliveries are made.

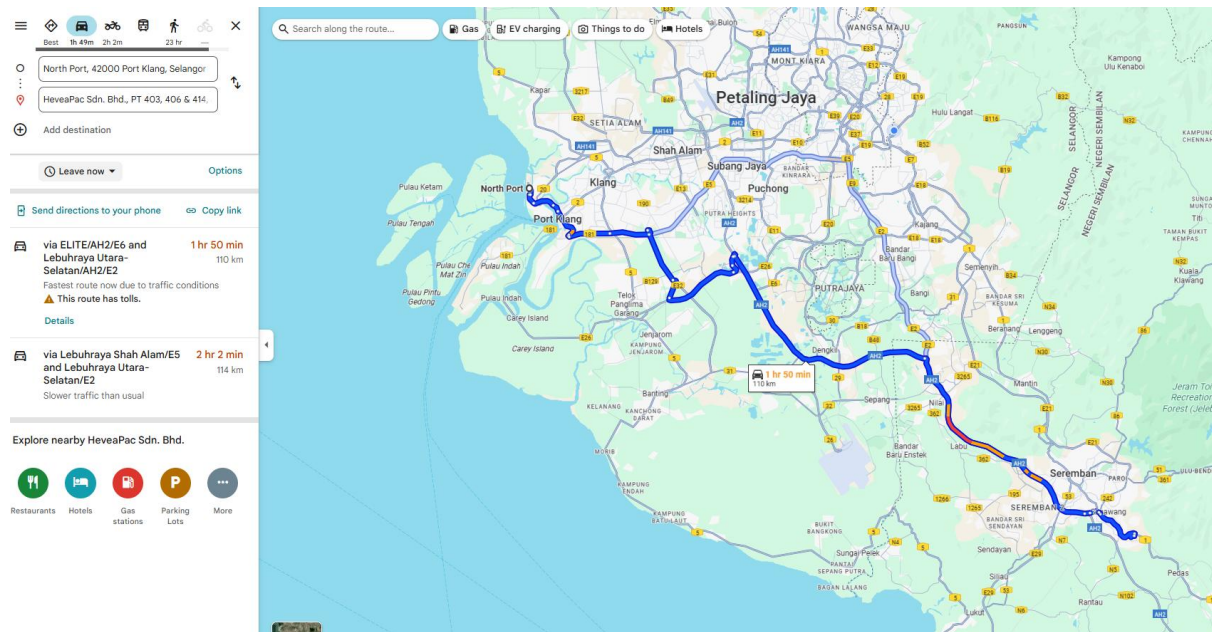
In contrast, the operational pattern for the 20-foot and 40-foot trailers differs significantly. As their sole point of offloading is at the port of origin for subsequent sea freight shipment, they remain fully laden for the entirety of their journey. Therefore, a 100% laden assumption was deemed appropriate for these vehicle categories.

Key DEFRA Emissions Used:

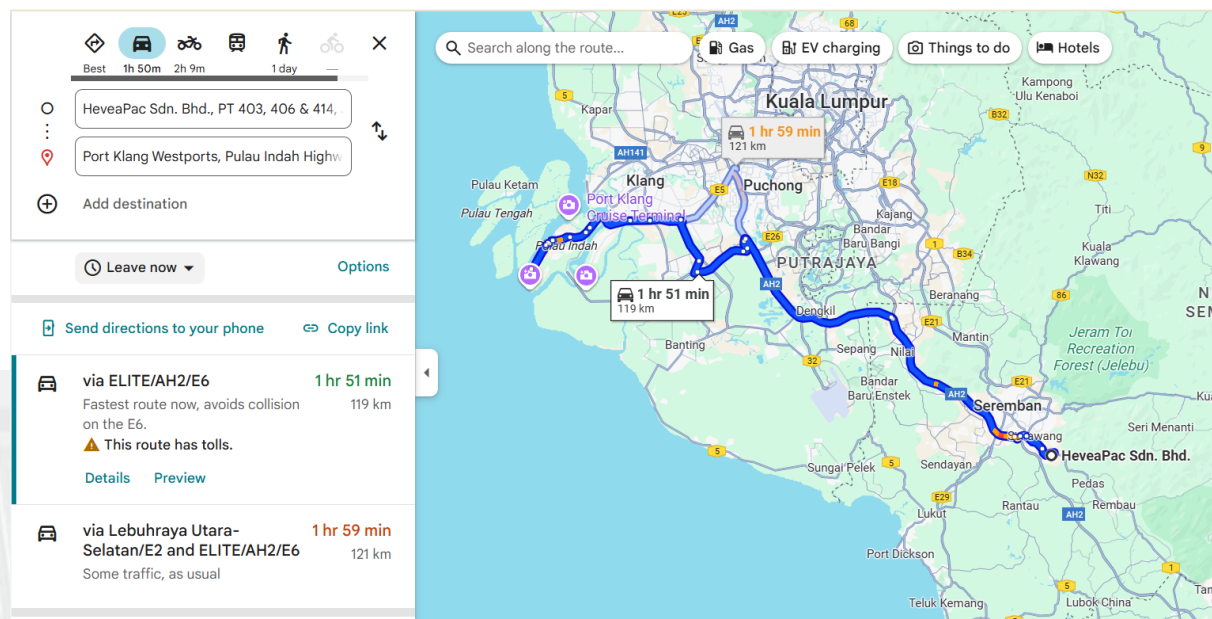
0.43990 kgCO ₂ e	50% laden	HGV Rigid (>3.5 - 7.5 tonnes)
0.62106 kgCO ₂ e	50% laden	HGV Rigid (>7.5 tonnes-17 tonnes)
0.91726 kgCO ₂ e	100% laden	Articulated (>3.5 - 33t)
1.04428 kgCO ₂ e	100% laden	Articulated (>33t)

The calculation of total distance for the downstream segment was based on the assumption that the routes from each trailer's point of origin to the ports of West Port Klang or North Port Klang, as disclosed by Heveapac, are consistent for every trip. This permits the use of a standardised journey length for each respective route in the final emissions calculation.

