



# SUSTAINABILITY REPORT 2024

TIPCO ASPHALT PUBLIC COMPANY LIMITED



## CONNECTING WAYS OF LIFE



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**TIPCO**  
ASPHALT





## MESSAGE FROM CEO

Tipco Asphalt Public Company Limited (the “Company”) aims to be a Sustainable Organization by establishing sustainability policies and strategies that align with the company’s strategic goal (S6 Sustainable Organization). This approach guides the Company’s operations across economic, social, and environmental dimensions under the principles of good corporate governance. By leveraging innovation and technology, the Company supports transparent business practices and prioritizes the safety and well-being of employees and the community. In 2024, the Company achieved significant milestones in various areas, including:

### ▲ Innovation leader

The Company has integrated innovation culture as part of its organizational strategy since 2018, with a focus on building a foundation of knowledge and understanding of innovation structures. This has been done through activities such as the Innovative Solutions Award, an innovation contest driven by employee initiatives, as well as training programs under the Innovation Bootcamp and the Innovation Accelerator program, which aims to incubate and develop innovative ideas into real, market-ready innovations. In 2024, two projects from the Innovation Awards program showed potential for further development.

### ▲ Eco-Efficiency Operations

The Company places importance on reducing the impact of its operations, products, and services. This includes establishment of relevant targets including reduction of GHG emissions of asphalt business in Thailand compared to the base year 2020. In response to this, the Company has crafted out multiple climate strategic projects. In 2024, the GHG emissions achieved its targets. In addition, the Company launched a green product called Tipco Joint Sealer, which received the Carbon Footprint Reduction Label from the Thailand Greenhouse Gas Management Organization (TGO).

### ▲ Safety Awareness

The Company has operated within the legal framework and promotes safety awareness among employees and stakeholders in accordance with international management standards, namely ISO 45001 for Occupational Health and Safety Management Systems and ISO 39001 for Road Traffic Safety Management. The Company has set clear targets, including zero fatalities and zero product spills during transportation. In 2024, the Company successfully met both targets.

### ▲ Good Corporate Governance

The Company has adhered good corporate governance practices across multiple dimensions. One of them is Anti-Corruption. The Company is a certified member of the Thai Private Sector Collective Action against Corruption (CAC). Currently, the Company has successfully renewed its certification for the second round in June 2023, and the certification remains valid until June 30, 2026.

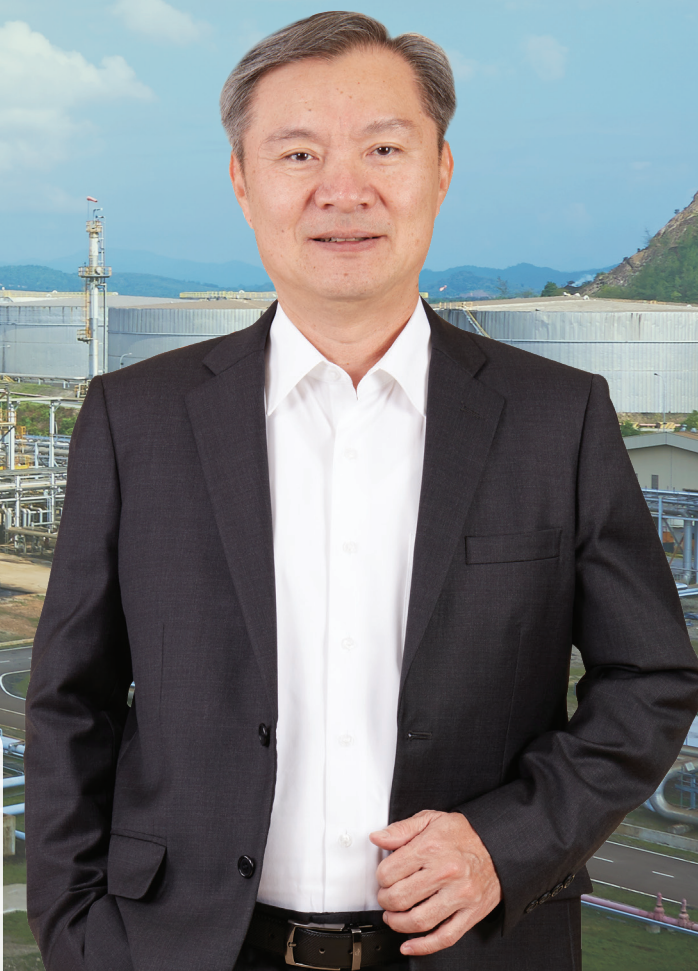
### ▲ Value for the Future

The Company believes that employees are a crucial driving force for sustainable business growth. To this end, the Company participated in the ESG DNA program organized by the Stock Exchange of Thailand, aiming to raise awareness among personnel throughout the organization. A total of 508 employees participated and successfully completed the assessments for the courses of P01 ESG101 and CFO01, achieving a 100% completion rate.

Since May 24<sup>th</sup> 2023, the Company has become a member of the UN Global Compact (UNGC) to strengthen and elevate its sustainable development efforts by adhering to the 10 principles of the UNGC in accordance with the Company’s operational scope.

Through dedicated efforts throughout 2024, the Company has successfully advanced its sustainable development agenda, earning several prestigious awards:

- The Company received the 2023 Sustainability Disclosure Award from Thaipat Institute for the 6<sup>th</sup> consecutive years
- The Company achieves an "AA" rating in the SET ESG Ratings by the Stock Exchange of Thailand



- The Company achieved a 74<sup>th</sup> percentile score in the S&P Global Corporate Sustainability Assessment (CSA)

- All 5-asphalt plant in Thailand received the highest level (Level 5) Green Industry Award from the Department of Industrial Works, Ministry of Industry.

These achievements highlight the steadfast commitment to continuous sustainable development, adhering to business principles that consider society, the environment, and good corporate governance, ultimately creating shared value.



**Mr. Chaiwat Srivalwat**  
Chief Executive Officer



## About this report



Tipco Asphalt Public Company Limited and its subsidiaries ("the Group") have prepared the Sustainability Report for the year 2024 (January 1, 2024 – December 31, 2024). This report is prepared in accordance with the Group's sustainability strategy to provide non-financial information to relevant stakeholders, enabling them to understand the Group's business operations that align with sustainable development guidelines. It communicates strategic directions and management approaches regarding key operational issues that impact both the business and all stakeholder groups across the value chain in 2024. The report also outlines progress on sustainability performance and alignment with the United Nations Sustainable Development Goals (SDGs).

## Reporting Assurance



This Sustainability Report has been verified for accuracy and reliability of environmental and safety performance results by the Management System Certification Institute (Thailand) - MASCI, an ISO certification body. The assurance statement is presented in the section titled "External Assurance" on page 147 of this report.

## Key Content and Changes



To reflect the changes in greenhouse gas emission factors (GHGs Emission Factor: EF) announced by the Thailand Greenhouse Gas Management Organization (Public Organization) in its most recent publication on April 1, 2022, the Company recalculated its Scope 1 GHG emissions for the years 2020–2021 using the updated EF values. As a result of this recalculation, the figures showed only a minor decrease of 0.1% compared to the previously reported values for the same years.

## Get to Know Tipco Asphalt Group. Leader in the Asphalt Business

Tipco Asphalt Group was founded by Mr. Prasit Supasakorn, who started the oil & gas business as an oil dealer and gas station operator. Subsequently, the Group entered into the asphalt business as a drummed asphalt truck delivery contractor for the Department of Highways. The Group recognized that asphalt is a crucial raw material for road construction and essential infrastructure development in the country, including production, transportation, export, and other aspects. Mr. Prasit Supasakorn decided to construct the first asphalt emulsion plant in Lat Krabang Industrial Estate in 1979.

Since its inception, the Group has aimed to be a responsible member of society through its commitment to conducting business with good corporate social responsibility through offering and promoting the use of asphalt emulsion in road construction and maintenance, as asphalt emulsion uses water as an ingredient, eliminating the need for high heat during application and hence reducing pollution, making it more environmentally friendly than conventional asphalt.

Tipco Asphalt Group is a leader in the production and distribution of a full range of asphalt products for use in roads and highways construction, pavement maintenance, elevated roads, and airport runways in Thailand and the Asia-Pacific region. The asphalt products are manufactured at the Group's refineries in Malaysia and other production plants in many countries in the region and delivered to customers and subsidiaries in various countries such as Laos, Cambodia, Vietnam, Indonesia, China, the Philippines, Malaysia, and India, primarily through the Group's trucks and asphalt tankers. The subsidiaries produce and deliver asphalt products that meet the market demands in their respective countries.

Furthermore, the Group exports asphalt products to importers, construction contractors, and road maintenance companies from other regions, such as Australia, New Zealand, Qatar, Mauritius, Réunion, America, and South Africa.





## Tipco Asphalt Group Value Chain

The Group's business consists of 4 main business: refinery business, domestic and international asphalt business, marine business, and construction business.



The key activities related to the Group's core businesses are illustrated in the diagram below.

### Activities Throughout the Value Chain

Activity	Related Stakeholders
<b>Main Activity</b>	
<b>Procurement</b> Procurement of asphalt and raw materials	<ul style="list-style-type: none"> <li>Suppliers / Partners: Products and services distributors</li> <li>Competitors: Products and services distributors</li> <li>Employees: Producers</li> </ul>
<b>Refinery</b> Crude refinery	<ul style="list-style-type: none"> <li>Government Agencies: Conduct business in accordance with regulations and ethics</li> <li>Communities: May be affected by the activity</li> <li>Employees: Producers</li> </ul>
<b>Production</b> Convert raw materials into premium grade asphalt products	<ul style="list-style-type: none"> <li>Government Agencies: Conduct business in accordance with regulations and ethics</li> <li>Communities: May be affected by the activity</li> <li>Employees: Producers</li> </ul>
<b>Marketing and Sales</b> Provide products and services to meet domestic and international customers' expectations	<ul style="list-style-type: none"> <li>Government Agencies: Conduct business in accordance with regulations and ethics</li> <li>Customers: Determine the characteristics of the products and services</li> <li>Communities: May be affected by the activity</li> <li>Employees: Producers</li> </ul>
<b>Distribution</b> Distribute products to customers via domestic trucks and international vessels	<ul style="list-style-type: none"> <li>Government Agencies: Conduct business in accordance with regulations and ethics</li> <li>Customers: Determine the characteristics of the products and services</li> <li>Road Users: May be affected by the activity</li> <li>Communities: May be affected by the activity</li> <li>Employees: Producers</li> </ul>
<b>Construction</b> techniques and expertise, entrusted and registered by government agencies	<ul style="list-style-type: none"> <li>Government Agencies: Conduct business in accordance with regulations and ethics</li> <li>Road Users: May be affected by the activity</li> <li>Communities: May be affected by the activity</li> <li>Employees: Producers</li> </ul>
Providing Technical Service and Knowledge Providing technical services, equipped with product and application know-how to our customers for on-site assistance	<ul style="list-style-type: none"> <li>Customers: Determine the characteristics of the products and services</li> <li>Road Users: May be affected by the activity</li> <li>Employees: Producers</li> </ul>
<b>Support Activity</b>	
<b>Mass Media</b> Disclose business plans, performance and timely information to the public	<ul style="list-style-type: none"> <li>Shareholders / Investors: Review and/or approve work plans, budgets and assign roles and responsibilities to the Board of Directors</li> <li>Board of Directors: Review and/or approve plans, including budgets, and assign roles and responsibilities to management</li> <li>Media: Inquire and disseminate about the company's information</li> <li>Employees: Producers</li> </ul>



## Roles, Responsibilities, and Governance Structure for Driving Sustainable Development



The Board of Directors has established the Sustainability and Corporate Governance Committee, which is responsible for overseeing the Group's sustainability initiatives and corporate governance practices. The Sustainability and Corporate Governance Committee ensures that all operations align with the Group's guidelines, policies, and strategies for sustainable development and good corporate governance.

Structure	Roles and Responsibilities	Frequency
Board of directors	Approve strategies, goals, and budgets for sustainable development.	Quarterly (4 times)
Sustainable Development and Corporate Governance Committee	<b>Sustainable Development</b> <ol style="list-style-type: none"> <li>To establish the Company's sustainable development target, policy framework and guidelines in line with the Company business operations to promote innovation, social and environmental aspects while proposing them to the Board of Directors for consideration and approval;</li> <li>To regularly review the Company's sustainable development target, policy framework and guidelines in response to changing of global trends, business environment, laws, international guidelines while taking into consideration of shareholders' expectations and present to the Board of Directors for consideration and approval of amendment;</li> <li>To acknowledge and consider the sustainability strategies while promoting and supporting activities to achieve the Group's sustainability goals;</li> <li>To consider the annual budgets related to sustainability issues and propose it to the Board of Directors for approval and/or acknowledgement; and</li> <li>To regularly report sustainable development performances and progresses including key sustainable development issues relating to environment, social responsibility, and sustainability management to the Board of Directors for acknowledgement.</li> </ol> <b>Corporate Governance</b> <ol style="list-style-type: none"> <li>To establish and/or review corporate governance target, policy framework and guidelines in compliance with the laws and regulations, corporate governance guidelines from relevant agencies and/or regulators for Board of Directors approval/acknowledgement;</li> <li>To monitor corporate governance performance as in line with the policy and goals; and</li> <li>To regularly report performance progress to the Board of Directors for acknowledgement.</li> </ol>	Quarterly (4 times)
Sustainable Development Team	<ol style="list-style-type: none"> <li>Present the goals, policies, plans, and performance results, which have been reviewed by the Chief Executive Officer, to the Sustainability Development and Good Corporate Governance Committee.</li> <li>Communicate the operational framework and collaborate in defining policies, strategies, goals, and action plans on sustainability with various departments.</li> </ol>	Quarterly (4 times)

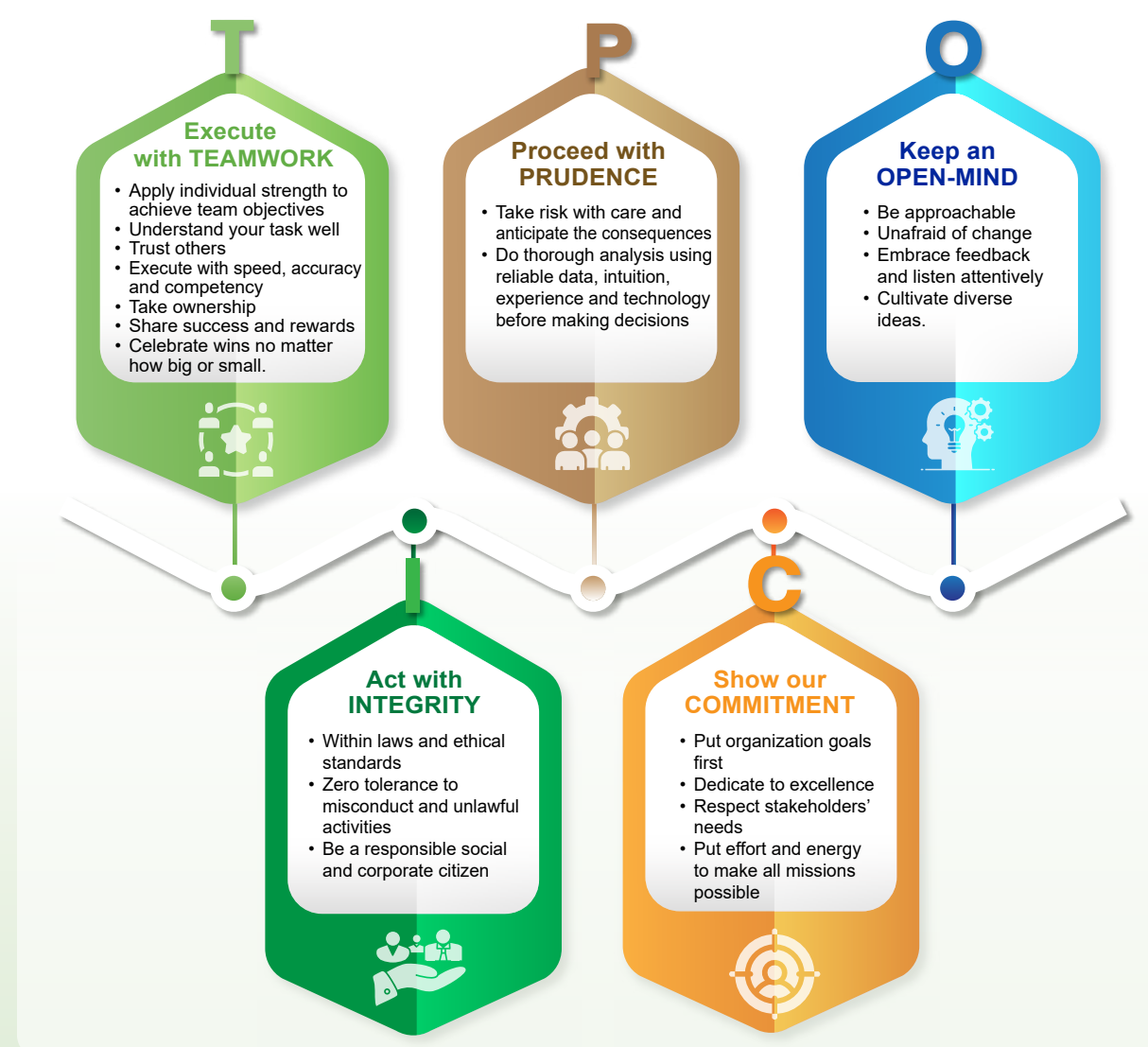
## Corporate Strategy and Vision 2025





## Core Values: A Pathway to Tipco Asphalt's Integration and Innovation Culture

Tipco Asphalt Group embraces the "TIPCO" Corporate Values, consisting of 5 principles applied in conducting business operations in accordance with corporate governance, social responsibility, and transparency. The company's board of directors, executives, and employees are committed to upholding and adhering to these corporate values consistently, fostering trust, openness, and accountability among all stakeholders. This commitment has earned the trust of being a transparent, scrutinizable, and accountable organization, allowing everyone involved to contribute to creating an innovative culture embedded in every aspect of the company's operations. Encouraging participation in creating change, enhancing efficiency, and fostering a culture of continuous improvement, empowering employees to embrace new technologies and adapt to ever-changing global dynamics. With a strong foundation rooted in innovation, creativity, and continuous learning, these guiding principles lead to the development of a robust and sustainable organization, poised for steady and enduring growth

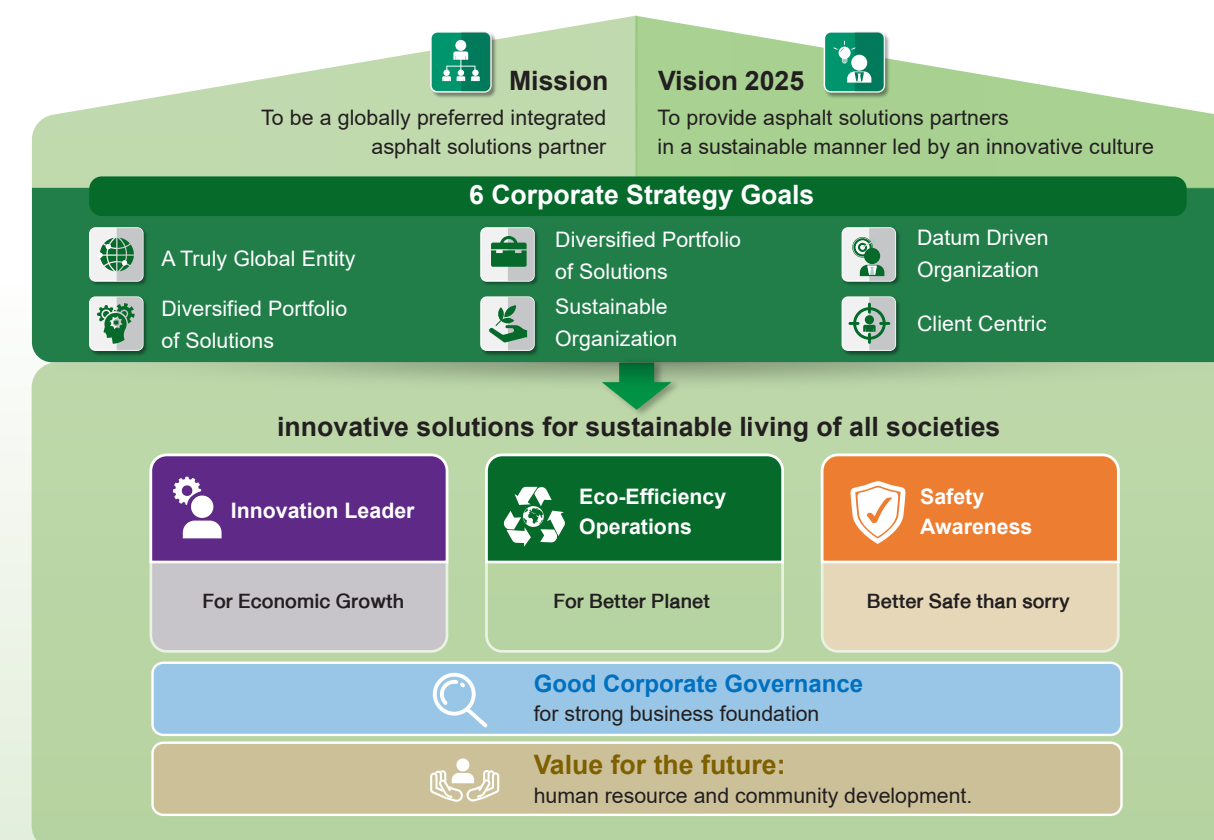


## Tipco Asphalt Group: Sustainable Development Strategies

In accordance with the Mission and Vision 2025, Tipco Asphalt Group has defined six strategic objectives, which have been integrated into the organization's business strategies to achieve sustainable development goals. These strategic objectives are aimed at transforming the organization into a sustainable entity, outlined within the organization's strategy framework.

The Sustainability Development Framework of the Tipco Asphalt Group is a fundamental operating principle that specifies appropriate practices in accordance with international principles and standards to achieve the vision of sustainable development. The Group is committed to strengthening its long-term potential and performance through sustainable development with three sustainability strategies and principles:

- 1. Innovation Leader:** Proposing new ideas and innovations to meet market demands and establish industry leadership.
- 2. Eco-efficiency Operations:** Conducting business activities with an emphasis on resource efficiency and reducing environmental impact.
- 3. Safety Awareness:** Creating a safe environment and promoting secure work within the organization. These strategies are driven by two key principles of sustainable development:
  - 1. Good Corporate Governance:** Providing clear information and data to stakeholders and conducting activities in accordance with the principles and standards of good corporate governance.
  - 2. Value for the Future - People Development:** Developing and promoting employees to prepare for the organization's future and create value for sustainable personnel development.



# TIPCO Asphalt Group Sustainable Development Milestones

## Phase 1

### Lay Foundation (2016-2018)

- Develop people, adding basic values to sustainability
- Good corporate governance, as foundation for sustainability
- Effective risk management, with execution according to plans
- Set of sustainable development goals and effective communication
- Enhance the organization's sustainability knowledge
- Education of the team understanding and progress towards common goals



### 2011

- Formulated the Mission and Vision 2015 by including Corporate Social Responsibility in the corporate vision
- Established on policy on Social Responsibility and Community Engagement

### 2012

- Study the guidelines for the preparation Enterprise Risk Management
- Adopt Social Responsibility guideline ISO 26000 in the organization

### 2015

- SET the Mission and Vision 2020 by including sustainable social responsibility into the corporate vision
- As risk management became one of the corporate strategic goals, risk registration according to the COSO standard was created
- 5-Star rating (Excellence) for from the Corporate Governance Report of Thai Listed Companies (CGR) for the first time

### 2016

- Began strategic planning for sustainability covering economic, social and environmental aspects, aligning with the corporate strategy
- The Group received an Excellent 5-Star rating in the Corporate Governance Report of Thai Listed Companies (CGR) survey
- Launched innovation initiatives

### 2017

- The Company joined as the membership of the Thai Private Sector Collective Action Against Corruption (CAC)

### 2018

- The first annual Sustainability report was launched and started to collect management data on key materiality for sustainability
- The Group was awarded received an Excellent 5-Star rating in the Corporate Governance Report of Thai Listed Companies (CGR) survey
- Continued innovation initiatives



## Phase 2

### Drive Sustainable Business (2019-2021)

- Create value for products and services by using creative innovation
- Improve the work processes to increase for business competency as well as reduce environmental impact
- Focus on raising awareness of the safety of stakeholders
- Disclose sustainability information transparently, build business confidence strong business alliance relationships
- Cultivate a sustainable DNA throughout the organization



### 2019

- Set mission and Vision 2025 in corporate vision
- Established a policy on Social Responsibility and Community Engagement
- The Group was awarded Sustainability Disclosure Award from Thaipat Institute for the first time



### 2020

- The Company was recertified with the Thai Private Sector Collective Action Against Corruption (CAC) membership for the first round



### 2021

- Reviewed and enact a new Environmental policy that is consistent with the organization's sustainable development strategy plan
- ESG ratings from international rating organization such as S&P Global
- Implemented personal data protection as well as appointed a data protection officer, responsible Personal Data Protection Act (PDPA)
- Awarded Sustainability Award in the category 'Highly Commended'
- Reviewed of Human Rights Policy



## Phase 3

### Leverage on sustainability (2022-2025)

- Implement plans to continuously reduce Greenhouse Gas (GHG) through ongoing emission reduction efforts
- Long-term Greenhouse Gas Management plan
- Consider collecting analytical data on other import sustainability issues such as human rights, bio-diversity
- Formulate corporate strategic plan for the year 2030
- Expand the scope of work on sustainable development to other business groups and subsidiaries

### 2022

- Be a learning hub and innovation leader in asphalt innovation for road construction, including newconstruction, road maintenance and advanced applications
- Build a sustainability alliance network with various organizations both domestically and internationally
- Participate in the sustainability assessments program of international credit rating agencies



### 2023

- The Group created International Financial Reporting Standards IFRS S2 report: Climate-related Disclosures for the first time. The report includes climate-related financial disclosures on risks and opportunities per IFRS S2 standards.
- Has reviewed on the Climate Strategy
- Has expanded sustainable development practices to the Refinery, Marine, and Construction business
- The Company was recertified with CAC membership for the second round



### 2024

- Launched a green product, Tipco Joint Sealer, which has been certified with the Carbon Reduction Label by the Thailand Greenhouse Gas Management Organization (TGO).
- Fostered a sustainability-oriented mindset (DNA) among all employees in alignment with the Company's sustainability strategy, "Value for Future", through participation in the ESG DNA Program organized by the Stock Exchange of Thailand (SET).

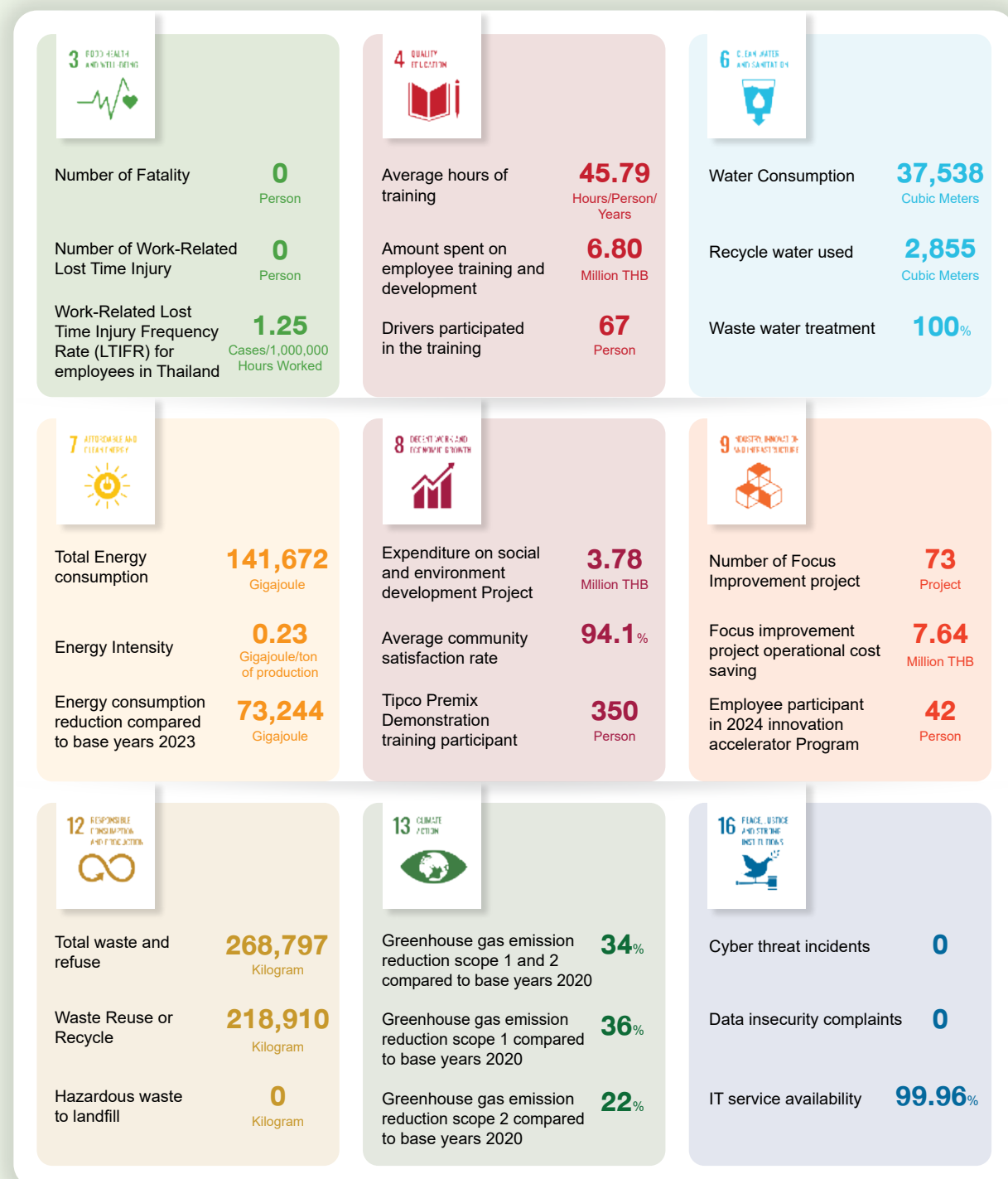




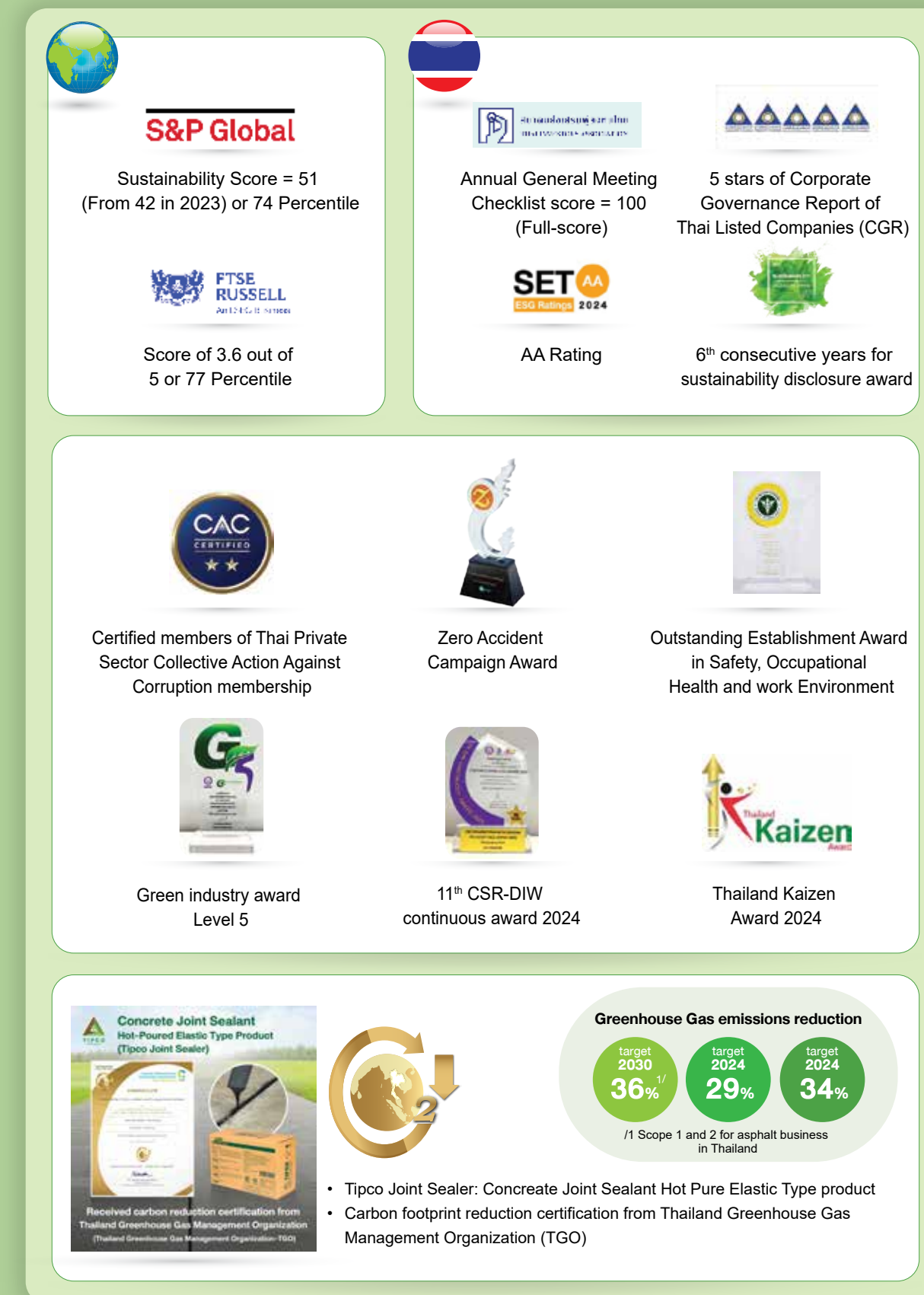
## Sustainable Development Goals (UN SDGs)

### Performance in 2024

The Group recognize the importance of sustainable development, the Group integrate sustainability as part of core strategy under Vision 2025 in order to ensure that business operations and management processes meet the expectations and key concerns of employees and stakeholders across the value chain.



## Achievement in Sustainability Development



## Certified National and International Standards

The Group has integrated various international management systems into its operations, ensuring compliance with quality, environmental, occupational health and safety, information security, and social responsibility standards. This comprehensive approach ensures that employees work systematically in a suitable environment, enhancing efficiency and effectiveness.

Business Group/Company	Asphalt Business				Marine Group	Construction Group
	Tipco Asphalt Public Company Limited	Thai Bitumen Company Limited	Raycol Asphalt Company Limited	KBC Refinery	Tipco Maritime Company Limited	Thai Slurry Seal Company Limited
Certified Standards	ISO 9001:2015 Quality	●	●	●	●	●
	ISO 140001:2015 Environment	●	●	●	●	
	ISO 45001:2018 Occupational health and safety	●	●	●		
	IMS Integrated Management	●	●			
	ISO/IEC 17026:2017 Laboratory	●		●		
	ISO 39001:2012 Road Traffic Safety	●	●	●		
	TLS 8001:2020 Thai Labor Standards	●				
	ISO/IEC 27001:2022 Information Security Standards	●				
Guidelines	ISO 26000:2010 Social Responsibility	●	●	●		
	ISO 31000:2018 Risk Management	●				
	ISO/PAS 45005:2020 Guidelines for working safely during the Covid-19 outbreak	●	●	●		

## Tipco Asphalt Group's Sustainable Development Policy and Governance

The Group has developed a sustainable development framework, which has been approved and officially announced since 2017, including its strategies and goals. The Group has communicated its sustainability value “Delivering Sustainable Living to All Societies through Creative Innovation”—to ensure that both employees and stakeholders understand and work together toward a shared organizational goal. A governance structure has been established to systematically and effectively monitor performance on sustainability, which is integrated into the business operations. This enables all employees to implement the strategic plans in a way that fosters continuous development and delivers successful outcomes beneficial to both the organization and society. Clear communication with employees and stakeholders is also emphasized to promote understanding and participation.

The Group respects fundamental rights and freedoms of individuals, demonstrating its awareness of the importance of human rights for all stakeholder groups. It also acknowledges key human rights issues or risks of adverse impacts that may arise in the Group's activities along the expanding value chain as the company grows. This awareness underscores the Group's strong emphasis on and commitment to respecting human rights. As a result, the Group has established a Human Rights Policy to demonstrate its intention to protect employees, customers, business partners, road users, local communities, vulnerable groups, and all stakeholders across the value chain. Details of this policy have been publicly disclosed on the Group's website.



Sustainability Policy



Human Rights Policy





## Tipco Asphalt Group: Stakeholder Relationship Management

The Group recognizes that effective stakeholder engagement is fundamental to our sustainable growth and long-term success. The Group understands that its operations may impact stakeholders, and committed to engaging them in a respectful, and timely manner. The Group acknowledges the importance of listening to stakeholder concerns, addressing their expectations, and integrating their insights into corporate operations. This recognition drives the Group to continuously improve its engagement practices, promote mutual understanding, and build trust across all stakeholder groups.

Effective stakeholder engagement is essential for building trust, enhancing transparency, and ensuring the success and sustainability of the Group's own operations. This Stakeholder Engagement Policy outlines our commitment to identifying, understanding, and addressing the interests, concerns and vulnerability of individuals and groups who are affected by or can affect the Group's own operations. By fostering open, inclusive, and respectful dialogue, we aim to create long-term, positive relationships that support mutual goals and shared value.

The Group places utmost importance on the participation of stakeholders, believing firmly that constructive relationships built on trust and receptivity to feedback are invaluable assets guiding the organization towards sustained growth. Hence, Stakeholder Engagement policy, approved by the Board of Directors on 12 May 2021, is established to efficiently manage stakeholders, ensuring responsiveness to their expectations and needs in every aspect. This is aimed at mitigating risks in reputation and halting business disruptions.

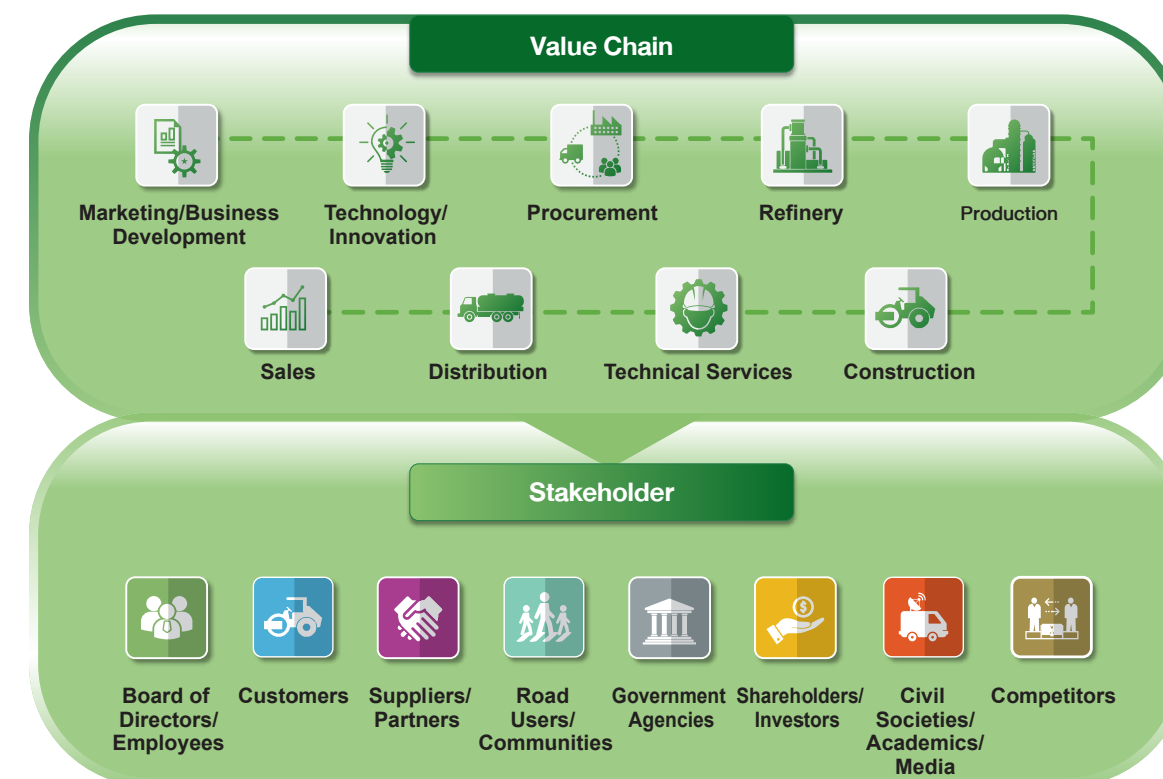
The Group has systematically developed the "Stakeholder Management guideline" to serve as a clear guideline for engaging with and managing relationships with all stakeholder groups. This manual covers the processes of identifying stakeholder groups, prioritizing them, and outlining approaches to manage and respond to their expectations or concerns. The manual outlines four key steps in stakeholder management, which are: 1) Stakeholder Identification; 2) Stakeholder Prioritization; 3) Stakeholder Engagement and response; and 4) Complaints Mechanism for Stakeholders.