Distance Estimation for delivery of 20' and 40' trailers based on Google Maps from Heveapac to Port Klang North Port :



Distance Estimation for delivery of 20' and 40' trailers based on Google Maps from Heveapac to Port Klang West Port :



Methodology, Judgements, and Assumptions

3.4 Upstream Transportation and Distribution & 3.9 Downstream Transportation and Distribution Sea Freight

For sea travel downstream from Heveapac to the client's port of discharge, the following judgements and assumptions were made. To calculate the total carbon emissions, the total weight of cargo destined for a specific port was averaged across the total number of trips. A significant challenge arose in establishing a reliable emission factor due to the involvement of over 28 distinct shipping liner companies across 4,189 entries, each with potentially different emission profiles based on their respective carbon disclosures. To overcome this, a frequency ranking of the most utilised shipping lines was conducted.

The top three most frequent shipping routes were selected to serve as a benchmark for companies lacking public emission disclosures. The selected carriers were OOCL, ONE, EVERGREEN, CMA CGM, and MSC. Notably, WAN HAI, HEUNG A and INTERASIA despite being the more frequently used, were excluded due to the unavailability of a public emissions disclosure platform at the time of development of this methodology. EVERGREEN, CMA CGM, and MSC were included to ensure a sufficient sample size.

Route determination was based on the pretence that logistical decisions prioritise transport readiness, selecting the first available freighter to minimise delays. While this is standard industry practice, more details such as costing of the routes need to be taken into account as well. A further pretence was applied where direct shipping routes were unavailable; in such cases, it was assumed that cargo would be routed through major transshipment hubs corresponding to economic demand, as observed in available routing options.

Based on the data from Heveapac and the carbon disclosures from the selected shipping liners, the average derived emission factor was 0.00734 kgCO_{2e} per tonne-kilometre. This value falls within the range of the DEFRA factor for a Bulk Carrier of 10,000–34,999 dwt, which is 0.00800 kgCO_{2e} per tonne-kilometre. Therefore, the DEFRA factor for this vessel class was adopted for all calculations to establish a consistent and reasonable basis, following the same Well-to-Wheel (“WTW”) parameters for dry, non-refrigerated cargo.

A special unique judgement was made for calculation through CMA CGM Group as it only deals in Twenty-foot Equivalent Unit (“TEU”) rather than tonnes which is a limitation on that sample size. To overcome this the pretence of the weight capacity factor of 10.0 tonnes per TEU is used and is derived from the practical stowage factor for boxed woodchip board furniture. This figure represents an average density and accounts for both the physical constraints of a container and standard packing efficiencies. The usable capacity of a standard 20-foot dry container is a function of its volume and the typical packing efficiency for furniture. The internal volume is approximately 33 cubic meters. A packing efficiency of 85 percent is assumed, resulting in approximately 28 cubic meters of usable space for cargo. The average density of the shipped boxed furniture is approximately 668 kilograms per cubic meter. This density is the underlying driver for the 10.0 tonne capacity factor when applied to the 28 cubic meters of usable space. The rounding of the theoretical TEU count to the next whole number is a standard industry practice to ensure sufficient carrier capacity is booked and to account for minor variations in load planning

The carbon emission calculations derived from carrier tools, including those from ONE, MSC, CMA CGM, OOCL, and Evergreen, are based on significant operational and methodological assumptions that influence the results. A primary assumption concerns vessel capacity utilisation, where carriers apply different standard factors, such as ONE's 70% or OOCL's 100%, to allocate a vessel's total emissions to a specific shipment. Furthermore, the calculations assume that ocean routes are based on standard port-to-port connections and that fleet-wide average consumption data and emission factors, rather than vessel-specific data, are representative for a given journey.

These calculations also rely on the technical assumption that the global warming potential of all greenhouse gases emitted can be accurately converted to a carbon dioxide equivalent (“CO₂e”) using established conversion factors, with methodologies referencing international guidelines like the EU's Renewable Energy Directive for Well-to-Wake emissions (as all calculations were set to Well-to-Wake). It is important to note that the carriers explicitly disclaim responsibility for the completeness and accuracy of these calculations, as actual routes, specific vessel deployments, and real-world inland transport conditions may differ from the models. Consequently, the results should be treated as standardised estimates for comparative and informational purposes rather than as precise measurements of actual emissions.

Limitations

The following limitations, inherent to the nature of logistics-based carbon accounting, are acknowledged to provide transparency on the data's context and boundaries.

Land Transport Load Factor Assumption

The calculation of emissions from lorry transport applies a standardised 50% average load factor to routes with multiple drop-offs. While this industry-accepted practice prevents overestimation by accounting for decreasing weight, it is a simplification. Actual load profiles are dynamic and vary daily. This means the model provides a robust average but may not reflect the exact emissions of any specific journey.

Representativeness of Maritime Emission Factors

The sea freight emissions are calculated using an emission factor benchmarked from a sample of five major shipping lines. This sample was selected based on frequency of service and data availability. However, the complete logistics chain involved over 27 carriers. The methodology assumes the technological efficiency and operational patterns of the sampled carriers are representative of the entire fleet, which may introduce a margin of error. Having said that this limitation is only applicable to the sample size originating in CMA CGM Group shipping, others are based on actual tonnage disclosed.

Modelling of Maritime Routing

The determination of shipping routes is based on standard industry practices prioritising schedule availability and observable transshipment hubs for routes without direct service. This modelling approach may not capture all real-world routing complexities or last-minute logistical changes, potentially affecting the accuracy of distance and emission factor application for a subset of journeys.