These details were reviewed and acknowledged in 2024 during the Sustainability Development and Corporate Governance Committee No.1/2025. The Group clearly follows stakeholder engagement guidelines based on the principles of inclusiveness, transparency, and mutual respect. The following approaches contribute to building trust-based relationships and promote sustainability, as well as responsible business practices, as outlined below:



### 1. Stakeholder Identification

As part of identifying the stakeholder of the Group, considerations have been made according to the value chain, responsibility, influence, and impact as follows:



#### Definition of respective stakeholder groups are as follows:

- Board of Directors/Employees**  
who drive strategic direction and enhance operational excellence
- Customers**  
whose needs and satisfaction are central to the business
- Suppliers/Partners**  
who support the value chain and ensure quality and reliability
- Shareholders and Investors**  
who contribute to the Group's financial sustainability
- Competitors**  
who foster a dynamic market environment and encourage continuous improvement;

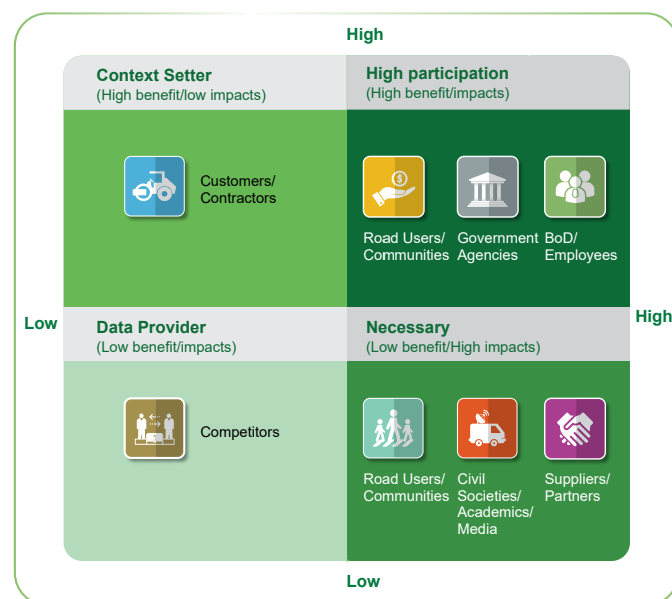
#### Local Stakeholders:

- Road Users/Communities**  
who are directly affected by the Group's products and activities;
- Government Agencies**  
who provide regulatory oversight and policy guidance; and
- Civil Society/Academics/Media**  
who offer insights, knowledge, and public perspectives.



## 2. Stakeholder Prioritization

The prioritization of stakeholders is based on two criteria: the level of benefit from the organization's operations and the level of impact that the organization's operations have on the stakeholders



## 3. Stakeholder Engagement and Response

The Group has established a process that allows stakeholders to actively participate and express their opinions, which are taken into consideration in the development of strategic plans and policies. In 2024, there are 4 steps as follows:

### 3.1 Stakeholder Engagement Planning

The Group plans to ensure structured, consistent, and goal-oriented interactions with each stakeholder group. Tailored to the needs and priorities of each stakeholder, the plans help foster meaningful relationships, manage expectations, and support the company's strategic and sustainability objectives.

### 3.2 Stakeholder Engagement Monitoring and Reporting

The Group monitors and reports on stakeholder engagement activities to ensure continuous improvement.

Engagement outcomes are regularly tracked against defined objectives, and stakeholder feedback is analyzed to identify trends, concerns, and opportunities.

### 3.3 Disclosure of Stakeholder Engagement Results

The Group is committed to transparently disclosing the results of its stakeholder engagement activities. This disclosure demonstrates accountability and shows how stakeholder input is incorporated into the Group's strategies and reinforcing its commitment to responsible and inclusive business practices.

### 3.4 Dialogue with Stakeholders

The Group values open and continuous dialogue with its stakeholders as a cornerstone of responsible business conduct. Through both formal and informal channels—such as meetings, surveys, and digital communication, the company encourages two-way communication to understand stakeholder needs, share relevant information, and collaboratively address concerns.

## 4. Complaints Mechanism for Stakeholders

The Group has established a clear and accessible complaints mechanism to ensure stakeholders can raise concerns or report issues related to the company's operations. Stakeholders can submit complaints through designated channels below: <https://www.tipcoasphalt.com/corporate-governance/whistleblowing-policy/?lang=en>

Proactive engagement with stakeholder groups promotes the Group's commitment to conducting business with transparency and responsibility, and supports sustainable development. The outcomes of this process reflect the expectations and concerns of respective stakeholder group, as detailed below:

## Details of Stakeholder Analysis and Result

### Board of Directors / Employees

Stakeholder	Board of Directors
Stakeholders' expectations	<ul style="list-style-type: none"> <li>- Conduct business in compliance with laws, regulations, and business ethics</li> <li>- Operate under the principles of sustainable development, considering the impact on the economy, society, and environment</li> </ul>
Responses to stakeholder expectations	<ul style="list-style-type: none"> <li>- Report change in relevant regulations to Board of Directors</li> <li>- Participate in corporate governance and sustainability projects such as CGR, CAC, and SET ESG Rating</li> </ul>
Channels for engagement and communication	<ul style="list-style-type: none"> <li>- Internal meeting</li> </ul>
Result	<ul style="list-style-type: none"> <li>- A report to Audit Committee per year</li> <li>- Achieved CGR score of 5 stars ("Excellent" level)</li> <li>- A certified member under Thai Private Sector Collective Action Against Corruption</li> <li>- Achieved SET ESG Rating score of 85</li> </ul>
Stakeholder	Board of Directors
Stakeholders' expectations	<ul style="list-style-type: none"> <li>- Respect for the basic rights and freedoms of employees</li> <li>- Receiving fair and appropriate compensation and benefits</li> <li>- Having a good quality of work life, supported by necessary resources and environment for work</li> <li>- Receiving development and opportunities for career advancement</li> </ul>
Responses to stakeholder expectations	<ul style="list-style-type: none"> <li>- Organizing the Workplace Welfare Committee meeting every quarter and the Thai Labor Standards Committee meeting twice a year</li> <li>- Conducting employee engagement surveys</li> <li>- Activities under the Employee Wellness Program, covering financial, physical, and mental health</li> <li>- Employee development and promotions</li> </ul>
Channels for engagement and communication	<ul style="list-style-type: none"> <li>- Internal Meeting</li> <li>- Employee representatives on the Workplace Welfare Committee and the Thai Labor Standards Committee.</li> <li>- 2 times of Employee Engagement Survey</li> <li>- Staff meeting on least twice a year with 2 ways communication: CEO communicate performance to employees and employees raise question to CEO</li> <li>- Internal communication platform such as TIPCO connect and Intranet</li> </ul>

Stakeholder	Board of Directors
<b>Result</b>	<ul style="list-style-type: none"> <li>- The employee engagement survey showed a 77.50% positive response rate (year 2024).</li> <li>- The voluntary resignation rate is less than 10.00%.</li> <li>- Activities include "HAPPY MONEY" and stress relief culminating in a MINDFUL SESSION on World Mental Health Day.</li> <li>- Course curriculums are set for each employee group, with Individual Development Plans (IDP) prepared for employees, including consideration of promotions.</li> </ul>

### Government Agencies and Regulators

Stakeholder	Government Agencies and Regulators
<b>Stakeholders' expectations</b>	<ul style="list-style-type: none"> <li>- Disclose accurate and complete information to ensure transparency, accountability, and compliance with relevant laws and regulations.</li> <li>- Policies and processes focused on anti-corruption and establishment of whistleblowing mechanisms.</li> <li>- Participation and feedback from the Company regarding upcoming law and regulation during hearing process.</li> <li>- Comply with law and regulation and requirement of other regulatory bodies</li> </ul>
<b>Responses to stakeholder expectations</b>	<ul style="list-style-type: none"> <li>- Communicate the company's performance to the public through available channels.</li> <li>- Establish policy and procedure on anti-corruption in accordance with CAC</li> <li>- Provide feedback during meetings and opinions regarding rules, regulations, and standards related to regulatory bodies.</li> <li>- Compliance assessment on law and regulator accordance to company policy</li> <li>- Prepare documents and provide relevant information to the management to ensure compliance with regulations and directives</li> </ul>
<b>Channels for engagement and communication</b>	<ul style="list-style-type: none"> <li>- Report information through the Stock Exchange of Thailand and other relevant channels</li> <li>- Participate and assess in the Thailand Private Sector Collective Action Coalition Against Corruption (CAC)</li> <li>- Attend meeting regarding relevant law and regulation, standard, and other relevant guidelines</li> </ul>
<b>Result</b>	<ul style="list-style-type: none"> <li>- Submit performance disclosure to the Stock Exchange of Thailand at least 4 times per year</li> <li>- Certified member under the CAC program from June 30, 2023, to June 30, 2026</li> <li>- Participate in hearings sessions with the SET (Stock Exchange of Thailand) and SEC (Securities and Exchange Commission) in 2024</li> <li>- License remains valid without expiration</li> </ul>

### Shareholders / Investors

Stakeholder	Shareholders / Investors
<b>Stakeholders' expectations</b>	<ul style="list-style-type: none"> <li>- Transparent and fair disclosure of company information</li> <li>- Return on investment</li> <li>- Inquiries and feedback channel</li> </ul>
<b>Responses to stakeholder expectations</b>	<ul style="list-style-type: none"> <li>- Disclose performance and sustainability information in compliance with applicable regulations.</li> <li>- Report financial statements and Management Discussion and Analysis (MD&amp;A) on a quarterly basis.</li> <li>- Provide communication channel to Company</li> </ul>
<b>Channels for engagement and communication</b>	<ul style="list-style-type: none"> <li>- An Annual General Meeting (AGM)</li> <li>- Analyst meeting and Opportunity day</li> <li>- 56-1 One report and sustainability report</li> <li>- Financial statement and material event disclosure on Stock Exchange of Thailand</li> <li>- Online communication telephone and email and etc.</li> </ul>
<b>Result</b>	<ul style="list-style-type: none"> <li>- Hold AGM</li> <li>- Organize 4 Analyst Meetings and participate in 4 Opportunity Day events per year, together with 1-on-1 meetings</li> <li>- Reports are prepared according to the scheduled reporting cycle</li> <li>- Annual dividend of 0.90 Baht per share</li> <li>- The Company regularly receives suggestions and requests from investors</li> </ul>





## Suppliers / Business Partners

Stakeholder	Suppliers / Business Partners
<b>Stakeholders' expectations</b>	<ul style="list-style-type: none"> <li>- Fair procurement practices, ensuring the equitable treatment of all business partners.</li> <li>- Select suppliers in a systematic, transparent, and accountable manner.</li> <li>- Support suppliers in developing knowledge and the ability to adapt to sustainable procurement practices, along with the continuous improvement of procurement practices.</li> <li>- License remains valid without expiration</li> </ul>
<b>Responses to stakeholder expectations</b>	<ul style="list-style-type: none"> <li>- Establish a sustainable procurement policy to ensure suppliers' confidence in the fairness of the procurement process, with a commitment to good corporate governance toward achieving sustainability development.</li> <li>- Establish a supplier code of conduct and encourage suppliers to adhere to business ethics.</li> <li>- There are procedure for assessing and the procurement bidding process for supplier in accordance with work instruction.</li> <li>- Cooperate training and seminars for suppliers on various beneficial topics upon request.</li> <li>- Develop and exchange knowledge to raise awareness of environmental issues for adaptation in their operations toward the "Green Industry".</li> </ul>
<b>Channels for engagement and communication</b>	<ul style="list-style-type: none"> <li>- Policy on website</li> <li>- Communicate the supplier code of conduct and support suppliers in achieving sustainability.</li> <li>- Distribute the supplier code of conduct to suppliers of raw materials and packaging that are critical to the business.</li> <li>- Provide guidelines for supplier operations through an online system, including consultation and communication.</li> <li>- Supplier audit by Company or self-supplier audit according to guideline</li> <li>- Provide training to partners through online communication channels or at appropriate venues.</li> </ul>
<b>Result</b>	<ul style="list-style-type: none"> <li>- Serves as a guideline for the operations of employees and procurement officers</li> <li>- Business partners are informed of the Supplier Code of Conduct</li> <li>- Supplier performance is evaluated twice a year</li> <li>- Suppliers are regularly audited</li> <li>- First aid and CPR training programs are provided to employees of one key supplier, as requested by the supplier</li> <li>- Support and promote a key packaging supplier to achieve Green Industry Level 3 certification</li> </ul>

## Civil Society/Academics/Media

Stakeholder	Civil Society/Academics/Media
<b>Stakeholders' expectations</b>	<ul style="list-style-type: none"> <li>- Disclose company information with accuracy, clarity, fairness, and timeliness</li> </ul>
<b>Responses to stakeholder expectations</b>	<ul style="list-style-type: none"> <li>- Disclose company information to the Stock Exchange of Thailand (SET) and other regulatory bodies in accordance with applicable regulations.</li> <li>- Press release</li> <li>- Opportunity day event</li> </ul>
<b>Channels for engagement and communication</b>	<ul style="list-style-type: none"> <li>- Notification to the Stock Exchange of Thailand and other regulators</li> <li>- Company's website</li> <li>- Press Release</li> <li>- Online Communication</li> <li>- External Meeting</li> <li>- Opportunity day event</li> </ul>
<b>Result</b>	<ul style="list-style-type: none"> <li>- Prepare MD&amp;A 4 times per year</li> <li>- Regularly publish press releases</li> <li>- Participate in Opportunity Day 4 times per year</li> </ul>



## Road Users and Community

Stakeholder	Road Users
<b>Stakeholders' expectations</b>	<ul style="list-style-type: none"> <li>- A safe driver with good manners and strict adherence to the law.</li> <li>- Generate no impact or cause on society, the environment, or safety.</li> </ul>
<b>Responses to stakeholder expectations</b>	<ul style="list-style-type: none"> <li>- Technology-driven control and compliance with driving laws.</li> <li>- Emergency plan cover an incident on social and environment including</li> <li>- Spillage and leakage management in accordance with the plan.</li> <li>- Establish near-miss accident activities to assist driver safety, reduce risks for road users, and minimize the opportunity to cause property damage.</li> <li>- Receiving complaints, suggestions, and feedback.</li> </ul>
<b>Channels for engagement and communication</b>	<ul style="list-style-type: none"> <li>- Online press or training</li> <li>- Electronic means, Online channel, Road Safety survey</li> <li>- Dialogues with stakeholders and meeting</li> </ul>
<b>Result</b>	<ul style="list-style-type: none"> <li>- There was no complaint from road users regarding safety and the environment.</li> <li>- There is a good relationship among road users, the Company, and plants.</li> </ul>
Stakeholder	Community
<b>Stakeholders' expectations</b>	<ul style="list-style-type: none"> <li>- A pollution-free environment for the community through the prevention and control of potential impacts</li> <li>- Continuously Environment management and resource efficiency</li> <li>- Improve the standard of living in the community by supporting and developing initiatives that enhance occupational health, promote community hiring, and facilitate knowledge sharing with students.</li> </ul>
<b>Responses to stakeholder expectations</b>	<ul style="list-style-type: none"> <li>- Continuously environmental development project</li> <li>- Organize health improvement project</li> <li>- Organize CSR activities focused on improving the standard of living and safety knowledge.</li> <li>- Cooperate with community in preserving traditional culture</li> <li>- Yearly environmental measurement and result communication.</li> <li>- Establish a process for handling complaints and suggestions.</li> </ul>
<b>Channels for engagement and communication</b>	<ul style="list-style-type: none"> <li>- Social Event</li> <li>- Engage in dialogue with stakeholders through an "Open House" event, advertise on the company billboard to communicate with the community around the plant, and gather satisfaction surveys from the community.</li> <li>- Other community activities which Company host or participate</li> </ul>
<b>Result</b>	<ul style="list-style-type: none"> <li>- There was no complaint between the community and the Company. The community has a good relationship with the Company. Satisfaction survey result is greater than 90%.</li> </ul>

## Customers / Contractors

Stakeholder	Customers / Contractors
<b>Stakeholders' expectations</b>	<ul style="list-style-type: none"> <li>- Quality of goods and services</li> <li>- Guideline for product usages</li> <li>- Provide prompt and fair services while respecting customer rights</li> <li>- Treat customers fairly and respect their rights</li> </ul>
<b>Responses to stakeholder expectations</b>	<ul style="list-style-type: none"> <li>- Organize customer relation program</li> <li>- Technical service programs to strengthen customer relationships</li> <li>- Organize knowledge sharing workshops and seminars for customers</li> <li>- Resolve customer complaints and communicate the outcome to the customer</li> </ul>
<b>Channels for engagement and communication</b>	<ul style="list-style-type: none"> <li>- Customer Satisfaction Survey</li> </ul>
<b>Result</b>	<ul style="list-style-type: none"> <li>- Annual Customer Satisfaction Survey result</li> </ul>

## Competitors

Stakeholder	Competitors
<b>Stakeholders' expectations</b>	<ul style="list-style-type: none"> <li>- Fairly and transparency trading practices</li> <li>- Strictly comply with relevant laws and regulations</li> </ul>
<b>Responses to stakeholder expectations</b>	<ul style="list-style-type: none"> <li>- Comply with Code of Ethics</li> <li>- Comply with sales Policy</li> </ul>
<b>Channels for engagement and communication</b>	<ul style="list-style-type: none"> <li>- External mutual meetings</li> </ul>
<b>Result</b>	<ul style="list-style-type: none"> <li>- Comply with Code of ethics</li> <li>- Comply with sales Policy</li> <li>- Comply with innovation Policy</li> </ul>





## Assessment of Material Topics

The Company attaches great importance to regularly reviewing and evaluating important material topics. In 2024, the Company reviewed the assessment of material topics based on the results of the 2021 assessment. In addition, the Company has also integrated trends and developments in sustainability at both the national and international levels into its considerations, including external and internal factors such as strategy, vision, executive insights, personnel development, and the management of sustainability-related risks and opportunities.

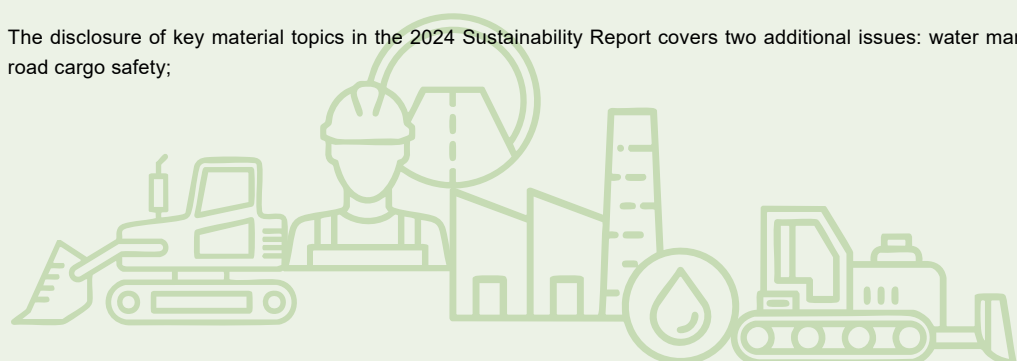
### Assessing Material Topics in 2024

The Company attaches great importance to reviewing and identifying material topics. Based on the results of the review by the management team and the Sustainability Department, the Company's material topics have been presented for approval to the Sustainability and Good Business Governance Committee. On October 25, 2024, and the Board of Directors approved on November 12, 2024, there are 11 material topics presented in this report as follows:

Sustainability Strategy	Key sustainability issues	UN SDGs
Innovation leader	1. Excellence in asphalt road surfaces	 
Eco-Efficiency Operations	2. Pollution and greenhouse gas management 3. Waste Management and Spill Prevention 4. Energy Efficiency	   
Safety Awareness	5. Employee safety and well-being	
Good Corporate Governance	6. Participation in community and social development 7. Risk Management in Crisis 8. Government policies and budgets 9. Cybersecurity	
Values for the Future	10. People management, motivation, and retention of talented employees 11. Promote employee training and education.	  

The Company has conducted an assessment based on the Global Reporting Initiatives (GRI) reporting framework.

Note: The disclosure of key material topics in the 2024 Sustainability Report covers two additional issues: water management and road cargo safety;



## Process of Materiality Assessment and Prioritization

The Group conducts a systematic review of materiality for sustainability with four main stages as follows:



This process enables companies to comprehensively identify and prioritize key material topics, ensuring suitability for effective management in the long term.



## Material Topics

These are material topics that both external and internal stakeholders agree on high importance and impact. These issues will be considered in the development of both short-term and long-term business plans.

### Scope of the Report:

The scope will be determined based on business relevance, data availability, and the impact on the operations of the Company's main businesses, which include, asphalt products, transportation, and other supporting businesses.



## Material Topics

	<b>Innovation Leader for 10X Exponential Economic Growth</b> <ul style="list-style-type: none"> <li>8) Foster innovation for Tipco Asphalt DNA</li> <li>10) Excellence in Asphalt Road Surfaces</li> <li>18) Environmentally Friendly Product and Service Development</li> </ul>
	<b>Eco-Efficiency Operations for a Better Planet</b> <ul style="list-style-type: none"> <li>2) Pollution and Greenhouse Gas Management</li> <li>3) Effluent and Waste Management/Spillage &amp; Leakage</li> <li>6) Energy Management</li> <li>7) Opportunities and Risk from Changes</li> <li>15) Materials Management</li> <li>21) Protection of the Environmental, Biodiversity and Restoration of Natural Habitats</li> <li>30) Water Management</li> </ul>
	<b>Safety Awareness Better Safe than Sorry</b> <ul style="list-style-type: none"> <li>11) Employee Health and Safety</li> <li>13) Safety during Transportation and Delivering Goods</li> <li>19) Customers and Road User: Health and Safety</li> </ul>
	<b>Good Corporate Governance for Strong Business Foundation</b> <ul style="list-style-type: none"> <li>4) Risk and Crisis Management</li> <li>6) Good Corporate Governance, Transparency, and Anti-Corruption</li> <li>9) News, Communication and Corporate Reputation</li> <li>12) Government Policies and Budgets</li> <li>16) Cyber Security</li> <li>17) Marketing and Labelling</li> <li>20) Customer Centric</li> <li>22) Customer Privacy</li> <li>23) Fair Labor Practices</li> <li>24) Participation in Community and Social Development</li> <li>26) Dialogue with Stakeholder</li> <li>27) Fair business Practices</li> <li>28) Assessment of Social, Environmental, and Ethical Issues in the Supply Chain</li> <li>29) Sustainable Supply Chain Management</li> <li>32) Sustainable Purchasing</li> <li>33) Respecting Human Rights</li> <li>34) Procurement from Local Businesses</li> </ul>
	<b>Value for the Future Be Ready for Change</b> <ul style="list-style-type: none"> <li>1) Retaining Potential Employees &amp; Employee Management</li> <li>14) Training and Education</li> <li>25) Diversity and Equal Opportunity</li> <li>31) Employee Centric</li> </ul>

Remark: 2024 Sustainability Report would disclose 2 additional material topics, namely Water Management and Safety During Transportation and Delivering Goods.



## INNOVATION LEADER

“For Economic Growth”



### Material Topic

- Excellence in Asphalt Road Surfaces

### Material Topic

## Excellence in Asphalt Road Surfaces

Policy  
on Innovation



### Management Approach

The Group continuously develops and enhances the quality of its asphalt products and technology. The Group prioritizes the refinement and performance of asphalt in accordance with international standards by adopting advanced technologies for asphalt pavement applications, with a primary focus on safety.

In terms of education and human resource development, the Group recognizes the importance of personnel development and knowledge sharing. It is dedicated to supporting continuous educational activities, providing opportunities for government agencies, customers, and students to participate in training programs, research projects or lectures by qualified engineers. Through these activities, personnel gain comprehensive knowledge of asphalt, from production processes, transportation, road construction to proper maintenance methods. This fosters an in-depth understanding and practical skills necessary for their work. By emphasizing continuous knowledge exchange, the Group aims

to produce quality personnel capable of effectively applying their acquired knowledge to the development, construction, and maintenance of asphalt roads.

Regarding environmental conservation, the Group places great importance on environmental-friendly business operations by adopting the Circular Economy concept in its work processes. This involves recycling and reusing old asphalt concrete pavement from reclaiming existing road pavement through modern, eco-friendly recycling technologies. Not only does this method reduce the use of natural resources, but it also significantly reduces carbon dioxide and fine particulate matter (PM 2.5) emissions from the road construction process, aligning with the commitment to environmental preservation and clean air that supports the livelihood of communities.

With this dedication, the Group is confident in becoming a true leader in developing eco-friendly infrastructure, creating sustainable value for Thai society.

### Goals in 2024

- Develop a systematic asphalt knowledge repository by establishing “Asphalt Intelligent Platform” to continuously enhance asphalt knowledge and services capability
- Regularly provide knowledge sharing and training on asphalt products to interested customers and government agencies.
- Maintain technical service satisfaction survey score  $\geq 85\%$

### Goals for 2025

- Establish a learning system on asphalt through the Company's online media to enable employees to access knowledge at any time.
- Develop the Asphalt Intelligent Platform as a centralized hub for knowledge and innovation in asphalt, covering six key areas: materials, processes, standards and specifications, product information, technical support and services, and construction techniques.



## Key Performance in 2024

- In terms of compiling asphalt knowledge and standards, the development of the 'Asphalt Intelligent Platform' aims to serve as a centralized hub for collecting databases, research, and facilitating knowledge exchange on asphalt product development in various forms. This will support further applications and ensure product quality control in line with international standards. In the future, the Asphalt Intelligent Platform will be expanded to connect with databases of interested government agencies and educational institutions for use in teaching and personnel development in the asphalt industry, thereby helping to raise standards and enhance the long-term potential of the industry.
- The technical team conducted 16 seminars on various asphalt application techniques, both in Thailand and internationally. Of these, 11 seminars were held for government agencies, while the remaining 5 were conducted for external organizations, achieving an average participant satisfaction rate of 97.50%.
- A total of 26 technical support activities were conducted, with a primary emphasis on optimizing asphalt application processes to enhance road performance, efficiency, and service life.
- Develop an asphalt concrete machinery data collection system from customers across Thailand through a mobile application to enhance the efficiency of customer service.



## Green Innovation: Concrete Joint Sealant Hot-Poured Elastic Type Product (Tipco Joint Sealer)

The concrete joint sealant hot-poured elastic type "Tipco Joint Sealer", received the carbon footprint reduction certification from Thailand Greenhouse Gas Management Organization (Public Organization). This certification reflects the Group's commitment to promoting sustainable development. The product aligns with the Group's vision of integrating sustainability into its corporate strategy to "deliver sustainable living for all societies with innovative solutions."

### Innovative Production Improvement for Carbon Emission Reduction detail as follows:

#### 1. Production Efficiency Improvement

The Group has implemented the use of a heat exchanger to preheat asphalt before it enters the production process, which helps reduce fuel consumption. In addition, KAIZEN activities have been carried out to shorten the product filling time by lowering the operating temperature during the filling process. This reduces fuel usage for heating the system. A fan ventilation system has also been installed to decrease time for cooling of the product, enabling faster production.

#### 2. Production Process Modification

By eliminating the use of high-power equipment (such as milling machines) in the production process and selecting more suitable raw materials, the Company is able to reduce electricity consumption during production.

Receiving this carbon footprint reduction certification reflects success in innovation and reducing environmental impacts, as well as supporting the Company's sustainable development goal, which is divided into three main areas:

1. Innovation Leader to achieve sustainable growth;
2. Eco-Efficiency Operations with minimal impact on the environment through efficiencies; and
3. Safety Awareness to promote the welfare and well-being of lives in communities sustainably

**2024**  
Production  
Output Following  
Certification

Number of Boxes  
≈  
**34,000**





## Promoting Environmental – Friendly Products and Services

### Asphalt Recycling Agent

In addition to the Group's commitment to continuous product and quality development, the Group also promotes environmentally friendly products and services.

The Asphalt Recycling Agent is a product that reflects this environmental commitment. It is used in road rehabilitation projects by mixing the agent with reclaimed road materials to improve their quality,

enabling effective reuse in accordance with required standards. This process supports the efficient use of natural resources.

Due to its practical application, government agencies such as the Department of Highways and the Department of Rural Roads have authorized the use of the Asphalt Recycling Agent in road maintenance projects since 2020.

### The Amount of Utilized Reclaimed Asphalt Pavement (RAP) on New Road Surface (Tons)



Remark: The amount in the table was projected from the sales volume of Asphalt Recycling Agent.

## Road Surface Maintenance Projects with Reclaimed Asphalt Pavement (RAP) Technique

**Project Name** 1. Road Surface Maintenance using Hot In-Plant Recycling asphalt concrete on Highway No. 2068, Khok Kruat-Nong Suang Section, Nakhon Ratchasima

Amount of Recycled Materials	Amount of Asphalt Recycling Agent	Type of Recycled Materials
630 Tons	1,500 Liters	Reclaimed Asphalt Pavement (RAP)



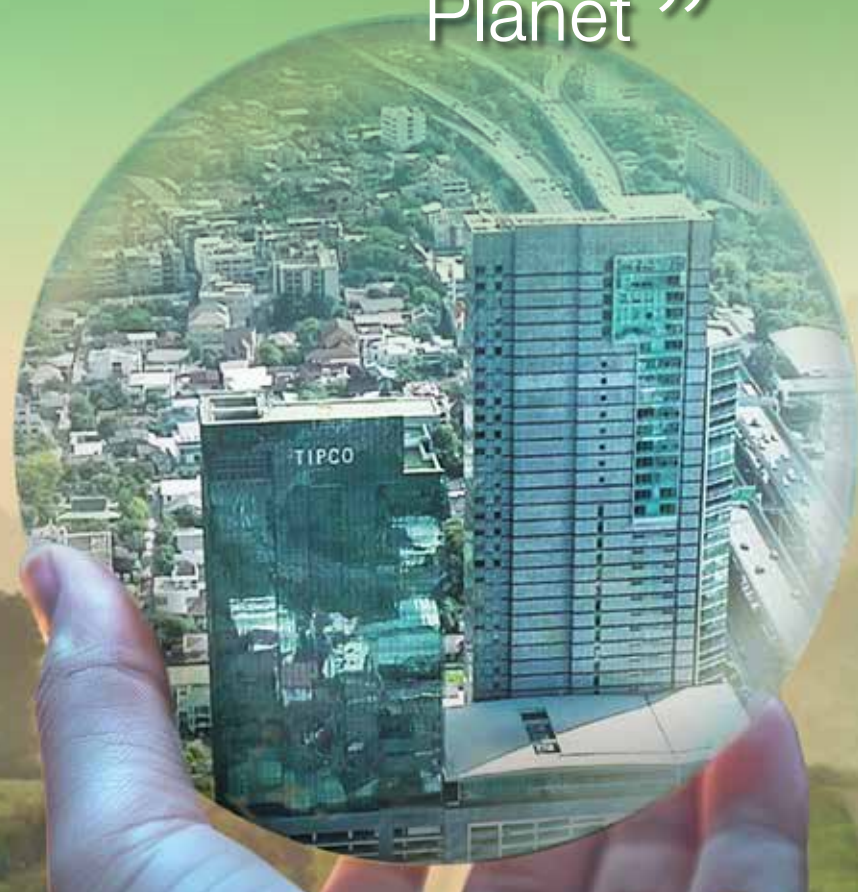
**Project Name** 2. Road Surface Maintenance using Hot In-Plant Recycling asphalt concrete on Highway No. 2026, controlled section 0100 Nong Hing-Loawloang Section, Bueng Kan

Amount of Recycled Materials	Amount of Asphalt Recycling Agent	Type of Recycled Materials
1,300 Tons	3,130 Liters	Reclaimed Asphalt Pavement (RAP)



## ECO – EFFICIENCY

“For Better Planet”



### MATERIAL TOPICS

- Pollution and Greenhouse Gas Management
- Energy management
- Effluent and waste management/ spill and leak
- Water Management

### Material Topic

## Pollution and Greenhouse Gas Management

Environmental and  
Climate Policy



### Management Approach

#### Pollution Management

The Group is committed to reducing pollution from its operations by conducting business in a way that promotes both growth and an improved quality of life for communities and society. This is achieved by operating within the legal framework, adhering to the environmental management system standard (ISO 14001), and following international sustainability standards. These efforts have led to the establishment of the Group's environmental and climate policies, which serve as guidelines for operations that foster development, learning, awareness, and social responsibility, as well as setting concrete operational targets to minimize environmental impacts.

The Group is committed to minimizing air pollution emissions into the environment by prioritizing the management of air pollutants, including nitrogen oxides (NOx), sulfur oxides (SOx), carbon monoxide (CO), and total suspended particulates (TSP), which

result from fuel combustion. The Group regularly maintains machinery and continually improves production processes to ensure maximum combustion efficiency. In addition, air quality from combustion emissions released through stacks is monitored annually, and the volume of pollutants emitted is calculated based on measurement results in accordance with the guidelines set by the Pollution Control Department, Ministry of Natural Resources and Environment.

In 2024, the Group continued to disclose air pollution emission data in accordance with GRI 305-7 standards for its asphalt production business in Thailand. The data, covering the period from January to December 2024, was verified and certified by the Management System Certification Institute (MASCI).

#### Goals in 2024

- Control the air pollution of stacks to not exceed the legal limits.
  - NOx 376 mg/m<sup>3</sup>
  - SOx 2,489 mg/m<sup>3</sup>
  - CO 790 mg/m<sup>3</sup>
  - TSP 240 mg/m<sup>3</sup>
- Monitor and control air pollution and noise levels to not exceed the legal limits and related regulations.

#### Goals for 2025

- Control the air pollution emissions of stacks to not exceed the legal limits.
  - NOx 376 mg/m<sup>3</sup>
  - SOx 2,489 mg/m<sup>3</sup>
  - CO 790 mg/m<sup>3</sup>
  - TSP 240 mg/m<sup>3</sup>



## Key Performance in 2024\*

- It can control emissions not exceeding the current legal limit.
  - NOx 311 mg/m<sup>3</sup>
  - SOx 951 mg/m<sup>3</sup>
  - CO 267 mg/m<sup>3</sup>
  - TSP 108 mg/m<sup>3</sup>
- The results of various pollution measurements, such as air and noise pollution, were better than the standard limits set by relevant laws or regulations.

\* Only the asphalt business in Thailand.

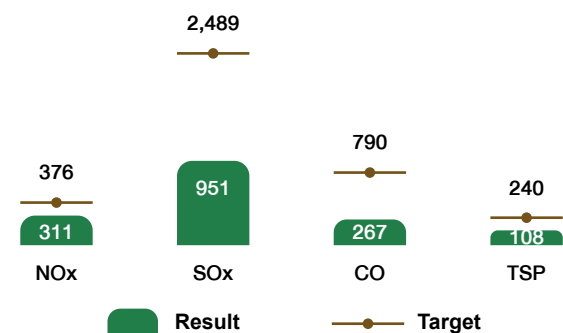
## Air Pollution Emission Management Activities

Since most of the air pollution arises from fuel combustion in the production process, the Group manages air pollution through preventive maintenance of machinery, along with promoting other internal initiatives within the factory, such as the Total Productive Maintenance (TPM) program and 5S activities, on a regular basis.

In addition, plants in the asphalt business in Thailand continuously has measured air pollution from stacks on an annual basis, including controlling and calculating the amount of pollutant emissions in accordance with the principles and criteria of the Department of Pollution Control, Ministry of Natural Resources and Environment.

### Air Emissions

Unit : mg/m<sup>3</sup>



## Management Approach

### Greenhouse Gas Management

Reducing greenhouse gas emissions is a key objective for the Group. A clear target has been set to reduce Scope 1 and Scope 2 greenhouse gas emissions by at least 36% compared to the 2020 baseline year, to be achieved by 2030, specifically for the asphalt business in Thailand. To achieve this goal, the Group has established a climate strategy that includes climate strategic projects focusing on climate change mitigation.

In addition to the climate strategic projects mentioned above, the Group is also developing green products and has initiated a feasibility study on implementing an Internal Carbon Price (ICP) within the organization. This ICP will be used as a factor in investment decisions for projects that help reduce greenhouse gas emissions in the future.



### Goals in 2024

- Reduce total greenhouse gas emissions (Scope 1 and 2) by at least 29% compared to 2020.
- Reduce Scope 1 greenhouse gas emissions by at least 30% compared to 2020.
- Reduce Scope 2 greenhouse gas emissions by at least 24% compared to 2020.
- Reduce the greenhouse gas emission intensity per unit of production (Scope 1 and 2) by at least 35% compared to 2020.
- No complaints related to environmental issues.

### Goals for 2025

- Reduce total greenhouse gas emissions (Scope 1 and 2) by at least 31% compared to 2020.
- Reduce Scope 1 greenhouse gas emissions by at least 32% compared to 2020.
- Reduce Scope 2 greenhouse gas emissions by at least 27% compared to 2020.
- Reduce greenhouse gas emission intensity per unit of production (Scope 1 and 2) by at least 41% compared to 2020.

## Key Performance in 2024\*

- The total greenhouse gas emissions amounted to 11,412 tons of carbon dioxide equivalent, representing a 34% reduction compared to 2020.
- The Scope 1 greenhouse gas emissions amounted to 9,764 tons of carbon dioxide equivalent, representing a 36% reduction compared to 2020.
- The Scope 2 greenhouse gas emissions amounted to 1,648 tons of carbon dioxide equivalent, representing a 22% reduction compared to 2020.
- The total greenhouse gas emission intensity per unit of total production (Scope 1 and 2) was 0.018 tons of carbon dioxide equivalent per unit of production, a reduction of 43% compared to 2020.

\* Only the asphalt business in Thailand and head office.

## Climate Strategic Projects



### Solar Rooftop

The Group plans to make substantial investment in renewable energy through installing of solar rooftops at its manufacturing plants in Thailand. This project serves as a step towards achieving energy dependence. The solar rooftops will harness sunlight to generate electricity, reducing reliance on conventional power sources which results in a more sustainable energy mix.

### Electric Vehicles and Electric Trucks

The Group aims to transition its fossil fuel-based vehicles to electric vehicles (EVs) including its own-operated trucks. This commitments set a good practice for sustainable mobility among peers.

### Fuel Switching to LNG

To further enhance the sustainability of its business operations, the Group will invest in a fuel-switching project from diesel to liquefied natural gas (LNG) for its hot oil heater system. This project also aligns with a push towards cleaner and more sustainable fuels.



### Electric Hot Oil Boiler with Solar Power

The Group plans to reduce greenhouse gas emissions by replacing its diesel hot oil boiler unit with an electrical hot oil boiler unit. By using electricity for the heating system in the production process, the Group can eliminate GHG emissions associated with traditional heating methods that use diesel as a fuel source. To further reduce reliance on the electrical grid, the Group will also invest in solar power to generate solar energy for the electrical hot oil boiler.

### Logistics Partner Expert

As part of the supply chain optimization initiative, the Group will be able to reduce part of its Scope 1-2 GHG emissions by leveraging like-minded specialized logistic partners to effectively and efficiently manage product deliveries and associated emissions.

The Group recognizes that logistic-associated emissions of the partners will fall under indirect Scope 3 GHG emissions of the Group, and confirms that the Group will do everything possible to reduce such emissions by means under its control, e.g. by selecting logistic partners that can service with electric or fuel-efficient trucks.

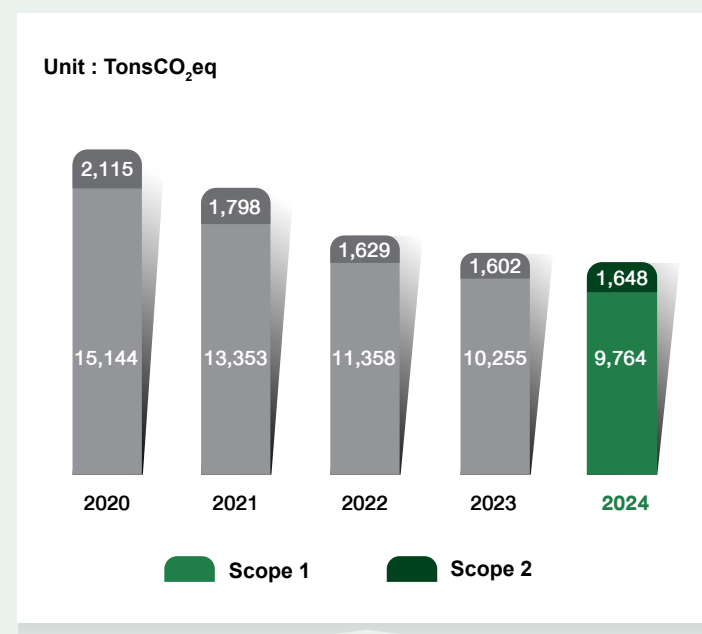
### Reforestation

For the past several decades, the Group has implemented various afforestation projects to increase and restore forest areas. In continuation with this aim, a key afforestation strategic project was developed as a major step forward, starting in 2024 and completed by 2033 with the planting of 120,000 trees. The annual GHG emissions reduction from the project is estimated to be 1,140 tCO<sub>2</sub>e per year. While afforestation plays a vital role in neutralizing the Group's residual GHG emissions in supporting Thailand's NDC, it will not be accounted for in the GHG emission reduction targets for 2030.