Data Granularity and Averaging

The top-down nature of the analysis, which relies on averaging cargo weights across trips and using standardised vehicle classes, results in a loss of granularity. This approach is necessary for a large-scale inventory but means the results are less sensitive to the high variability that occurs at the level of individual shipments.

Conversion Of Units Of Heveapac Material From Tonne To TEU For CMA CGM Group Shipments During GHG Calculations

This methodology provides a standardised estimate but is limited by its reliance on a fixed weight capacity factor. The 10.00 tonne per TEU figure is an average that may not accurately represent specific shipments, particularly those consisting entirely of very heavy or very light and bulky items. Furthermore, the model does not account for the use of different container types, such as High-Cube containers, which can lead to an inaccurate assessment of the space required for low-density goods.

An additional significant limitation is the inherent economic inefficiency introduced by the rounding rule. Mandating that any fractional TEU is rounded up to a whole container can result in the booking of significantly under-utilised capacity, especially for larger shipments. Finally, as a purely quantitative model, it cannot incorporate critical qualitative factors such as special handling requirements, non-standard product dimensions, or practical stowage challenges, meaning its output must always be validated by operational expertise.

Limitations

Reliance On Third Party Shipping Liner Carbon Calculators For GHG Disclosures

The carbon emission figures provided by these carrier tools are subject to several important limitations. The calculations are based on standardised models and fleet averages, which may not reflect the specific conditions of an individual shipment. Key variables, such as the actual vessel deployed, its precise sailing route and speed, real-time weather conditions, and the exact fuel type used, are not captured in these estimates. For inland transport, the reliance on default distances, assumed utilisation rates, and representative transport modes introduces further potential for deviation from actual emissions.

Consequently, the results should be interpreted as well-informed approximations rather than exact measurements. These tools are highly suitable for high-level comparative analysis, strategic planning, and tracking general environmental performance over time. However, they are not intended for precise carbon accounting, mandatory reporting, or fulfilling regulatory compliance requirements where primary data and more granular methodologies are necessary. Users are advised to treat these outputs as a single data point within a broader decision-making framework.

The organisation considers these disclosures essential for a faithful and transparent representation of its GHG inventory. The methodology provides a conservative and defensible baseline, with the understanding that precision would increase with access to more granular, asset-level data in the future.

Sources

ShipmentLink Shipping & Transport Website.

https://ss.shipmentlink.com/tvs2/jsp/TVS2_InteractiveSchedule.jsp

2022 Ocean Network Express Pte. Ltd.

<https://ecomm.one-line.com/one-ecom/schedule/eco-calculator>

MSC Mediterranean Shipping Company SA

<https://www.msc.com/en/carbon-calculator>

Sources

CMA CGM Group

<https://www.cma-cgm.com/ebusiness/schedules>

Orient Overseas Container Line Limited.

<https://www.oocl.com/eng/aboutoocl/Environmentalcare/ooclcarboncalculator/Pages/default.aspx>

Evergreen Marine Corp. (Taiwan) Ltd.

https://www.evergreen-marine.com/emc/calculator/jsp/EMC_CarbonCalculator.jsp?lang=en

Determination of Shipping Routes Via ShipmentLink Shipping & Transport Website.

ShipmentLink

Sailing Schedules

The schedules from KAOHSIUNG

No.	Place of Receipt	Departure Date
1	KAOHSIUNG	NOV-06-2025
2	KAOHSIUNG	NOV-17-2025
3	KAOHSIUNG	NOV-24-2025
4	KAOHSIUNG	NOV-06-2025

Service Information
Japan - Taiwan - Hong Kong Service (JTH)



JTH	HONG KONG	KAOHSIUNG	TAICHUNG	TAIPEI	OSAKA	KOBE	MOJI	HAKATA	TAIPEI	TAICHUNG	HONG KONG
ETA	THU	SAT	SUN	MON	WED	THU	SAT	SAT	MON	TUE	THU
ETD	FRI	SAT	SUN	MON	THU	THU	SAT	SUN	TUE	WED	FRI
T/S TIME	0	1	2	3	5	6	8	8	10	11	13

Close

NSA MOJI MOJI

EVER CENTER 2048-070N NOV-17-2025

The estimated schedule is considered for information purpose only and the Carrier may update, revise this schedule from time to time without any prior notice.

Back

ShipmentLink

Sailing Schedules

The schedules from KAOHSIUNG

No.	Place of Receipt	Departure Date
1	KAOHSIUNG	SEP-25-2025
2	KAOHSIUNG	SEP-25-2025
3	KAOHSIUNG	SEP-25-2025

Service Information
KOREA-TAIWAN- HAIPHONG SERVICE(KTH)



KTH	HAKATA	PUSAN	GWANG YANG	INCHEON	QINGDAO	TAIPEI	KAOHSIUNG	HAIPHONG	KAOHSIUNG	TAIPEI
ETA	WED	THU	FRI	SAT	MON	THU	FRI	TUE	FRI	SUN
ETD	WED	THU	FRI	SUN	MON	THU	SAT	WED	SAT	MON
T/S TIME	0	1	2	3	5	8	9	13	16	18

SEP-25-2025 12:00 JTH HAKATA HAKATA

Use of carbon emission calculations derived from carrier tools, including those from ONE, MSC, CMA CGM, OOCL, and Evergreen :

ONE ONE Solutions

Q Search

HOME

SCHEDULE

PRICES

BOOKING

DOCUMENTATION

MANAGE SHIPMENT

FINANCE

Origin: PORT KLANG, MALAYSIA (CY)

Destination: GIOIA TAURO, ITALY (CY)

Emission Type: ☒ WTW ☐ TTW Container Type: Dry Cargo Volume: 49.00 TON

Date: 2025-09-24 Next: 2 Weeks

Clear Calculate

PORT KLANG, MALAYSIA (CY) to GIOIA TAURO, ITALY (CY)

Emission Type: WTW Cargo Volume: 49.00 TON(S) Container Type: Dry Sort by: Lowest CO2 Emission Service Lane: All