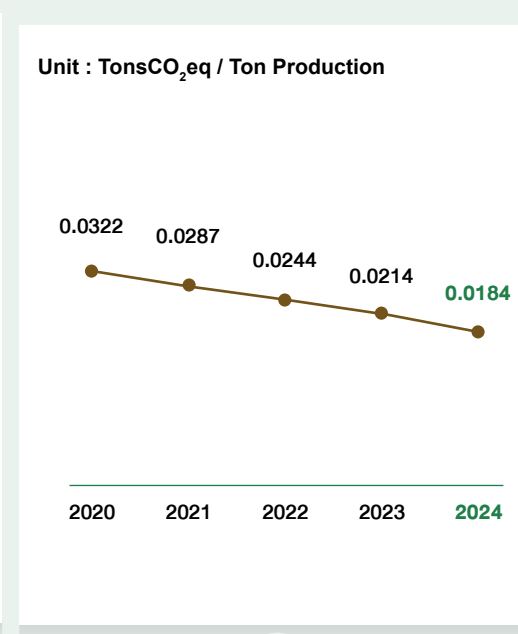


In 2024, total greenhouse gas emissions from Scope 1 and Scope 2 decreased by 34% compared to 2020, achieving the target. Additionally, the total greenhouse gas emission intensity per unit of production (Scope 1 and 2) was 0.018 tons of carbon dioxide equivalent per unit of production, representing a 43% reduction compared to 2020, also meeting the target. These results are attributed to the progress of the “Specialized Logistic Partner” project.

## Greenhouse Gas Emission



## Greenhouse Gas Intensity Scope 1 & 2



In the year 2024, the company deployed a fleet of seven electric trucks to facilitate transportation services along key routes, including Laem Chabang, Nakhon Ratchasima, Phitsanulok, and Rayong, covering a cumulative distance exceeding 262,000 kilometers.

In addition, the Group remains committed to developing green products by focusing on improving production processes to enhance energy efficiency and reduce greenhouse gas emissions. In 2024, the Group’s environmental friendly product, Tipco Joint Sealer, received certification for the Carbon Footprint Reduction Label (CFR) from the Thailand Greenhouse Gas Management Organization (Public Organization) on August 28, 2024. Further details are provided under the section titled “Innovation Leader.”



## Electric Tractors Project

### The Tipco Asphalt Group has Started Using Electric Tractors, Enhancing Transportation to be More Environmentally Friendly (Green Logistics)

On February 1, 2024, the Group launched a project to use electric-powered vehicles, which is a new innovation of transportation, by using the 423 kWh EV tractors for the first time. This vehicle is used to transport asphalt from Laem Chabang to the Nakhon Ratchasima plant, aiming to enhance transportation with an environmentally friendly approach (Green Logistics). The use of electric transport vehicles is part of the organization’s policy

and strategic plan, through which we are committed to sustainable business development, focusing on reducing greenhouse gas emissions. This aligns with government policies and addresses climate change, which is a global trend of great importance today. We firmly believe that Green Logistics will play a vital role in creating a better and more sustainable environment.

## Internal Carbon Pricing

The implementation of Internal Carbon Pricing (ICP) within organizations enables businesses to gain a clearer understanding of the internal cost of carbon, thereby informing and guiding investment decisions in projects aimed at reducing greenhouse gas emissions. In alignment with this objective, the Company has designated representatives to participate in the workshop-based training program entitled “Internal Carbon Pricing (ICP),” organized under the Internal Carbon Pricing Platform Development Project by the Thailand Greenhouse



Gas Management Organization (Public Organization). The program was held from November 2024 to January 2025.



# ENERGY EFFICIENCY



## Material Topic

## Energy Efficiency

Environmental and  
Climate Policy



### Management Approach

The Group recognizes that energy is an important resource for the production process and service delivery. Therefore, the Group is committed to managing energy to be the most efficient. Through the process of adjusting materials and equipment, the production process and continuously supporting the production process to reduce energy loss in the organization's operational process. This includes initiating the use of renewable energy. This not only

reduces energy costs, but also reduces greenhouse gas emissions.

In 2024, the Group disclosed information on energy from the asphalt business. The data has been verified and certified by the ISO Accreditation Institute (MASCI) covering the data from January to December 2024 (only for asphalt business and head office).

### Goals in 2024

- Reduce energy intensity (both fuel and electricity) by at least 27% compared to the base year 2020

### Goals for 2025

- Reduce energy intensity (both fuel and electricity) by at least 28% compared to the base year 2020.
- Increase the proportion of LNG consumption compared to total fuel and oil consumption by at least 3.5%.
- Increase the proportion of electricity consumption from renewable energy sources compared to total electricity consumption at least 3.5%.
- Organize at least 6 training sessions to raise awareness of energy efficiency.



### Key Performance in 2024\*

- Reduced the rate of Fuel and electricity consumption per ton of production by 43% (0.23 gigajoules per ton production) compared to the base year 2020 (0.40 gigajoules per ton production).
- A total of 168 employees participated in energy efficiency training

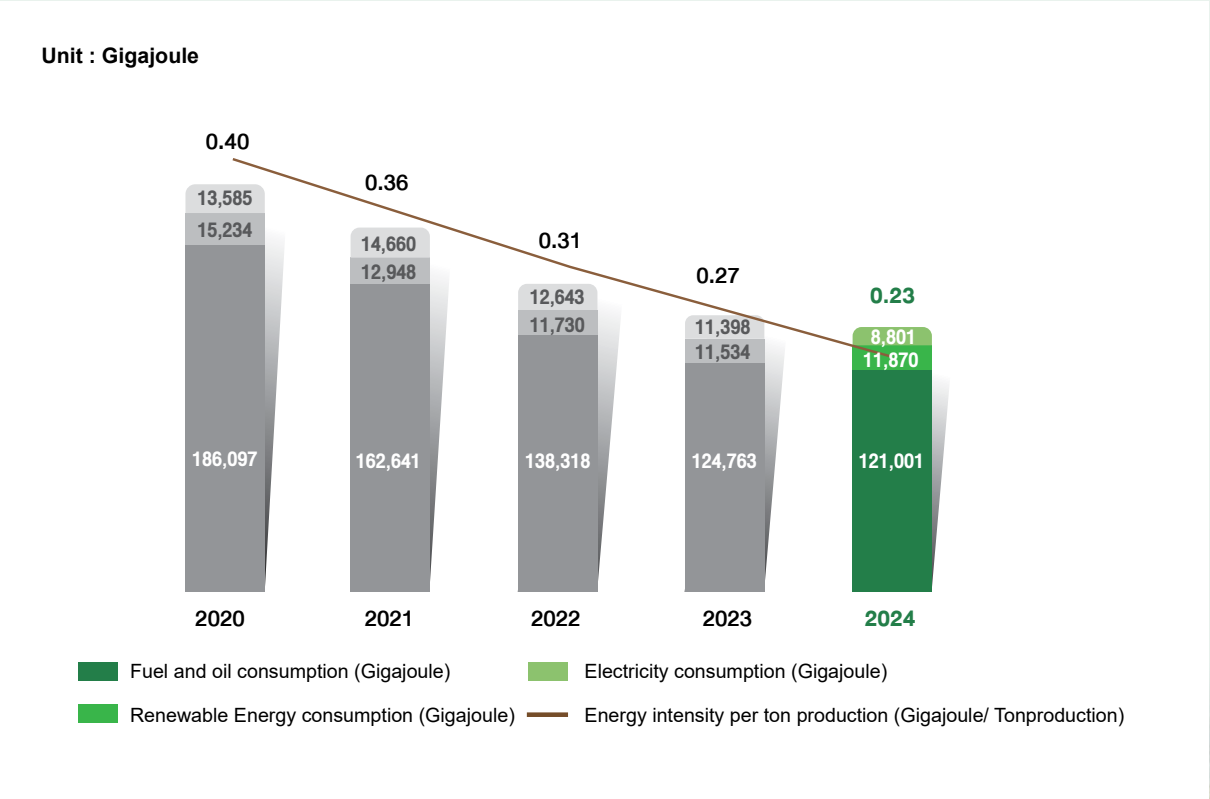
\*Only the asphalt business in Thailand and head office.





In 2024, the Group increase energy efficiency by focusing on reducing energy loss. Through the installation and improvement of equipment materials. As a result, the rate of renewable energy consumption per ton of production decreased by 43% (0.23 gigajoules per ton production) compared to the base year of 2020, which achieved the target.

Total Energy Consumption Of Domestic Asphalt Business



## Project for Improving the Hot Oil Supply Control System in the Product Storage to Automate and Reduce Fuel Energy Consumption for Heating Products Awaiting Sale

In the process of heating products awaiting sales, precise temperature control is critically important to efficiently reduce energy loss. The Group has installed electric actuator connected to the hot oil supply valves for the product storage tanks, controlled through the SCADA system. A set point is established to ensure the temperature inside the storage tanks does not exceed the desired level. The system will automatically increase or shut off the hot oil supply valves when the temperature inside the storage tanks reaches the target, preventing overheating. This helps reduce fuel consumption in heating the products and prevents errors caused by forgetting to open or close the valves.





## Project for Improving the Thermal Insulation of the Heat Exchanger System and Product Storage Tanks to Reduce Heat Loss from the Products to the Atmosphere

Heating products in storage tanks awaiting sale is a time-consuming process. Efficient thermal insulation that can maintain stable temperatures inside the storage tanks is a key factor in reducing energy loss.

In 2024, the thermal insulation of the heat exchanger system and product storage tanks at the Phra Pradaeng factory was improved. Since the Phra Pradaeng plant is the largest storage facility

for asphalt products, the Group initiated a project to replace the thermal insulation of the heat exchanger system and storage tanks starting in September 2023 and completing in March 2024.

This project helped reduce heat loss, as the temperature inside the tanks decreased from 5 degrees Celsius to 2 degrees Celsius, which contributed to reducing fuel consumption during production.

## Solar Lighting Projects



The Group has started using renewable energy by implementing a project to install solar-powered lighting (Solar Lighting) in the operational areas of three plants: Phra Pradaeng plant, Nakhon Ratchasima plant, and Surat Thani plant, totaling 34 lights. This initiative not only reduces electricity purchase costs but also helps decrease greenhouse gas emissions from electricity consumption in the lighting process





# EFFLUENT AND WASTE MANAGEMENT / SPILLAGE & LEAKAGE



## Material Topic

# Effluent and Waste Management / Spillage & Leakage

Environmental and  
Climate Policy


## Management Approach

### Waste Management

The Group recognizes the importance of using resources efficiently and managing waste effectively in order to minimize environmental impact. This is achieved through the application of the 3Rs principle, which includes: reducing usage or using only what is necessary (Reduce), Reuse, and Recycle. The Group has also implemented Total Productive Maintenance (TPM), a system that encourages participation from all employees, to enhance the efficiency of waste and material management.

Additionally, the Group is committed to wastewater management. In the asphalt business in Thailand, wastewater from various internal processes is treated and reused for activities within the plant, such as oil separator systems.

### Leakage Prevention

The Group places great importance on safety in all processes, including production, supporting activities, and transportation of products that may pose a risk of leakage of products and chemicals, which could impact nearby communities. The Group addresses these risks through hazard identification and risk assessment processes, development of equipment and procedures, regular review of leakage prevention and response manuals, and conducting systematic chemical and product spill response training and drills at least once a year. These efforts aim to enhance the efficiency of emergency response teams and reduce recovery time in the event of an actual incident



## Goals in 2024

- The proportion of total waste per ton of production decreased at least 5% from 2023.
- Increase the proportion of waste disposal to total waste in 2024 by recycling methods to 75%.
- Zero hazardous waste to landfill.
- Zero significant product spillage incidents (Level 3 or above).

## Goals for 2025

- Reduce the amount of hazardous waste at least 3% compared to 2024.
- Maintain the proportion of waste disposal to total waste by recycling methods to 75% in 2025.
- Increase the proportion of waste disposal compared to the total amount of waste by reusing methods at least 1%.
- Zero hazardous waste to landfill.
- Organize at least 5 training sessions to raise awareness of waste management
- Zero significant product spillage incidents (Level 3 or above).





## Key Performance in 2024

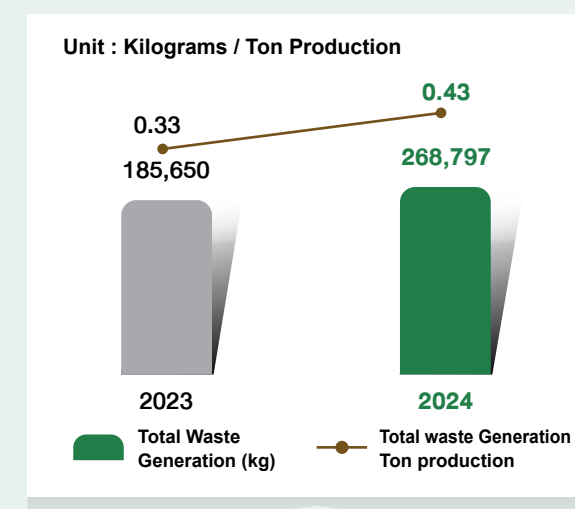
- Proportion of total waste per ton of production was higher than that in 2023.
- Zero Hazardous and non-hazardous waste to landfill.
- The number of employees who attended the training on waste management was 168.
- The number of significant product spillage incidents (Level 3 or above) is Zero.



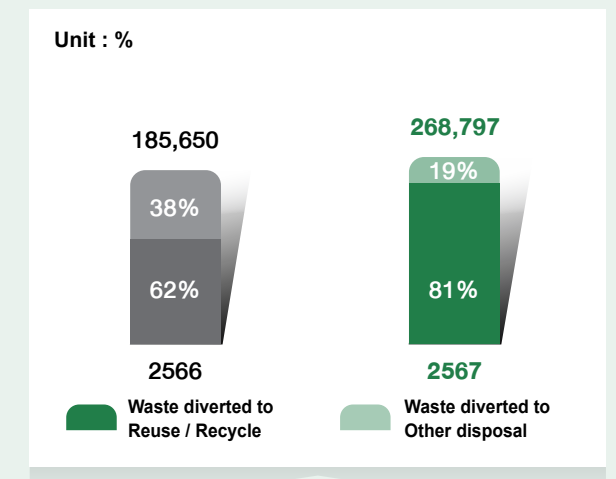
## Waste Management

In 2024, the total volume of waste generated by the Group increased significantly compared to 2023. This was primarily due to the replacement of insulation on product storage tanks—an activity outside the regular production process that is scheduled every three years. This replacement generated a substantial amount of waste. As a result, when excluding the waste generated from this specific activity, the total waste volume was 195,037 kilograms, compared to total waste of 268,797 kilograms. The waste intensity was 0.32 kilograms per ton production, compared to 0.43 kilograms per ton production when including the insulation replacement activity. This activity, aimed at improving the efficiency of tank insulation, also led to an increase in the proportion of both hazardous and non-hazardous waste per ton production in 2024 compared to 2023

### Proportion of Waste Generation\*

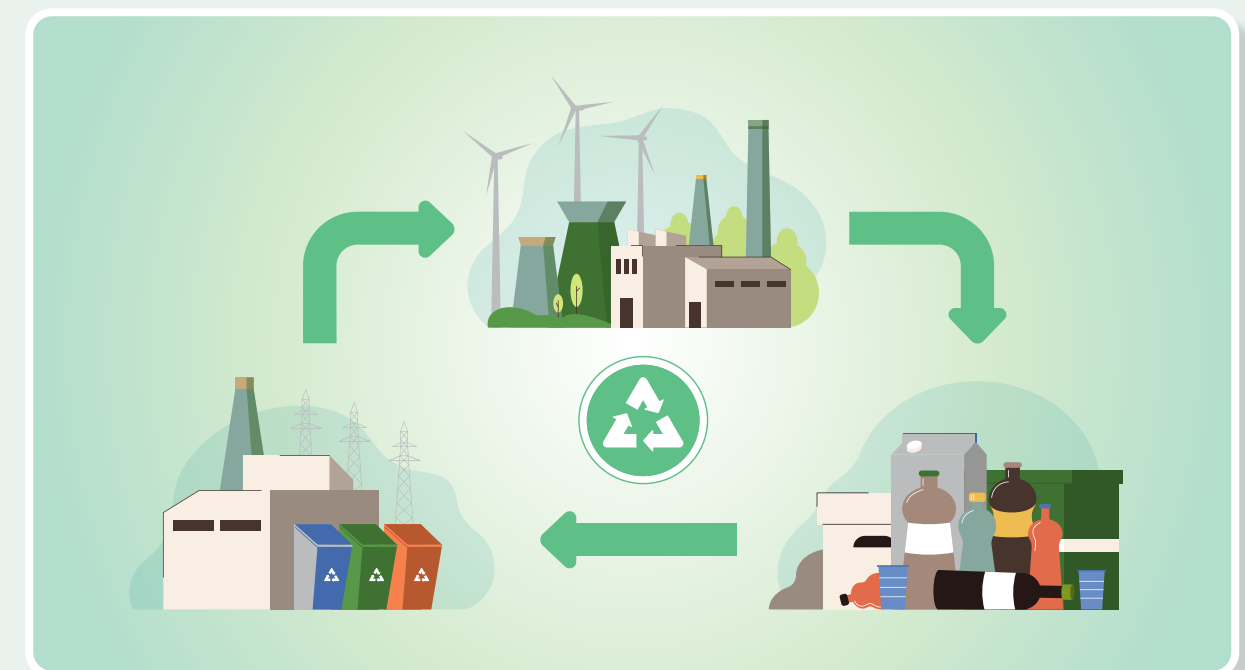


### Proportion of Waste Diverted to Reuse / Recycle



\*Only for Asphalt Production Business in Thailand

The Group remains focused on managing waste according to 3Rs principle. This commitment is reflected in the increased proportion of waste that was reused or recycled in 2024, compared to 2023.





## "3Rs Waste Management" Project for the Community

The Group believes that sustainable development must grow alongside the community, Therefore, it manages waste according to the 3Rs principle through the implementation of various community partnership projects, such as:



### • Tha Thong Canal Conservation Project

This project was organized by the Surat Thani plant to raise awareness about waste segregation, environmental conservation, and to foster a sense of social responsibility between employees of plant and nearby communities. Employees participated in collecting waste in two areas: the roadside near the plant entrance and the Company's pier area. A total of 14.4 kilograms of waste was collected, of which

6.8 kilograms were recyclable plastic bottles and 7.6 kilograms were general waste. The collected waste was sent to the plant's waste sorting station before being donated to Wat Tha Thong School. The waste was used as educational materials for teaching waste separation and to generate additional value through recycling. The proceeds from the sale of these materials were used to fund lunch for students.



### • Project for Promoting and Enhancing the Quality of Life of the Disadvantaged Under the "Zero Waste" activity.

The Phitsanulok plant conducted a CSR activity under a project aimed at promoting and enhancing the quality of life for disadvantaged group as part of the "Zero Waste" project. This took place at the Special Education Center, Educational Area 7, Phitsanulok Province. The project focused on efficient waste management within the education center based on the 3Rs principle with the goal of reducing waste at the source, increasing the value of waste materials, and promoting an environmentally friendly society. Activities included improving the waste separation area, such as installing compost bins for food waste. A total of 15 employees participated. The plant also provided waste bins to the education center, including bins for organic waste, general waste, recyclable materials, and hazardous waste. This is an ongoing project and currently about 50% complete.

In 2024, the amount of waste within the project, along with the value created for the community, are shown in the table below.

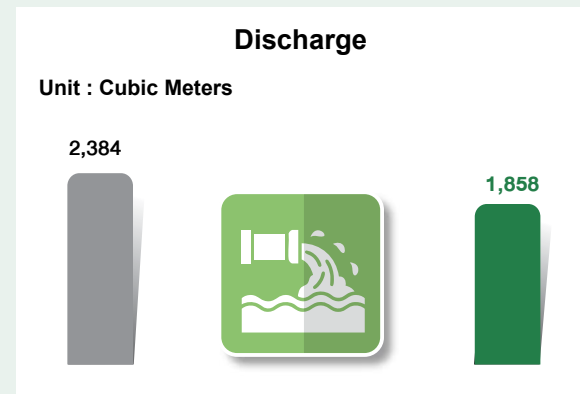
Reused / recycled waste in the project	2023		2024	
	Amount of waste (kg)	Value to the community (Baht)	Amount of waste (kg)	Value to the community (Baht)
Plastic	453	2,674	790	2,797
Glass Bottle	1,172	1,758	1,055	1,317
Can	48	2,400	58	2,538
Paper crate	757	1,438	1,467	3,015

In terms of waste management, in 2024, the amount of hazardous waste disposed of by landfill method of the Group was zero, reflecting the Group's commitment to business operations with a true impact on the environment and the community.



## Wastewater Management

The Group places great importance on managing wastewater from internal processes by treating it properly before discharging it into the public system. However, the Group is committed to not discharging wastewater to the public by promoting water reuse within its operations. Currently, the asphalt plants in Thailand—Rayong, Nakhon Ratchasima, and Surat Thani—do not discharge wastewater externally. For the Phitsanulok and Phra Pradaeng plants, which still discharge wastewater outside the plants, the quality of the discharged water is strictly controlled



and monitored in compliance with legal standards before discharging to the public.



### Surat Thani Plant (Zero Discharge)

There are 113-cubic-meter and effluent storage tanks for reuse in the production. To reduce groundwater and tap water consumption.



### Phra Pradaeng and Phitsanulok Plants

Treated wastewater from the retention pond is reused for irrigating trees within the plant area, and water usage is monitored and controlled in each activity to help reduce the discharge of wastewater outside the plants.



### Rayong Plant (Zero Discharge)

There is a 840-cubic-meter reservoir to collect treated water for reuse in production.



### Nakhon Ratchasima Plant (Zero Discharge)

There is a 2,500-cubic-meter HDPE pond to store treated water for reuse in the production. To reduce groundwater and tap water consumption.



## Spillage Prevention

The Group has implemented risk identification measures, improved processes and equipment, and conducted training and drills to ensure preparedness for responding swiftly to emergency spillage situations.

### Project to Prevent Spillage from Asphalt Pumping Lines or Pipes by Installing Release Valves

During the process of receiving and transferring asphalt from trucks or vessels to storage tanks for raw materials or finished products. Maintaining appropriate pressure level in the hoses or pipelines is a critical factor in reducing the risk of broken pipes. Excessive pressure within the pipelines may result in leaks of asphalt from pipes or related equipment, leading to resource loss and potential safety hazards.

To prevent such issues, the Group has installed additional release valves in the pumping system. These valves function to release excess pressure caused by the expansion of asphalt. When the pressure exceeds the designated limit, the valve automatically activates, redirecting the excess asphalt to a relief tank, thereby reducing system pressure and preventing damage to the system. This measure helps to maintain the balance and efficiency of the asphalt pipeline system, also safety operations.



## Project to Enhance Emergency Response Capacity and Spill Recovery in Case of Leaks During the Transportation of Products to Customers.

Currently, the Thailand operations department in Thailand has established a Centralized Logistics, which is responsible for overseeing and managing the Group's product transportation. This includes both own delivery vehicles and outsourced transportation services. The logistics management covers delivery routes across all regions of Thailand.

To enhance the efficiency in responding to emergencies that may occur during transportation, as well as to increase the capability to contain and recover from spills of raw materials and products during transit. In 2024, the Group has therefore implemented integrated emergency response drills, involving coordination between emergency response teams and various related departments—both internal and external to the organizations such as: Centralized Logistics, Security, Safety, Health and Environment (SSHE), Production, Engineering, Transportation, Outsource transportation, Emergency medical services, Police and local communities along transportation routes.

To ensure maximum efficiency during the drills, standardized tools and equipment were utilized, along with logistics management technologies. This approach helps stakeholders gain a better understanding and develop expertise in emergency and crisis management processes. It also strengthens confidence in the organization's readiness and capability to manage emergencies comprehensively across all transportation areas of the Group.

Spillage Type	2021	2022	2023	2024
<b>Level 3 : Very</b>				
The volume of spillage is more than 20,000 kg/time.	0	0	0	0
<b>Level 2: Moderate</b>				
The volume of spillage from 200-20,000 kg/time.	4	3	8	11
<b>Level 1: Less</b>				
The volume of spillage is less than 200 kg/time.	12	8	6	4





# WATER MANAGEMENT



## Material Topic

# Water Management

Environmental and  
Climate Policy



## Management Approach

The Group implements an integrated approach to water management, with a strong focus on reducing dependency on external water sources and minimizing water consumption. This is achieved by improving water use efficiency in production processes and increasing the volume of treated wastewater (effluent) that is reused (recycled water), thereby reducing the amount of water discharged into the environment.

In 2024, the Group has collected water-related data in accordance with GRI 303 standards, covering its Thailand asphalt plants and the head office. The

data has been verified by the Management System Certification Institute (MASCI) and includes the reporting period from January to December 2024.

Additionally, the Group has initiated a study to assess water-related risks using the Aqueduct Water Risk Atlas developed by the World Resources Institute (WRI). This tool is used to identify the level of water stressed area(s) in various locations where the company's facilities operate. In 2025, the Group aims to integrate the results of this risk assessment into its overall water management strategy.

## Goals in 2024

- Reduce the volume of water withdrawal from external sources by at least 3% compared to 2023.
- Zero complaints from the community.

## Goals for 2025

- Reduce the volume of water withdrawal from external sources at least 1% compared to 2024.
- Increase the volume of recycled water usage at least 5% compared to 2024.
- Reduce net water consumption by at least 1% compared to the 2024 baseline.
- Organize at least 6 training sessions to raise awareness about efficient and responsible water use.
- Zero complaints from the community.



## Key Performance in 2024\*

- The volume of water withdrawn from external sources increased by 7% compared to 2023.
- No complaints were received from the community.
- Used 2.86 megaliters of recycled water from production process.
- 168 employees participated in water management training sessions.

\*Only for asphalt production in Thailand and the head office.



## Commitment to Reducing External Water Sources

As the Group produces asphalt emulsion, which uses water as a primary raw material, the sales of this product grew by 10% in the past year. As a result, water consumption and water withdrawal in 2024 increased by 7% compared to 2023.

Nevertheless, the Company remains committed to reducing water withdrawal from external sources. In 2024, the Phitsanulok and Nakhon Ratchasima plants implemented improvements to their water management systems and water retention ponds. These efforts included the development of processes that enable the reuse of treated wastewater. As a result, the Company recorded a total recycled water usage of 2,855 cubic meters in 2024

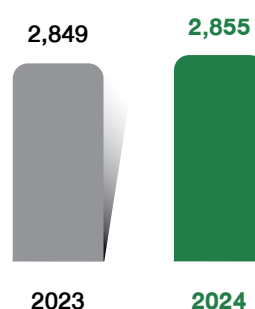
### Water Withdrawal

Unit : Cubic Meters



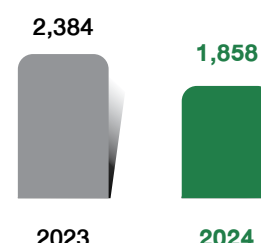
### Recycled Water

Unit : Cubic Meters



### Water Discharge

Unit : Cubic Meters

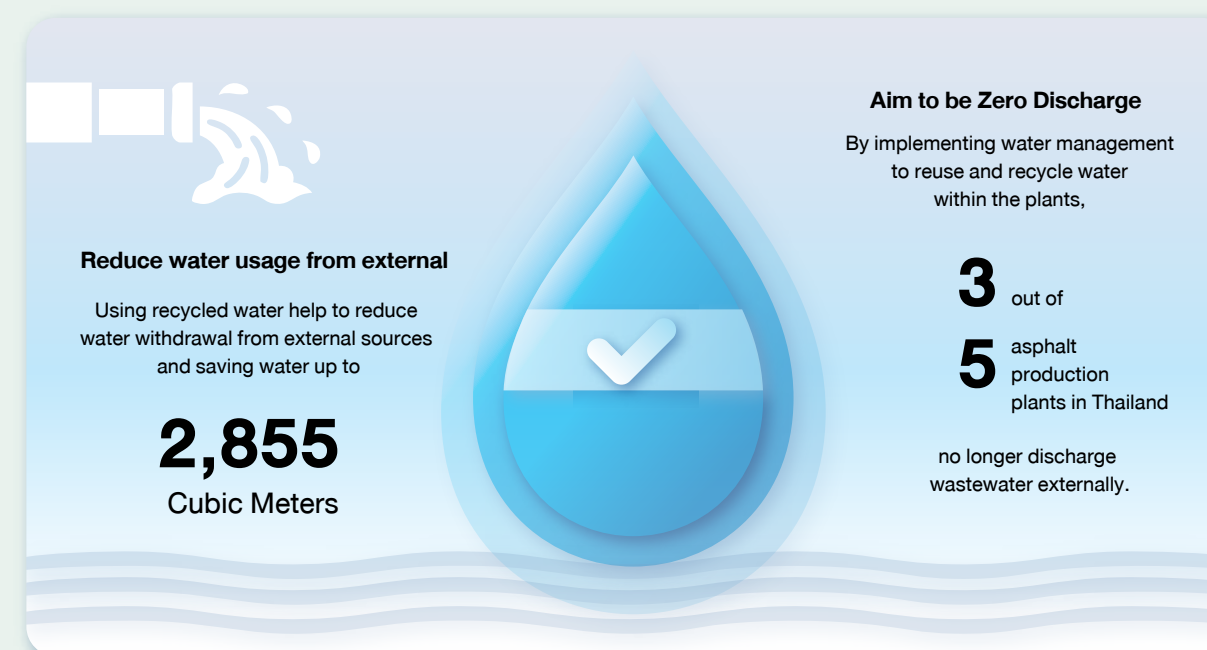


## Project to Reduce Dependency on External Water Withdrawal

The asphalt production plants in Thailand have improved their drainage systems and water pumping systems to increase rainwater usage from drainage system for production processes. Additionally, the plants have upgraded their water storage ponds by installing HDPE liners to reduce water loss through ground seepage. This efficient water management enables the plants to utilize resources more effectively, supporting continuous and sustainable production.



All wastewater from both production and supporting processes is collected and treated 100% through the wastewater treatment system to meet required standards before being discharged outside the plant. As of now, 3 out of 5 asphalt production plants in Thailand no longer discharge wastewater externally. In 2024, the total volume of discharged water decreased compared to 2023.





## Environmental Performance

### Air Emissions

	Unit	2023 <sup>/2</sup>	2024	GRI Standards
Nitrogen Oxides <sup>/1</sup> (NOx)	Kilograms	7,665.64	8,403.41	305-7
	Kilograms / Ton production	0.01	0.01	
Sulfur Oxides <sup>/1</sup> (SOx)	Kilograms	6,864.42	7,758.08	
	Kilograms / Ton production	0.01	0.01	
Carbon Monoxide <sup>/1</sup> (CO)	Kilograms	3,579.01	3,352.89	
	Kilograms / Ton production	0.01	0.01	
Total Suspended Particulates <sup>/1</sup> (TSP)	Kilograms	684.64	740.66	
	Kilograms / Ton production	0.00	0.00	
Volatile Organic Compounds <sup>/1</sup> (VOC)	Kilograms	NA	0.82	
	Kilograms / Ton production	NA	0.0000013	
• Trichloroethylene <sup>/1</sup>	Kilograms	NA	0.71	
	Kilograms / Ton production	NA	0.000	
• Xylene <sup>/1</sup>	Kilograms	NA	0.11	
	Kilograms / Ton production	NA	0.000	

Note:

NA (Not Available) No data collected

/1 Cover asphalt business in Thailand

/2 verify and certify by MACSI for the first year, refer limited assurance scope (page 147-148)

### Greenhouse Gas Emissions

	Unit	2020 <sup>/2</sup>	2021	2022	2023	2024	GRI Standards
GHG Scope 1 and 2 <sup>/1,3</sup>	Tons CO <sub>2</sub> eq	17,259	15,151	12,987	11,856	11,412	305-1
• GHG Scope 1 <sup>/1,3</sup>		15,144	13,353	11,358	10,255	9,764	305-1
• GHG Scope 2 <sup>/1,3</sup>		2,115	1,798	1,629	1,602	1,648	305-2
GHG emission reduction compare with base year 2020 /1,3	Tons CO <sub>2</sub> eq	NA	2,108	4,272	5,402	5,847	305-5
	%	NA	12.22	24.75	31.30	33.88	
GHG intensity per ton production	Tons CO <sub>2</sub> eq /Ton production	0.0322	0.0287	0.0244	0.0214	0.0184	305-4

Note:

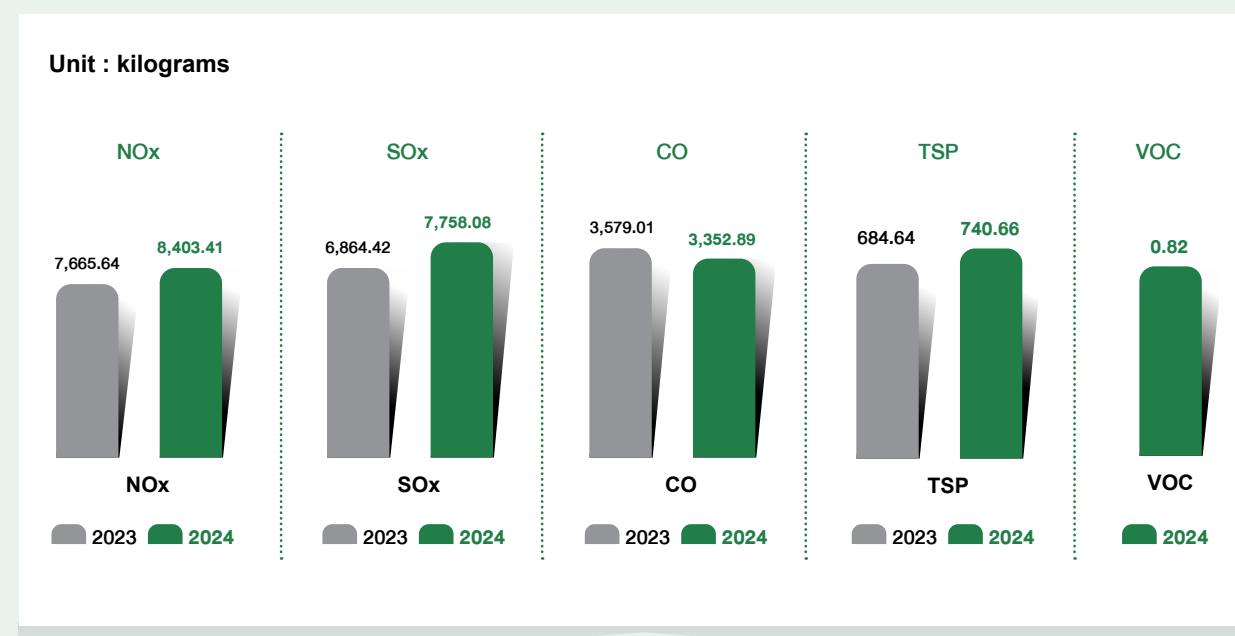
NA (Not Available) No data collected

/1 verify and certify by MACSI for the first year, refer limited assurance scope (page 147-148)

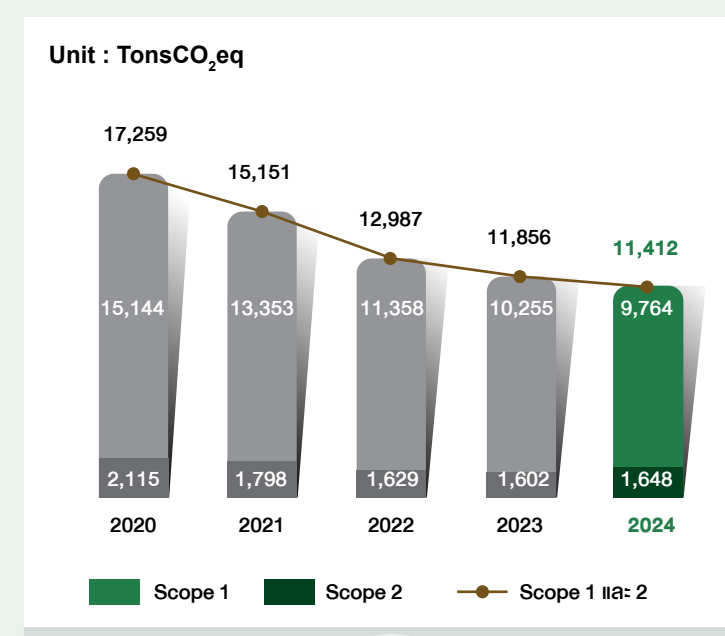
/2 Base year

/3 Refer the emission factors as per the latest announcement (April 2022) from the Greenhouse Gas Management Organization (Public Organization)

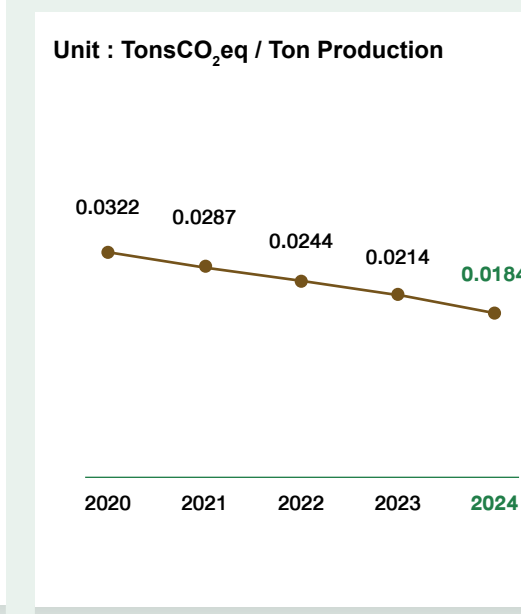
### Air Emissions



### Greenhouse Gas Emission



### Greenhouse Gas Intensity Scope 1 & 2



## Energy Consumption

	Unit	2020 <sup>/2</sup>	2021	2022	2023	2024	GRI Standards
Energy Consumption <sup>/1</sup>		214,917	190,249	162,690	147,694	141,672	302-1
Non-Renewable fuel Consumption <sup>/1</sup>		186,301	162,558	138,347	124,706	121,001	302-1
Renewable fuel Consumption <sup>/1</sup>	Gigajules	13,602	14,743	12,742	11,454	8,801	302-1
Electrical Consumption <sup>/1</sup>		15,234	12,948	11,730	11,534	11,870	
Electrical Consumption Reduction		NA	24,668	52,227	67,222	73,244	302-4
compare with base year 2020 <sup>/1/2</sup>	%	NA	11%	24%	31%	34%	

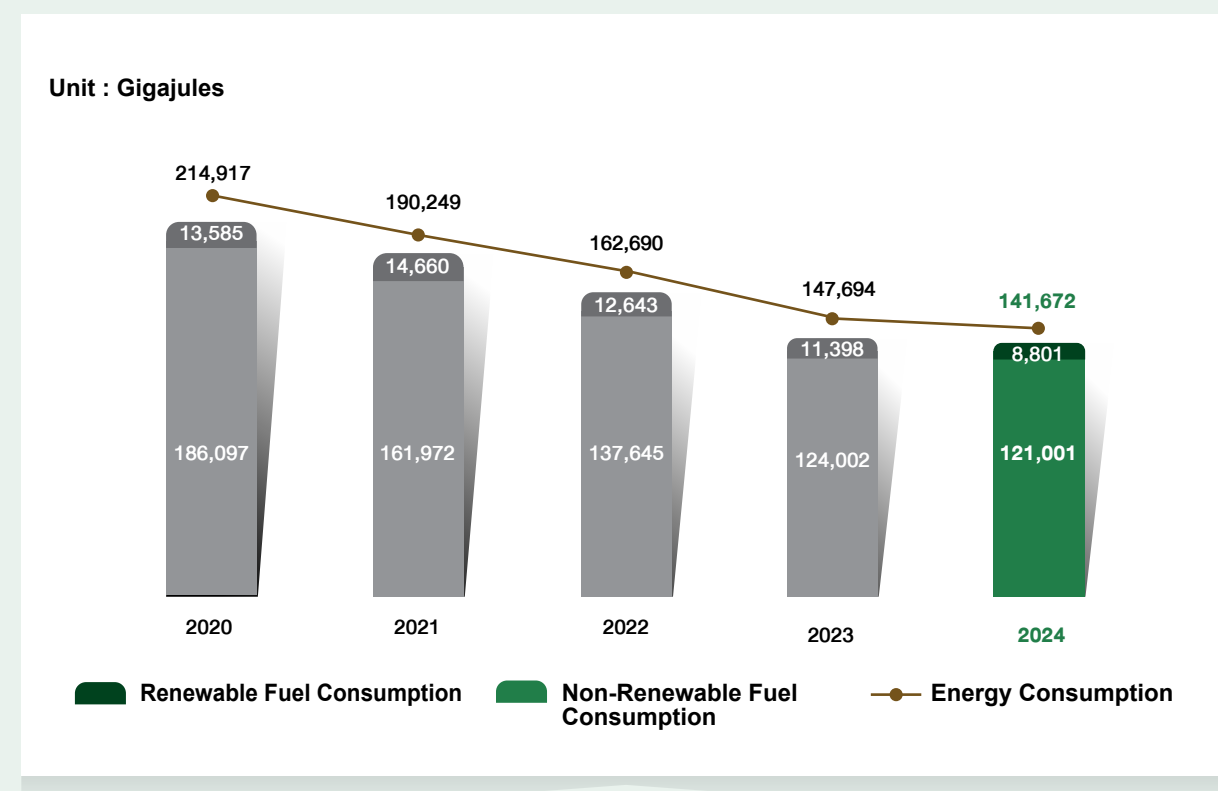
Note:

NA (Not Available) No data collected

<sup>/1</sup> verify and certify by MACSI for the first year, refer limited assurance scope (page 147-148)

<sup>/2</sup> Base year

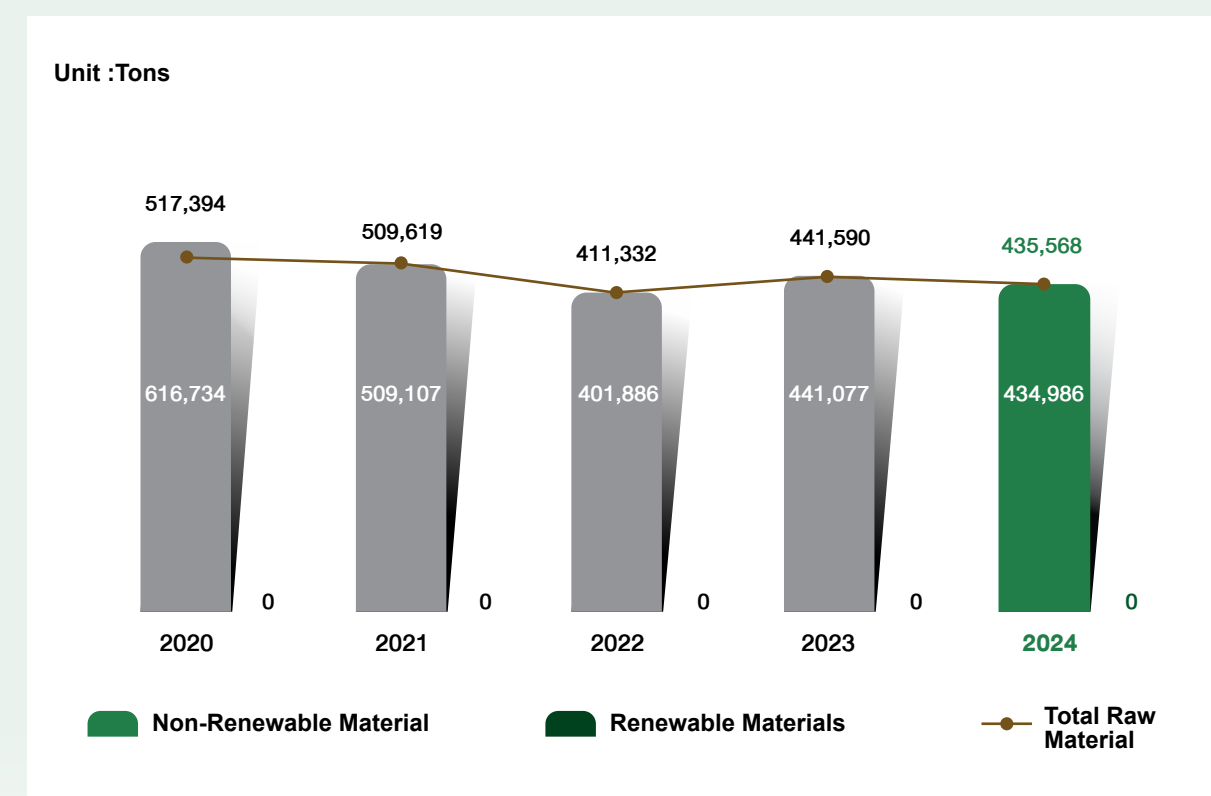
## Energy Consumption



## Raw Materials Usage

	Unit	2020	2020	2020	2020	2024	GRI Standards
Raw Material		517,394	509,619	411,332	441,590	435,568	
Non-Renewable Material	Tons	616,734	509,107	410,886	441,077	434,986	301-1
Renewable Materials		0.00	0.00	0.00	0.00	0.00	

## Raw Materials Usage





## Waste Management

	Unit	2563 <sup>/2</sup>	2564	2565	2566	2567	GRI Standards
<b>Total waste</b>	<b>Tons</b>	<b>443.9</b>	<b>247.3</b>	<b>268.1</b>	<b>185.7</b>	<b>268.8</b>	306-3
<b>Total Non-Hazardous Waste</b>		<b>249.1</b>	<b>153.8</b>	<b>94.0</b>	<b>91.9</b>	<b>83.8</b>	306-3
• Landfilled		30.7	28.2	27.6	24.1	21.1	
• Incinerated with energy recovery		0.0	0.0	0.0	0.0	0.0	
• Incinerated without energy recovery	Tons	0.0	0.0	0.0	0.0	0.0	
• Other disposal		0.0	0.0	0.0	0.0	62.6	
<b>Total Hazardous Waste</b>		<b>212.2</b>	<b>93.5</b>	<b>174.0</b>	<b>93.7</b>	<b>185.0</b>	306-3
• Landfilled		0.0	0.0	0.0	0.0	0.0	
• Incinerated with energy recovery		0.0	0.0	0.0	0.0	0.0	
• Incinerated without energy recovery	Tons	0.0	0.0	0.0	0.0	0.4	
• Other disposal		0.0	0.0	0.0	0.0	184.7	
<b>Total Waste diverted to Reuse / Recycle</b>	<b>Tons</b>	<b>194.8</b>	<b>133.5</b>	<b>206.9</b>	<b>114.9</b>	<b>218.9</b>	
<b>Total Non-Hazardous waste diverted to Reuse / Recycle</b>		<b>0.0</b>	<b>40.1</b>	<b>33.0</b>	<b>13.4</b>	<b>29.8</b>	
• Reuse	Tons	0.0	0.0	0.0	0.5	0.0	
• Recycle		0.0	40.1	33.0	12.8	29.8	
<b>Total Hazardous waste diverted to Reuse / Recycle</b>		<b>194.8</b>	<b>93.4</b>	<b>173.9</b>	<b>101.5</b>	<b>189.1</b>	
• Reuse	Tons	0.0	0.0	4.2	2.3	0.5	
• Recycle		194.8	93.4	169.6	99.3	188.7	

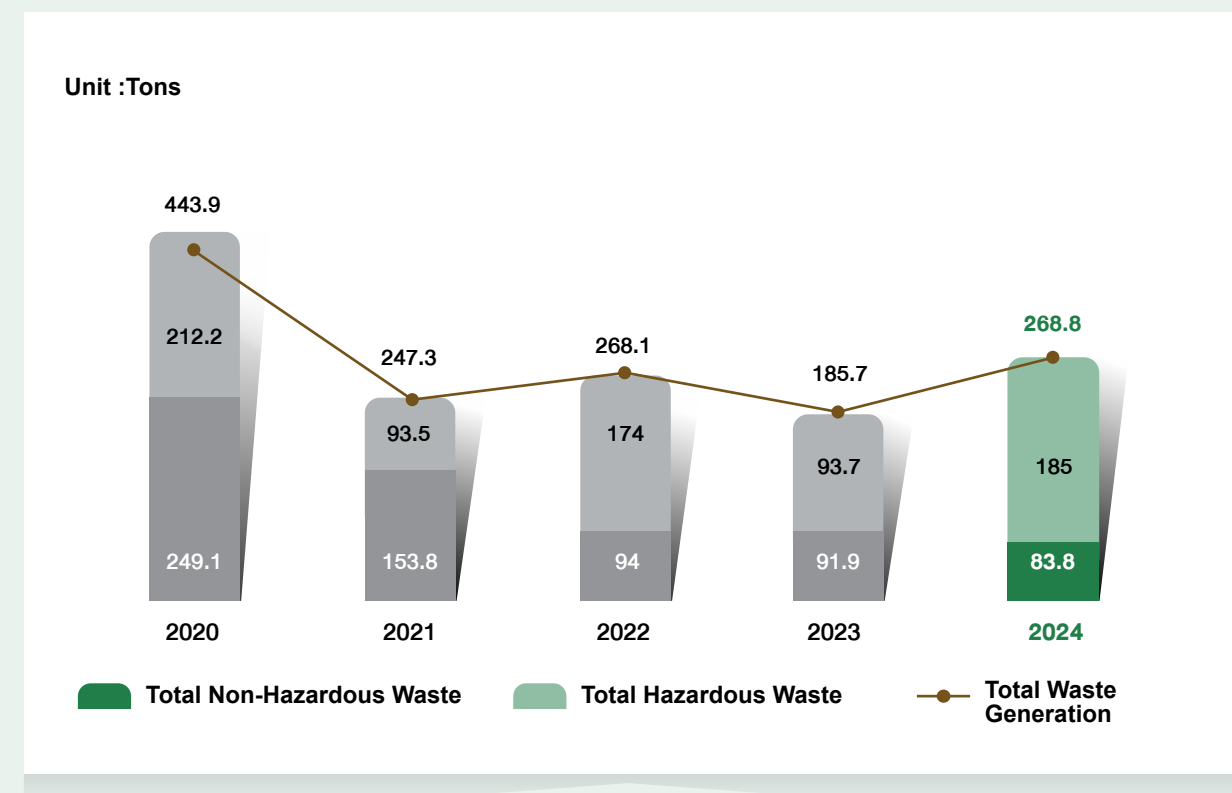
Note:

NA (Not Available) No data collected

/1 verify and certify by MACSI for the first year, refer limited assurance scope (page 147-148)

/2 Base year

## Total Waste Generation



## Violations of Legal Obligations and Regulations

	Unit	2020	2021	2022	2023	2024
Number of violations of legal environmental obligations/ regulations (over USD 10,000)	Cases	0	0	0	0	0



## Water Withdrawal and Effluent Quality

	Unit	2023 <sup>1</sup>	2024	GRI Standards
<b>Water Withdrawal by Source</b>		<b>35,081</b>	<b>37,538</b>	303-3
<b>Total Surface Water</b>	Cubic Meters	3,203	3,826	
• Freshwater TDS ≤ 1,000 mg/l		3,203	3,826	
• Other water TDS < 1,000 mg/l		0	0	
<b>Total Groundwater</b>	Cubic Meters	<b>19,893</b>	<b>22,446</b>	303-3
• Freshwater TDS ≤ 1,000 mg/l		12,160	11,606	
• Other water TDS < 1,000 mg/l		7,733	10,840	
<b>Total Third-party water</b>	Cubic Meters	<b>11,985</b>	<b>11,266</b>	303-3
• Freshwater TDS ≤ 1,000 mg/l		11,985	11,266	
• Other water TDS < 1,000 mg/l		0	0	
<b>Total Water Discharge by Destination</b>		<b>2,384</b>	<b>1,858</b>	303-4
• Third-party water		NR	NR	
• Surface water		2,384	1,858	
• Groundwater	Cubic Meters	NR	NR	
• Seawater		NR	NR	
<b>Water Discharge by fresh and other water</b>				
• Freshwater TDS ≤ 1,000 mg/l		2,384	1,858	
• Other water TDS < 1,000 mg/l		0	0	
<b>Total treated wastewater that has been recycled for reuse</b>	Cubic Meters	<b>2,849</b>	<b>2,855</b>	303-4
<b>COD<sup>2</sup></b>	Tons	<b>NA</b>	<b>0.102</b>	
<b>Water Consumption</b>	Cubic Meters	<b>32,697</b>	<b>35,680</b>	303-5

Note:

TDS (Total Dissolved Solids)

NA (Not Available) No data collected

NR (Not Relevant) Not related to business operations

<sup>1</sup>/1 verify and certify by MACSI for the first year, refer limited assurance scope (page 147-148)

<sup>2</sup>/2 Only Phrapradaeng and Phitsanulok plants of Asphalt business





# SAFETY AWARENESS

“Better safe than sorry”



## MATERIAL TOPICS

- Employee Health and Safety
- Safety During Transportation and Delivering Goods

## Material Topic

# Employee Health and Safety

Security, Safety,  
Occupational Health and  
Environment Policy



## Management Approach

The Group conducts its business within the framework of the law and promotes safety awareness among employees and stakeholders in accordance with international management standards, such as ISO 45001 Occupational Health and Safety Management Systems and ISO 39001 Road Traffic Safety Management systems.

The Group has a clear occupational health and safety policy that sets objectives and targets to reduce work-related accidents or illnesses to zero and to create a suitable and safe working environment for the well-being of employees, suppliers, contractors, and other related stakeholders.

The Group instills its employees the use of risk assessment methods at every stage of work activities to ensure that risks that may have significant impacts upon operators can be reduced and controlled. This includes promoting safety management in truck transportation by utilizing innovations in applications and various online systems to enhance safety standards in transportation, ensuring that goods can be delivered safely, on time, and in full, meeting customer expectations without affecting road users. Furthermore, the procurement process incorporates criteria for labor standards, safety, and environmental quality, alongside price, quality, and delivery of products, and services, to ensure that procurement benefits society and the economy while reducing environmental impacts.

The Group places continuous importance on the healthcare of employees and stakeholders, both in terms of health promotion and prevention and control of epidemics, medical treatment, and physical

rehabilitation. This is to ensure that employees are healthy and have physical fitness, free from work-related illnesses, accidents, and hazards from chemicals and various environmental pollutants. Proactive measures are taken, such as pre-employment health checks for new employees or when there is a job rotation, and annual health checkups for employees based on risk factors by occupational medicine physicians to ensure that the job description and working conditions are not risk factors that threaten the health of employees and those involved.

Significant changes in 2024 include the establishment of the Security, Safety, Occupational Health, and Environment Policy. Additionally, a safety initiative has been implemented to enhance workplace safety by identifying Unsafe Actions & Unsafe Conditions (UA & UC) and incorporating accident risk prevention into the objectives and targets of the Integrated Management System. The Group has also disclosed Occupational Health and Safety data, which has been independently verified and certified by the Management System Certification Institute (MASCI). This verification covers data from January to December 2024 for asphalt business in Thailand and the head office.



## Goals in 2024

- Zero fatalities from work-related operations and transportation by employees and contractors.
- Zero Lost Time Injury Frequency Rate (LTIFR) per million hours worked from work-related operations and transportation.
- Zero work-related illnesses.
- Zero complaints from customers and stakeholders related to road user safety from product transportation.
- Zero product spillage during product transportation.

## Goals for 2025

- Zero fatalities from work-related operations and transportation by employees and contractors.
- Zero LTIFR per million hours worked from work-related operations and transportation.
- Zero work-related illnesses.
- Zero complaints from customers and stakeholders related to road user safety on product transportation.
- Zero product spillage during product transportation.

## Key Performance in 2024

- Zero fatalities from work-related operations and transportation by employee.
- Zero fatalities from transportation by contractors.
- 1.25 LTIFR per million hours worked from work-related operations and transportation.
- Zero work-related illnesses per million hours worked.
- Zero complaints from customers and other stakeholders related to road user safety on product transportation.
- Zero product spillage during product transportation.
- A total of 91 safety training courses were conducted to promote continuous safety awareness among employees, totaling 5,371.50 training hours.
- Employees were encouraged to actively participate in risk identification by reporting Unsafe Acts (UA), Unsafe Conditions (UC), and near-miss incidents, with the aim of reducing the likelihood of accidents. A total of 4,091 UA and UC reports were submitted, with corrective actions implemented for 82% of the identified.



## Occupational Health and Safety Risk Management for Employees

The Group has a risk management process to address potential serious accidents and occupational illness. The process involves identifying hazards and the severity of potential incidents in all work activities by all employees participating in the risk assessment process according to the operating manuals. Contractors are involved in the assessment through safety meetings between supervisors and contractors, which continue until the work or project is completed.

Hazard identification is carried out in detail, covering the resources used, job characteristics,

design, work methods, work locations, past incidents, and changes in work processes. This allows for appropriate prediction of potential hazards, leading to the development of effective risk control measures. The Group requires the use of Hierarchy Controls, such as process modification, machinery improvement, sourcing alternative raw materials, establishing safety regulations, and ensuring a safe working environment.

Furthermore, the Group reviews risk assessments regularly, at least once a year, to ensure that risk management is appropriate and keeps up with changes.

### Examples of Key Risks and Risk Control Measures Related to Employee Occupational Health and Safety

Potential Risks	Risk Control Measures
Fire in the oil storage tank area	<ul style="list-style-type: none"> <li>• Issuing work permits for hazardous areas</li> <li>• Installing automatic fire extinguishing system and sprinkler heads</li> </ul>
Accidents from truck transportation at low speeds, such as turning into narrow spaces and reversing in the plant	<ul style="list-style-type: none"> <li>• Setting clear traffic lines and installing reflective signs</li> <li>• Increasing rear-view assistance while reversing in the plant</li> <li>• Defensive Driving Course (DDC)</li> </ul>
Product spillage from overfilling due to excess of customers' tank capacity	<ul style="list-style-type: none"> <li>• Automatic Discharge Pump Shut-off System</li> <li>• Cooperate with customer installation of tank and pipeline signs</li> </ul>
Accidents from machinery operations	<ul style="list-style-type: none"> <li>• Installing shield at machine rotating area</li> <li>• Installing Safety Interlock Switch</li> </ul>
The dispersion of hazardous chemicals occurred during the transfer process.	<ul style="list-style-type: none"> <li>• Installing a wet air pollution control system, also known as Wet Scrubber System</li> </ul>
An accident caused by a damaged product transfer hose	<ul style="list-style-type: none"> <li>• Establish the pump and pipelines maintenance and testing plans</li> </ul>
Accidents from wet and slippery floor conditions	<ul style="list-style-type: none"> <li>• Installing Safety Release Valve system for trucks</li> </ul>



## Promoting a Safety Mindset and Cultivating a Safety Culture

The Group is committed to fostering a safety culture within the organization, focusing on comprehensive safety care for both employees and contractors. Cultivating a safety culture has positive impacts on employee behaviors, increasing work accuracy and strict adherence to regulations.

The Group provides training and develops knowledge, skills, awareness, and positive attitudes towards safety in operations through various channels such as online training, video clips, meetings to analyze accidents or near-misses.

The Group also creates awareness and positive attitudes towards safety through joint safety conversations, organizing outstanding employee contests to commend employees who are good

examples of safety, and holding safety week activities for employees to present innovations and creative ideas in preventing and reducing accidents.

Prevention, control, and surveillance are always adapted to suit current situations, such as safety rules and regulations, reviewing activities with dangerous risks, analyzing risk points, and making improvements to reduce the risk of accidents. Employee health promotion activities, such as the Good Health Workforce Project, are organized to prevent work-related illness.

With a commitment to developing a proactive safety culture, the Group aims to build a strong and sustainable organization in terms of safety for all parties involved.

## Participation in Occupational Health and Safety, Environment, and Consultation

The Group encourages employees and stakeholders to participate in safety by motivating everyone to see the value in helping to create safety. There is an Occupational Safety and Health Committee (OSH Committee) consisting of representatives from management and employees, working together to raise the organization's safety standards.

The OSH Committee is responsible for considering safety policies and plans, and suggesting measures or guidelines for improvement to prevent and reduce accidents, injuries, and work-related illnesses by working with the participation of all relevant parties.

Through participation and committee-based work, the Group aims to ensure that everyone in the organization is aware and jointly responsible for creating a safe working environment.



## Promoting Safety, Building Confidence, and Strengthening Culture

Through the commitment of all parties working together to create a safety culture within the organization, in 2024, the Group has maintained its safety performance standards exceptionally well. The Group has received awards related to safety management from government agencies, as follows:

National Outstanding Award for Safety and health from the Department of Labour Protection and Welfare, Ministry of Labour. All 5 Thai plants received the awards. Specifically, Rayong plant received the prestigious Platinum Level Award for 18 consecutive years.

Zero Accident Campaign Award from the Thailand Institute of Occupational Safety and Health (Public Organization) for all 5 plants in Thailand. Award for Occupational Safety Promotion Project in High-Risk Work Environments in transportation from Department of Labour Protection and Welfare are received for the 4 plants which are Phitsanulok, Nakhon Ratchasima, Rayong, and Surat Thani.

These awards reflect the Group's commitment to promoting safety for the quality of life of employees and stakeholders, creating a better atmosphere and environment that leads to efficiency and happiness at work. This builds confidence and a reputation for the organization and creates pride among the Group's employees.

Construction Business has been a pioneer in introducing new asphalt paving technology to Thailand for over 40 years, it is committed to preventing serious accidents, especially those occurring on the roads. The Company has organized Defensive Driving Courses to develop driving skills and proper vehicle maintenance. In addition, there is education on traffic regulations and promoting the

use of seat belts at all times to ensure maximum safety for the drivers themselves, other road users, and other parties.