Total: 3 results

PORT KLANG
WESTPORTS
MCT TERMINAL GIOIA TAURO
GIOIA TAURO

ETD: 2025-09-28
TRANSSHIPMENT

Vessel/ Voyage: WAN HAI 331 015N
Service Lane: JSM

Total Distance (km): 22,409 Total CO2 Emission (kg): 4,417.84

Display Detail

ONE ONE Solutions

Q Search

HOME

SCHEDULE

Search Schedule

My Schedule

Eco Calculator

PRICES

BOOKING

DOCUMENTATION

MANAGE SHIPMENT

FINANCE

Origin: PORT KLANG, MALAYSIA (CY)

Destination: LOS ANGELES, CA, UNITED STATES (CY)

Emission Type: ☒ WTW ☐ TTW Container Type: Dry Cargo Volume: 79.00 TON

Date: 2025-09-24 Next: 2 Weeks

Clear Calculate

PORT KLANG, MALAYSIA (CY) to LOS ANGELES, CA, UNITED STATES (CY)

Emission Type: WTW Cargo Volume: 79.00 TON(S) Container Type: Dry Sort by: Lowest CO2 Emission Service Lane: All

Total: 10 results

PORT KLANG
WESTPORTS
TRAPAC LOS ANGELES
LOS ANGELES, CA

ETD: 2025-10-01
TRANSSHIPMENT

Vessel/ Voyage: ACX PEARL 278N
Service Lane: JSM

Total Distance (km): 14,929 Total CO2 Emission (kg): 7,388.87

Display Detail

ONE ONE Solutions

Q Search

HOME

SCHEDULE

PRICES

BOOKING

DOCUMENTATION

MANAGE SHIPMENT

FINANCE

Origin: PORT KLANG, MALAYSIA (CY)

Destination: KAWASAKI, KANAGAWA, JAPAN (CY)

Emission Type: ☒ WTW ☐ TTW Container Type: Dry Cargo Volume: 2358.0 TON

Date: 2025-09-24 Next: 2 Weeks

Clear Calculate

PORT KLANG, MALAYSIA (CY) to KAWASAKI, KANAGAWA, JAPAN (CY)

Emission Type: WTW Cargo Volume: 2358.00 TON(S) Container Type: Dry Sort by: Lowest CO2 Emission Service Lane: All

Total: 8 results

PORT KLANG
WESTPORTS
KAWASAKI TERMINAL
KAWASAKI, KANAGAWA

ETD: 2025-10-04
TRANSSHIPMENT

Vessel/ Voyage: MSC AMERICA EWS34E
Service Lane: EEG

Total Distance (km): 6,258 Total CO2 Emission (kg): 160,155.35

Display Detail

MSC Shipping GHG Calculator Platform

msc

SearchTrackingEN

The MSC Carbon Calculator provides an estimate of the life cycle ('well-to-wake') CO₂e emissions for ocean freight shipments, helping customers understand the carbon footprint of their supply chains (Scope 3).

PORT KLANG (PELABUHAN KLANG), MALAYSIA (...)

FELIXSTOWE, UNITED KINGDOM (GBFXT)

UnitTonsQT.18Container typeDry

> Search

TEU

TONS

Container Type

POL NAME

POD NAME

Distance (Miles)

Estimated Transit Time (Days)

TONS CO₂e

Potential reduction TONS CO₂e

Potential new emission TONS CO₂e

1.8

18

Dry

Port Klang (Pelabu... (MYPKG)

Felixstowe (GBFXT)

12427

34

2.33

1.96

0.37

TOTAL SUM

2.33

1.96

0.37

BIOFUEL SOLUTION

msc

SearchTracking

The MSC Carbon Calculator provides an estimate of the life cycle ('well-to-wake') CO₂e emissions for ocean freight shipments, helping customers understand the carbon footprint of their supply chains (Scope 3).

PORT KLANG (PELABUHAN KLANG), MALAYSIA (...)

CASABLANCA, MOROCCO (MACAS)

UnitTonsQT.187Container typeDry

> Search

TEU

TONS

Container Type

POL NAME

POD NAME

Distance (Miles)

Estimated Transit Time (Days)

TONS CO₂e

Potential reduction TONS CO₂e

Potential new emission TONS CO₂e

18.7

187

Dry

Port Klang (Pelabu... (MYPKG)

Casablanca (MACAS)

12271

49

25.19

21.16

4.03

TOTAL SUM

25.19

21.16

4.03

BIOFUEL SOLUTION

msc

SearchTrackingEN

The MSC Carbon Calculator provides an estimate of the life cycle ('well-to-wake') CO₂e emissions for ocean freight shipments, helping customers understand the carbon footprint of their supply chains (Scope 3).

PORT KLANG (PELABUHAN KLANG), MALAYSIA (...)

ANTWERP, BELGIUM (BEANR)

UnitTonsQT.26Container typeDry

> Search

TEU

TONS

Container Type

POL NAME

POD NAME

Distance (Miles)

Estimated Transit Time (Days)

TONS CO₂e

Potential reduction TONS CO₂e

Potential new emission TONS CO₂e

2.6

26

Dry

Port Klang (Pelabu... (MYPKG)

Antwerp (BEANR)

12188

36

3.15

2.64

0.50

18.7

187

Dry

Port Klang (Pelabu... (MYPKG)

Casablanca (MACAS)

12271

49

25.19

21.16

4.03

1.8

18

Dry

Port Klang (Pelabu... (MYPKG)

Felixstowe (GBFXT)

12427

34

2.33

1.96

0.37

TOTAL SUM

30.67

25.76

4.90

BIOFUEL SOLUTION

CMA CGM Shipping GHG Calculator Platform

BETTER WAYS CMA CGM

ShippingEnd-to-End SolutionsAir Freight

Schedule results

Port Klang, MY • Degrad Des Cannes, GF • Departure from Thursday, 25-SEP-2025 • For 5 Weeks • [Modify Search](#)

Sort by: Earliest departureRouting solutionsDirect only

EARLIEST DEPARTUREEARLIEST ARRIVALLATE BOOKING

Thursday, 25-SEP-2025POLPort Klang, MY • Westport Terminal

Port Cut-off 24-SEP-2025, 07:00 PMMain vessel CNC VENUS
Voyage Ref. 0BGENN1MA

Tuesday, 02-DEC-2025PODDegrad Des Cannes, GF • Degrad Des Cannes Terminal

67 Days

via Singapore, SG • Rotterdam, NL

3.20 CO2 (t)/TEU

[Display details](#)

BETTER WAYS CMA CGM

ShippingEnd-to-End SolutionsAir FreightNewsMy CM

Schedule results

Port Klang, MY • Callao, PE • Departure from Thursday, 25-SEP-2025 • For 5 Weeks • [Modify Search](#)

Sort by: Earliest departureRouting solutionsDirect only

EARLIEST DEPARTUREEARLIEST ARRIVALLATE BOOKING

Sunday, 28-SEP-2025POLPort Klang, MY • Westport Terminal

Port Cut-off 26-SEP-2025, 12:00 AMMain vessel YANTIAN
Main service Bosphorus Express (BEX) Voyage Ref. 0BXT7E1MA

Monday, 17-NOV-2025PODCallao, PE • Dp World Callao

51 Days

via Shanghai, CN

1.45 CO2 (t)/TEU

Book

Get a quote

[Display details](#)

BETTER WAYS CMA CGM

ShippingEnd-to-End SolutionsAir FreightNewsMy CM

Schedule results

Port Klang, MY • Pointe A Pitre, GP • Departure from Thursday, 25-SEP-2025 • For 5 Weeks • [Modify Search](#)

Sort by: Earliest departureRouting solutionsDirect only

EARLIEST DEPARTURELATE BOOKING

Thursday, 25-SEP-2025POLPort Klang, MY • Westport Terminal

Port Cut-off 24-SEP-2025, 07:00 PMMain vessel CNC VENUS
Voyage Ref. 0BGENN1MA

Thursday, 27-NOV-2025PODPointe A Pitre, GP • Jarry

62 Days

via Singapore, SG • Valencia, ES

2.34 CO2 (t)/TEU

[Display details](#)

OOCL Shipping GHG Calculator Platform



OOCL Carbon Calculator

Origin :
Port Klang, Selangor, Malaysia

Destination :
Leixoes, Porto, Portugal

Cargo Volume :
25 TON

Cargo Nature :
Dry

Emission Type : 
Well-to-Wake(WTW)

Add Shipment

Reset

Calculate

Port Klang, Selangor, Malaysia

→

Leixoes, Porto, Portugal

Cargo Volume: 25 TON

Cargo Nature: Dry

Lowest Emission Route

Port Klang→Singapore→Rotterdam→Leixoes

Total Distance

24,299 km

Lowest CO₂e Emissions (WTW)

1,543.62 kg

Details ▾



OOCL Carbon Calculator

Origin :
Port Klang, Selangor, Malaysia

Destination :
Los Angeles, Los Angeles, California, United States

Cargo Volume :
15 TON

Cargo Nature :
Dry

Emission Type : 
Well-to-Wake(WTW)

Add Shipment

Reset

Calculate

Port Klang, Selangor, Malaysia

→

Los Angeles, Los Angeles, California, United States

Cargo Volume: 15 TON

Cargo Nature: Dry

Lowest Emission Route

Port Klang→Yantian→Los Angeles

Total Distance

16,126 km

Lowest CO₂e Emissions (WTW)

958.95 kg

Details ▾



OOCL Carbon Calculator

Origin :
Port Klang, Selangor, Malaysia

Destination :
Sydney, New South Wales, Australia

Cargo Volume :
49 TON

Cargo Nature :
Dry

Emission Type : 
Well-to-Wake(WTW)

Add Shipment

Reset

Calculate

Port Klang, Selangor, Malaysia

→

Sydney, New South Wales, Australia

Cargo Volume: 49 TON

Cargo Nature: Dry

Lowest Emission Route

Port Klang→Sydney

Total Distance

8,733 km

Lowest CO₂e Emissions (WTW)

2,441.39 kg

Details ▾

Evergreen Shipping GHG Calculator Platform

EVERGREEN MARINE CORP.

[About Us](#) [Corporate Sustainability](#) [Investor Relations](#)

The carbon emission data calculated by this system are based on the GLEC and Clean Cargo methodology or basis.

Select Routing Network

Routing Network

North East Asia - South East Asia Service - B

Port of Loading

MALAYSIA - PORT KLANG WEST PORT

Port of Discharge

TAIWAN - KAOHSIUNG

Please fill in unit value

118

TONs

Calculate

Clear

Calculated Result

Routing Network

North East Asia - South East Asia Service - B

Port of Loading

MALAYSIA - PORT KLANG WEST PORT

Port of Discharge

TAIWAN - KAOHSIUNG

Distance (km)

3904

Carbon Emission (kg)

2676.1333

EVERGREEN MARINE CORP.

[About Us](#) [Corporate Sustainability](#) [Investor Relations](#)

The carbon emission data calculated by this system are based on the GLEC and Clean Cargo methodology or basis.

Select Routing Network

Routing Network

Japan - Taiwan - Hong Kong Service

Port of Loading

TAIWAN - KAOHSIUNG

Port of Discharge

JAPAN - MOJI

Please fill in unit value

118

TONs

Calculate (125)

Clear

Calculated Result

Routing Network

Japan - Taiwan - Hong Kong Service

Port of Loading

TAIWAN - KAOHSIUNG

Port of Discharge

JAPAN - MOJI

Distance (km)

2792.8

Carbon Emission (kg)

1341.8251

EVERGREEN MARINE CORP.

[About Us](#) [Corporate Sustainability](#) [Investor Relations](#)

The carbon emission data calculated by this system are based on the GLEC and Clean Cargo methodology or basis.

Select Routing Network

Routing Network

North East Asia - South East Asia Service - B

Port of Loading

MALAYSIA - PORT KLANG WEST PORT

Port of Discharge

TAIWAN - KAOHSIUNG

Please fill in unit value

30

TONs

Calculate (135)

Clear

Calculated Result

Routing Network

North East Asia - South East Asia Service - B

Port of Loading

MALAYSIA - PORT KLANG WEST PORT

Port of Discharge

TAIWAN - KAOHSIUNG

Distance (km)

3904

Carbon Emission (kg)

680.375

Net Zero Roadmap: Justifications and Assumptions

Below are the forecasted future developments which have been taken into consideration when planning this the decarbonisation roadmap for the company:

Malaysia's Carbon Pricing Mechanism

One of the primary catalysts will be Malaysia's Carbon Pricing Mechanism. As detailed in the NETR, Malaysia is committed to implementing this mechanism, which is led by the Ministry of Finance and the Ministry of Natural Resources and Environmental Sustainability. This initiative will be rolled out in carefully managed phases with two primary goals: to create clear market incentives for industries to decarbonise and to generate revenue for investments in the nation's green energy transition. The strategy, in short, aims to penalise pollution while financing the solution. For a company like Heveapac, this national policy will have direct financial implications, as it is anticipated that the company will be subject to this carbon tax. To prepare, Heveapac will likely use shadow carbon pricing, an internal strategy designed to forecast the potential financial impact of its emissions. This forward-looking approach allows the company to budget proactively. Instead of simply paying a recurring annual tax, Heveapac can strategically allocate capital towards decarbonisation methods. The objective is to make long-term investments that permanently reduce its carbon footprint, thereby minimising or eliminating its future tax liability.

Note : Future Scenario Derived Based on NETR (Section: Financing and Investments, Roll out carbon pricing mechanism, page 59)

New Regulations Driving Energy Efficiency

In conjunction with these supply-side changes, new regulations will drive energy efficiency. A key policy will be the forthcoming EECA, which is set to be a central pillar of Malaysia's energy policy. One of its core components is expected to be mandatory energy audits for large commercial and industrial consumers, compelling companies to analyse and report their energy consumption. For Heveapac, the EECA introduces a new, non-negotiable dimension to its strategy: demand-side management. While previous strategies focused on changing the source of electricity, the EECA forces the company to also reduce the amount it consumes. Heveapac's response would involve several steps, starting with compliance and data collection through comprehensive energy audits to establish a baseline. This would be followed by investment in efficiency upgrades, such as modernising aging equipment with high-efficiency motors and variable speed drives, and optimising operations by adjusting production schedules and improving insulation.

To accelerate these efforts, the NETR promotes the creation of a public ESCO platform. This platform will coordinate and streamline the retrofitting of buildings, fostering an ecosystem of specialised firms. Crucially, ESCOs remove the high upfront cost barrier through innovative financing models like "energy performance contracts," where the investment is paid for directly from the guaranteed energy savings. This significantly reduces or eliminates the need for a company to allocate its own capital. Furthermore, the NETR's national target of achieving 23% energy savings for the industrial and commercial sectors by 2050 will serve as a minimum Key Performance Indicator for Heveapac's internal program.

Note : Future Scenario Derived Based on NETR (Section: Energy Transition Levers and Key Initiatives, Establish an ESCO platform, page 29 & 30)

Malaysia's Push for Large-Scale Renewable Energy

In parallel, Malaysia's push for large-scale renewable energy offers a direct path for decarbonising grid-based consumption. To meet energy demands that surpass the capabilities of on-site generation, the NETR is championing direct procurement from large, utility-scale renewable energy projects. Spearheaded by Tenaga Nasional Berhad ("TNB"), this strategy focuses on two key initiatives. The first involves Centralised Large-Scale Solar ("LSS") Parks, where TNB, in partnership with Small Medium Enterprises, cooperatives, and state economic bodies, is developing five major solar parks, each with a deployment capacity of 100 MW, significantly boosting the nation's solar energy output. The second is the innovative Hybrid Hydro-Floating Solar PV ("HHFS") project, which aims to develop 2,500 MW of floating solar capacity at TNB's hydroelectric dam reservoirs. By combining solar power with hydropower, which acts as a form of energy storage, the HHFS system can provide a nearly continuous 24-hour supply of renewable energy. For Heveapac, which relies on the national grid, TNB's projects present a clear and direct path to reducing its Scope 2 emissions. As TNB greens its energy supply, Heveapac can shift its strategy from solely relying on on-site solutions to leveraging these new, utility-scale options. The company's response would likely involve a multi-pronged approach, such as participating in Corporate Green Power Agreements through a virtual power purchase agreement ("VPPA") or the CGPP to secure a long-term supply of certified clean energy. A more straightforward approach would be subscribing to TNB's GET program, which allows the company to pay a premium to ensure its consumption is sourced from renewable generation and backed by Renewable Energy Certificates (RECs).

Note : Future Scenario Derived Based on NETR (Section: NETR Flagship Catalyst Projects and Initiatives, Solar Park, Hybrid Hydro-Floating Solar PV (HHFS), page 53)

Transforming Malaysia's Energy Market: The Third-Party Access (“TPA”) Framework

A further transformation of Malaysia's energy market will come from the TPA framework. Introduced under the NETR, this initiative is arguably the most transformative for the electricity sector, as it fundamentally unbundles the market. Essentially, TPA allows independent power producers to sell electricity directly to corporate customers, using the existing national grid for transmission by paying a "wheeling fee."

This move breaks the traditional utility monopoly, creating a competitive marketplace for green electricity. Once fully implemented, TPA will empower a company like Heveapac to source renewable energy from a diverse range of producers, fostering price competition and enabling partnerships with the most cost-effective generators. The introduction of this framework presents a significant opportunity for Heveapac to accelerate its decarbonisation efforts. The corporate response would involve directly negotiating PPAs to secure long-term clean energy at competitive prices, providing cost stability. It would also allow for the diversification of energy sources from various renewable projects, enhancing energy security. By fostering a competitive market, TPA would enable Heveapac to shop for the best electricity rates, potentially lowering operational costs while meeting its ESG goals and strengthening sustainability reporting through verifiable data. In essence, the TPA framework shifts Heveapac from being a passive consumer to an active participant in the green energy market.

Note : Future Scenario Derived Based on NETR (Section: Energy Transition Levers and Key Initiatives, Set up RE exchange hub to enable cross-border RE trading, page 34 & 19)

New ASEAN International Renewable Energy Exchange Regulations

Looking ahead, the NETR also outlines a plan to establish a cross-border renewable energy exchange, positioning Malaysia as a regional hub. This initiative builds upon the established ASEAN Power Grid (“APG”) framework. A key example of this in action is Malaysia's pivotal role in the Lao PDR-Thailand-Malaysia-Singapore Power Integration Project (“LTMS-PIP”),

which serves as a "pathfinder" program to advance cross-border electricity trading. For a company like Heveapac, this long-term vision is strategically significant. The success of the LTMS-PIP paves the way for a fully realised RE exchange, which would offer access to a diverse pool of regional RE sources, such as hydropower from Laos, enhancing energy security.

Note : Future Scenario Derived Based on (NETR) (Section: Energy Transition Levers and Key Initiatives, Set up RE exchange hub to enable cross-border RE trading, page 34 & 19)

Malaysia's Carbon Capture, Utilisation and Storage

For hard-to-abate emissions inherent to certain industrial processes, Malaysia's NETR has identified CCUS as the pivotal technology, asserting that reaching net-zero will be "extremely challenging without CCUS." To execute this, Malaysia is developing a hub-based strategy to establish three CCUS hubs by 2030, capable of storing up to 15 million tonnes of CO₂ per annum (Mtpa) and scaling to a potential 40-80 Mtpa by 2050. Leading this charge are two major offshore catalyst projects in Sarawak: the Kasawari CCS Project by Petronas, set to capture an estimated 3.3 million metric tons of CO₂ annually, and the Lang Lebah CCS Project, a partnership including PTTEP and Petronas Carigali. These projects are expected to be in operation by 2026 and 2028 respectively (NETR Flagship Catalyst Projects and Initiatives, Kasawari and Lang Lebah CCS, page 49 & 50).

The most critical and immediate corporate response for Heveapac is to ensure that any new industrial facilities are designed to be "capture-ready," involving strategic plant layout planning to allow for future retrofitting of a carbon capture unit with minimal disruption.

Note : Future Scenario Derived Based on (NETR) (Section: Energy Transition Levers and Key Initiatives, Carbon Capture, Utilisation and Storage, page 49 & 50)

Hard-to-abate Emissions Offset by Carbon Credits

As a final, forward-looking component of its roadmap, Heveapac may strategically utilise the VCM to address residual emissions. This approach positions carbon offsetting not as a primary strategy, but as a complementary lever for achieving full carbon neutrality. Future engagement will be executed through transparent platforms, with a primary focus on the Bursa Carbon Exchange (BCX), to ensure credibility and alignment with national frameworks. The company will prioritise high-quality Malaysian carbon credits but may consider global

credits for diversification. To guarantee integrity, procurement will be governed by a stringent due diligence process, ensuring credits are of a recent vintage (2016 or later), certified by standards like Verra or Gold Standard, and offer verified co-benefits. To make a valid environmental claim, all procured credits will be permanently retired in their official registry, providing an auditable record of action. This process will adhere to Malaysian policy, which clarifies that such voluntary offsets support national climate targets without requiring a "Corresponding Adjustment," ensuring Heveapac's actions are both corporately responsible and nationally aligned.

Note : Future Scenario Derived Based on Voluntary Carbon Market Handbook by Bursa Malaysia Berhad and Malaysian Green Technology and Climate Change Corporation (MGTC), Section on Vintage Requirement pg 50, Internationally Recognised Standards (Verra/Gold Standard) pg 50, Permanent Retirement of Credits: pg 32.

Net Zero Roadmap: Limitation and Challenges

Static Emissions Baseline:

The entire roadmap and its phased reduction targets are modelled against a static carbon footprint baseline established in 2025. The projections assume that Heveapac's total CO₂ output from its core operations will not increase over the subsequent decades. This model does not account for potential emissions growth that could result from future business expansion, increased production capacity, or other strategic growth initiatives. As such, any significant expansion of operations would require a corresponding revision of this decarbonisation plan to accommodate the increased emissions load.

Strategic Focus on Scope 2 Emissions:

This roadmap places a deliberate and strategic emphasis on the reduction and elimination of Scope 2 emissions, which arise from purchased electricity. This focus is due to Scope 2 constituting the significant portion of the company's total carbon footprint. Consequently, the plan treats the comparatively small volume of Scope 1 emissions as a residual amount to be neutralised in the final phase through offsetting mechanisms like the VCM or CCUS services. While this represents the core strategy, it is acknowledged that economic and technologically viable opportunities may arise to reduce Scope 1 emissions directly (e.g., through fleet electrification). The pursuit of such opportunities is not factored into the current reduction

targets but would serve as a valuable bonus, accelerating Heveapac's overall decarbonisation performance.

External Dependencies and Areas of Uncertainty

While Heveapac's Net Zero roadmap represents a robust and actionable internal strategy, its successful execution is intrinsically linked to the timely and effective implementation of Malaysia's ambitious national energy transition policies. In the spirit of transparency and proactive risk management, it is important to acknowledge the external dependencies and areas of uncertainty that could influence the timeline and execution of our decarbonisation plan. These factors do not alter the roadmap's strategic direction but highlight critical areas that require continuous monitoring and strategic agility.

Dependency on National Grid Modernisation and Large-Scale RE Supply

The success of Phases 2 and 3 of our roadmap is contingent upon the parallel development of a modern and stable national grid capable of integrating a high penetration of renewable energy. The variable nature of solar power, which forms the backbone of the national strategy, necessitates significant investment in grid stabilisation technologies, energy storage systems, and upgraded transmission lines to ensure supply reliability. The timeline for the availability of green electricity LSS and HHFS projects is dependent on the execution of these large-scale infrastructure initiatives, which involves factors such as financing and regulatory processes. An additional area of uncertainty is the balance between corporate demand for green energy and the available supply from new projects, which often have defined quotas. This highlights the importance of a diversified procurement strategy and the strategic role of our final offsetting phase.

Uncertainty in the TPA Framework Implementation

Our strategy to engage in PPA is dependent on the successful implementation of the TPA framework. The transition to an open market model introduces several areas of uncertainty that require careful management at the national level. These include ensuring grid stability with multiple independent producers, managing potential grid congestion, and establishing a new model for ancillary services. A key variable in the success of the TPA will be the determination of a fair "wheeling fee." The regulatory process for setting this tariff will need to balance providing an economic incentive for TPA participation with ensuring sufficient

funding for ongoing grid maintenance and upgrades. The evolution of this framework is a key external factor we will monitor closely.

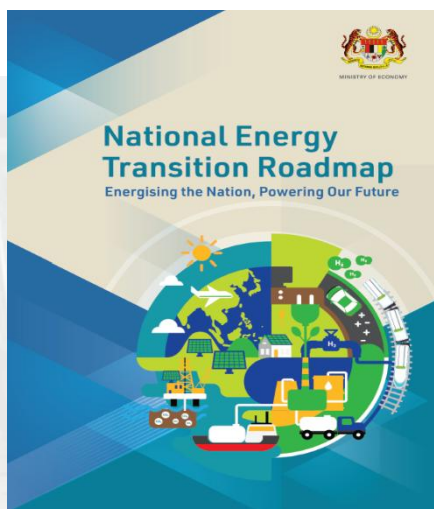
Considerations for Regional Energy Integration

The opportunity to leverage the ASEAN Power Grid and a regional RE exchange hub represents a promising long-term strategy, though it involves a greater degree of uncertainty compared to domestic initiatives. The successful integration of national grids presents complex technical considerations, such as synchronising diverse standards and managing cross-border grid stability. It also requires significant, capital-intensive upgrades to existing transmission infrastructure to support a high-volume, regional energy market. Accordingly, we view this as a valuable supplementary opportunity and will actively monitor its development and maturation.

By acknowledging these dependencies, Heveapac can maintain strategic foresight, allowing us to remain agile and adapt our procurement strategy as the national energy landscape evolves. This transparent approach ensures our decarbonisation journey is not only ambitious but also grounded in the realities of the broader energy transition.

Key References:

1. National Energy Transition Roadmap

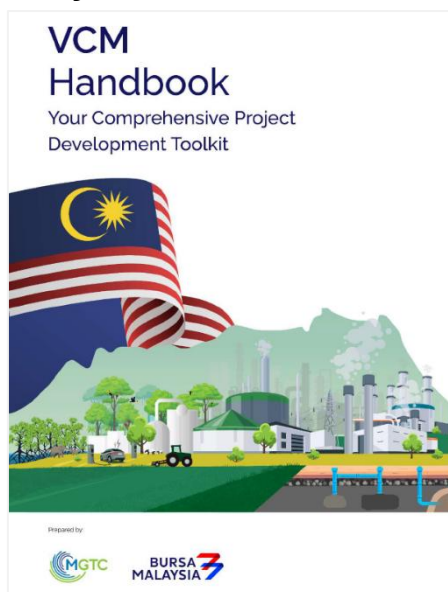


The NETR is a foundational policy document that outlines Malaysia's official strategy for shifting from a fossil fuel-based economy to a high-value, green economy. It details the nation's key initiatives, targets, and frameworks for developing renewable energy, promoting energy efficiency, establishing carbon pricing, and modernising the national grid to achieve its climate goals.

Authors and Endorsement: The NETR was authored and published by the Ministry of Economy of Malaysia.

Legitimacy as a Research Source: This document is a primary source of the highest legitimacy for any research concerning Malaysia's energy policy, decarbonisation strategy, and national economic planning. As it is an official publication from a federal ministry, it represents the government's formal position, plans, and commitments. It is an authoritative source for corporate strategy, academic research, and investment analysis related to the Malaysian energy sector.

Key References:



2. VCM Handbook: Your Comprehensive Project Development Toolkit

The VCM Handbook is a practical guide designed to help organisations understand and participate in the voluntary carbon market in Malaysia. It provides a detailed "toolkit" covering the technical aspects of developing carbon credit projects, including project cycles, methodologies, registration processes, and the specific rules and standards for trading on the Bursa Carbon Exchange ("BCX").

Authors and Endorsement: This handbook was jointly prepared by two key national bodies: Malaysian Green Technology and Climate Change Corporation ("MGTC"): An agency under the Ministry of Natural Resources and Environmental Sustainability tasked with driving green technology and climate action in Malaysia. Bursa Securities: The national stock exchange of Malaysia, which operates BCX.

Legitimacy as a Research Source: The VCM Handbook is a highly legitimate and authoritative source for research on the operational and regulatory aspects of Malaysia's voluntary carbon market. Its legitimacy comes from being co-authored by the primary government agency for climate action and the official national entity that operates the carbon exchange (Bursa Securities). It serves as an official, practical guide for any company or researcher looking to understand the rules, standards, and procedures for generating and trading carbon credits within the Malaysian framework.