Construction Business focuses on systematic work planning to comply with international safety standards and promote activities that raise safety awareness among employees and contractors, such as: Tool Box Talks activities with employees at all levels; jointly analyzing risks and hazards before starting work, Safety Patrol activities to identify risks or unsafe conditions within the work site and make improvements to prevent those risks from becoming the cause of accidents; communicating and collaborating on safety issues, creating safety knowledge posters, and SSHE News, providing both training and practical exercises to ensure that employees and contractors have the knowledge and skills to work safely every day.



## Asphalt Drum Transport Trolley with Spring Mechanism Project

Continuously foster and raise awareness of an innovative-driven culture, enhancing capabilities and creativity to improve work-related safety

The project was developed by Mr. Sompong Pengsoongnern, a senior warehouse officer at Nakhon Ratchasima plant. The project aimed to reduce the accident risk during the asphalt drum transfers and minimize forklift waiting time. It improves the efficiency of product delivery to customers.

The concept of this activity originated from issues encountered during the transfer of asphalt from 200-liter drums. These drums had been stored outdoors for extended periods, which may have caused deterioration of the containers. The transfer process takes up to 88 minutes per drum and poses risks such as manual handling injuries and leaks, especially when the forklift is moved. Furthermore, the use of the forklift for this task impacts other operations that also require the equipment, potentially delaying the loading and delivery of products to customers.

To address the aforementioned issues, Mr. Sompong Pengsoongnern applied the Kaizen

principle to design a spring-assisted cart for transferring asphalt drums. Inspired by common water container stands, the design was enhanced to support weights over 200 kilograms. The spring mechanism enables the lifting of asphalt drums without requiring manual force from workers. Subsequently, a second version was developed with rollers installed on the platform, allowing the drum to be rotated and the lid aligned precisely with the discharge valve. In the third version, four wheels were added to make the cart mobile, reducing the need for forklifts to lift or move the drums.

The asphalt drum transfer cart was built at a cost of only 540 baht, utilizing leftover materials from maintenance activities. This innovation provides multiple benefits, including:

- Reducing the risk of accidents and chemical spills
- Minimizing forklift operation time
- Shortening customer products waiting times

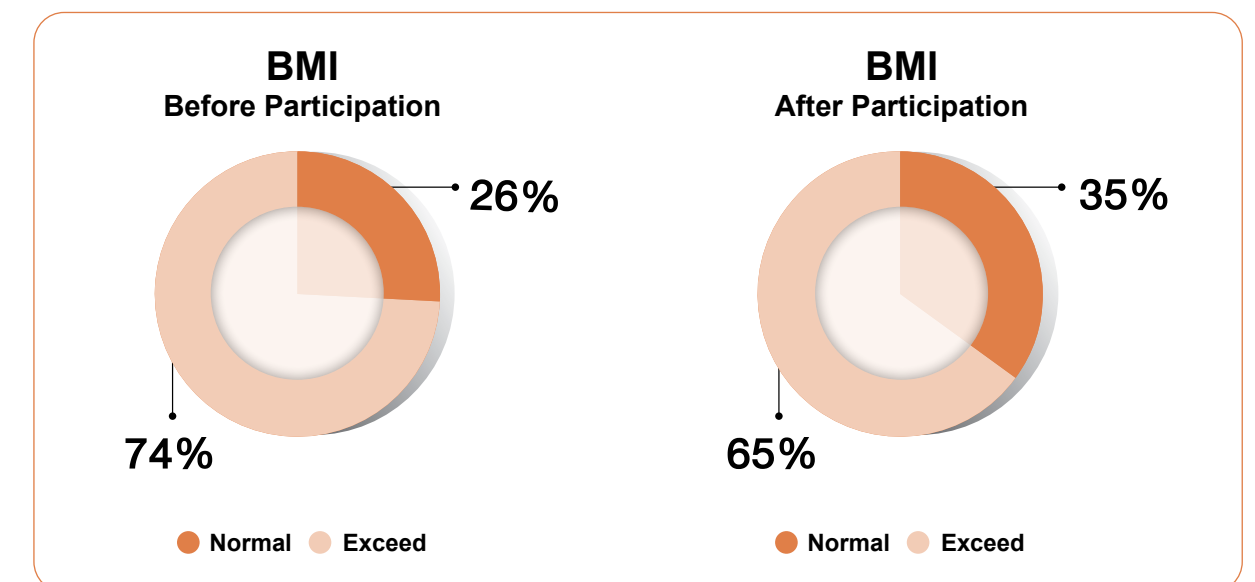


## Health supported program “BMI Conquer” Project

The "BMI" project from Phra Pradaeng plants aims to educate participants on healthy eating and exercise habits, using the Body Mass Index (BMI) as a key assessment tool to evaluate body composition and understanding. The project was initiated in response to the results of the annual health check-up, which showed that over 58% of employees had a BMI above the standard, increasing their risk of health issues. To track progress, the project measures BMI both before and after participation as part of a BMI reduction competition.

The "BMI" project not only educates participants on healthy eating and exercise habits but also creates an incentive by offering an award for the most significant BMI reduction. Before the project begins, participants are required to provide their BMI data. The project spans a two-month period, during which participants must record their daily exercise activities. At the end of the project, the participant who achieves the greatest BMI reduction will be awarded.

The project showed that 35 percent of participants were able to reduce their BMI from above the standard to within the normal range. Participants also became more mindful of their exercise habits and healthy food choices after completing the project. In addition to improving physical well-being, the project helped reduce stress, leading to increased productivity and lower medical expenses.





## SAFETY DURING TRANSPORTATION AND DELIVERING GOODS



### Material Topic

## Safety During Transportation and Delivering Goods

Security, Safety,  
Occupational Health and  
Environment Policy



### Management Approach

Transportation safety is crucial as the Group's activities involve a large number of stakeholders, including customers, communities, employees, and other road users. The Group places great importance on safety issues to reduce the chances and prevent risks that may affect stakeholders. Therefore, the Group manages safe transportation according to the internationally recognized standards of ISO 45001, the Occupational Health and Safety Management System and ISO 39001 the Road Traffic Safety Management System. This ensures effective safety management through strict safety control and supervision, enabling the delivery of goods safely, on time, and in full, meeting customer expectations.

Another critical factor in driving the efficient management of transportation safety is the Transport Safety Manager (TSM). TSMs are the main force in pushing forward the implementation of safety management related to freight transportation in accordance with the Ministerial Regulation on Transport Safety (No. 2) B.E. 2563. Additionally, the Centralized Logistics Department serves as a center for controlling and monitoring the transportation of goods by the Group and its Transporting contractors, as well as deliveries, through a 24-hour GPS and CCTV Systems to ensure that deliveries align with customer requirements.

To demonstrate its commitment to systematically managing Occupational Health and Safety, the working environment in accordance with international standards, the Group participated in the Safe Transport Safe Life project for the year 2023. This project, organized by the Labor Safety Division of the Department of Labor Protection and Welfare, focuses on driving safety, occupational health, and work environment in high-risk occupations, such as transportation. The plants that received the outstanding certificate awards were Nakhon Ratchasima, Phitsanulok, and Rayong.

Key operations in 2024, the Group recognized the importance of transportation safety and conducted surveys of all transportation routes. It also raised safety awareness among truck drivers by sharing risk points and hazards along transportation routes and making improvements to ensure safety for stakeholders along these routes.

Significant Changes in 2024: The Group reviewed the objective and target of safety during transportation and delivering goods. The Group has also disclosed Occupational Health and Safety data, which has been independently verified and certified by the Management System Certification Institute (MASCI). This verification covers data from January to December 2024 for asphalt business in Thailand and the head office.



## Goals in 2024

- Complaints from the Group's product transportation and contractors less than 1 case per 5,000 trips.
- Zero safety complaints from road users concerning the Group's transportation trucks.
- Zero environmental complaints arising from product transportation.
- Zero Lost Time Injury (LTI) and fatalities from employees and transportation by contractors.
- Zero LTIFR per million hours worked from product transportation by employees.
- Zero product spillages and key chemical leakages during product transportation.

## Goals for 2025

- Complaints from product transportation by the Group and contractors less than 1 case per 5,000 trips.
- Zero safety complaints from road users concerning the Group's transportation trucks.
- Zero environmental complaints arising from product transportation.
- Zero LTI and fatalities from employees and transportation by contractors.
- Zero LTIFR per million hours worked from product transportation by employees.
- Zero product spillages and key chemical leakages during product transportation.

## Key Performance in 2024

- Complaints from the Group's product transportation and contractors is 1.07 cases per 5,000 trips.
- Zero safety complaints from road users concerning the Group's transportation trucks.
- Zero environmental complaints arising from product transportation.
- 1 LTI case from employees and transportation by contractors.
- 0.79 LTIFR per million hours worked from product transportation by employees.
- Zero product spillages and key chemical leakages during product transportation.



## Risk Management on Product Distribution on Road

Production distribution on the road is one of the main activities with a high risk of accidents or damage to life and property without proper management. Recognizing the importance of this issue, the Group has established a comprehensive risk management approach based on international standards such as ISO 45001 and ISO 39001.

The process begins with identifying hazards that may impact road freight transport and stakeholders, both in terms of safety of life and property damage. The Group involves all drivers in identifying hazards in transportation and along transport routes, which is a crucial step in identifying risk areas and various risk factors.

Subsequently, the Group has implemented comprehensive preventive and control measures for freight transport risks. Examples include checking

the readiness of the truck and the driver before each trip, planning trips in accordance with relevant laws, determining safe parking areas, and monitoring and reporting abnormalities in every freight delivery trip.

Furthermore, the Group places importance on continuously enhancing knowledge and safety awareness in delivery for employees and transport contractors. The "Good Driver for All" project has been implemented to share knowledge and best practices in safe freight transport, raise awareness, and cultivate a joint safety culture in transportation. With a comprehensive risk management approach for road freight transport and the participation of all relevant stakeholders, the Group is committed to raising the standard of safety in delivery, reducing the likelihood of accidents and losses, and delivering trust to customers and all stakeholders.

### Examples of significant risks and risk control measures in Occupational Health and Safety of product distribution

Risks	Preventive measures or Guidelines:
<b>Truck involved in Collisions</b> <ul style="list-style-type: none"> <li>• Due to unfamiliarity with routes</li> </ul>	<ul style="list-style-type: none"> <li>• Providing an official Line account called "Pin Navigator" for contractors' drivers to directly inquire about routes.</li> <li>• Providing an application called "ePOD Application" for the Group's drivers to study routes before delivering goods and a function to navigate a route to customers' plants using truck-specific routes surveyed by the Group.</li> </ul>
<ul style="list-style-type: none"> <li>• Due to narrow routes</li> </ul>	<ul style="list-style-type: none"> <li>• The "More Sharing, More Gaining" activity allows drivers to share risk areas and hazards with other drivers and stay vigilant at those risk areas.</li> <li>• The "Enhance Safety on customers plant" project utilizes the risk areas from the "More Sharing, More Gaining" activity into consideration for improvements to ensure distribution safety</li> </ul>



## “Good Driver for All” Project

The Group recognizes the importance of ensuring the highest level of safety in road transportation. We are committed to conducting transportation activities safely and reducing the risk of accidents or impacts on stakeholders along the product distribution routes. This is achieved through the development of a management system that involves social responsibility participation and certified ISO 39001, which is another source of pride for the company as it contributes to reducing road accidents, aligning with the government's policy of moving towards a decade of road safety. The idea for the "Good Driver for All" project emerged in 2022 and continued into 2023 and 2024, following the principle of social development in the way of creating business value.

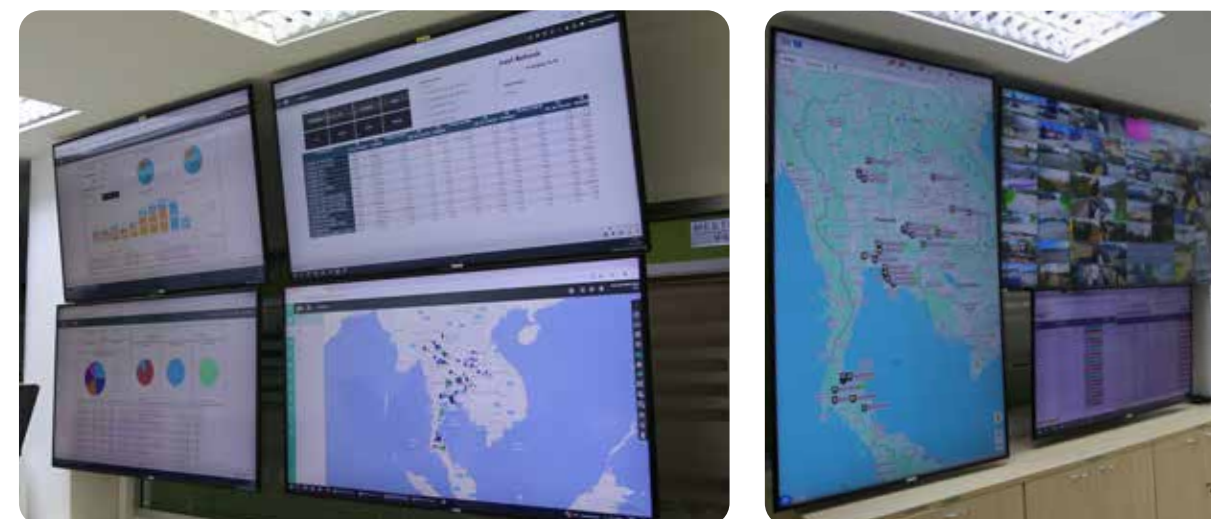
The project implementation in 2024 involved the Group's Transport Safety Manager (TSM), providing knowledge about defensive driving or behind-the-wheel techniques. The project aims to raise awareness about safety in transportation for both the use of trucks and routes and respond to the needs and expectations of stakeholders. It also fosters relationships with business partners in delivering sustainability to society, in line with the organization's core values. In 2024, it has been extended to the drivers of contractors by considering the reward for drivers with no complaints regarding product deliveries, accident, a sign of fraud, on time deliveries, and wear PPE equipment in accordance with the Group regulation.

### Results of the contractors' drivers:

- 108 drivers from contractors from 12 companies participated in the training. The average satisfaction level of participating drivers was 95.83%.

### Results of the Group's drivers:

- 67 drivers from the Group participated in the training, accounting for 100% of the total.
- 100% of participants passed both theoretical and practical assessment criteria.



## Health and Safety Performance

	Unit	2021	2022	2023	2024	GRI Standards
Hours Worked						403-9
Total Employees in Thailand		3,777,041.0	3,508,335.5	3,501,644.0	3,205,785.0	
• Asphalt Business and Head Office <sup>/1</sup>		1,534,619.0	1,396,318.5	1,298,823.0	1,266,218.0	
• Marine Business		605,226.0	516,109.5	614,708.0	672,609.0	
• Construction Business	Hours	1,637,196.0	1,595,907.5	1,588,113.0	1,266,958.0	
Total Employees in Foreign Locations <sup>/3,4</sup>	Worked	1,830,828.0	1,807,022.0	1,728,108.0	1,854,159.0	
Total Asphalt Business and Head Office Contractors <sup>/1</sup>		298,247.0	270,032.0	290,541.0	321,325.0	
• Transportation Contractor <sup>/1</sup>		50,345.0	62,522.0	64,868.0	92,613.0	
• Workplace Contractor		247,902.0	207,510.0	225,673.0	228,712.0	
Total Recordable Work-Related Injury (Beyond First Aid)						403-9
Total Employees in Thailand		0	2	5	4	
• Asphalt Business and Head Office <sup>/1</sup>		0	0	1	1	
• Marine Business		0	0	1	2	
• Construction Business	Cases	0	2	3	1	
Total Employees in Foreign Locations <sup>/2</sup>		4	3	6	0	
Total Asphalt Business and Head Office Contractors <sup>/1</sup>		1	1	0	1	
Total Recordable Work-Related Injury Rate (Beyond First Aid)						403-9
Total Employees in Thailand		0.00	0.57	1.43	1.25	
• Asphalt Business and Head Office <sup>/1</sup>	Cases/ 1,000,000	0.00	0.00	0.77	0.79	
• Marine Business		0.00	0.00	1.63	2.97	
• Construction Business	Hours Worked	0.00	1.25	1.89	0.79	
Total Employees in Foreign Locations <sup>/2</sup>		2.18	1.66	3.47	0.00	
Total Asphalt Business and Head Office Contractors <sup>/1</sup>		3.35	3.70	0.00	3.11	
Number of Fatalities						403-9
Total Employees in Thailand		0	0	1	0	
• Asphalt Business and Head Office <sup>/1</sup>		0	0	0	0	
• Marine Business		0	0	0	0	
• Construction Business	Cases	0	0	1	0	
Total Employees in Foreign Locations <sup>/2</sup>		0	0	1	0	
Total Asphalt Business and Head Office Contractors <sup>/1</sup>		1	0	0	0	

	Unit	2021	2022	2023	2024	GRI Standards
Fatalities Rate						403-9
Total Employees in Thailand		0.00	0.00	0.29	0.00	
• Asphalt Business and Head Office	Cases/	0.00	0.00	0.00	0.00	
• Marine Business	1,000,000	0.00	0.00	0.00	0.00	
• Construction Business	Hours	0.00	0.00	0.63	0.00	
Total Employees in Foreign Locations	Worked	0.00	0.00	0.58	0.00	
Total Asphalt Business and Head Office Contractors		3.35	0.00	0.00	0.00	
Number of High-Consequence Work-Related Injury (Requiring Medical Treatment for More Than 6 Months)						403-9
Total Employees in Thailand		0	0	0	0	
• Asphalt Business and Head Office <sup>/1</sup>		0	0	0	0	
• Marine Business		0	0	0	0	
• Construction Business	Cases	0	0	0	0	
Total Employees in Foreign Locations <sup>/2</sup>		0	0	0	0	
Total Asphalt Business and Head Office Contractors <sup>/1</sup>		0	0	0	0	
High-Consequence Work-Related Injury Rate (Requiring Medical Treatment for More Than 6 Months)						403-9
Total Employees in Thailand		0.00	0.00	0.00	0.00	
• Asphalt Business and Head Office <sup>/1</sup>	Cases/	0.00	0.00	0.00	0.00	
• Marine Business	1,000,000	0.00	0.00	0.00	0.00	
• Construction Business	Hours	0.00	0.00	0.00	0.00	
Total Employees in Foreign Locations <sup>/2</sup>	Worked	0.00	0.00	0.00	0.00	
Total Asphalt Business and Head Office Contractors <sup>/1</sup>		0.00	0.00	0.00	0.00	
Number of Work-Related Lost Time Injury						403-9
Total Employees in Thailand		0	2	4	4	
• Asphalt Business and Head Office <sup>/1</sup>		0	0	1	1	
• Marine Business		0	0	0	2	
• Construction Business	Cases	0	2	3	1	
Total Employees in Foreign Locations <sup>/2</sup>		1	1	6	0	
Total Asphalt Business and Head Office Contractors <sup>/1</sup>		1	1	0	1	

Remark:

NA: Not available

<sup>1</sup> Data verified by MASCI assurance scope (Pages 147-148)

<sup>2</sup> Covered the Malaysia, Cambodia, China, Indonesia, Vietnam, and Laos

<sup>3</sup> Data from Cambodia, China, and Laos available from 2023 onward

<sup>4</sup> Covered the Malaysia Indonesia, and Vietnam (ISO 9001 Certification)

<sup>5</sup> Covered the Malaysia and Indonesia (ISO 45001 Certification)



	Unit	2021	2022	2023	2024	GRI Standards
Work-Related Lost Time Injury Frequency Rate (LTIFR)						403-9
Total Employees in Thailand		0.00	0.57	1.14	1.25	
• Asphalt Business and Head Office <sup>1</sup>	Cases/	0.00	0.00	0.77	0.79	
• Marine Business	1,000,000	0.00	0.00	0.00	2.97	
• Construction Business	Hours	0.00	1.25	1.89	0.79	
Total Employees in Foreign Locations <sup>2</sup>	Worked	0.55	0.55	3.47	0.00	
Total Asphalt Business and Head Office Contractors <sup>1</sup>		3.35	3.70	0.00	3.11	403-9
Number of Near Miss						
Total Asphalt Business and Head Office Employees and Contractors <sup>1</sup>	Times	15	49	64	108	
Number of Fatailities from Product Transportation						
Total Employees in Thailand		0	0	0	0	
• Asphalt Business and Head Office <sup>1</sup>		0	0	0	0	
• Marine Business	Cases	NA	NA	0	0	
• Construction Business		NA	NA	0	0	
Total Employees in Foreign Locations <sup>2</sup>		NA	NA	1	0	
Total Asphalt Business and Head Office Contractors <sup>1</sup>		1	0	0	0	403-9
Fatailities Rate from Product Transportation						
Total Employees in Thailand		0.00	0.00	0.00	0.00	
• Asphalt Business and Head Office <sup>1</sup>	Cases/	0.00	0.00	0.00	0.00	
• Marine Business	1,000,000	NA	NA	0.00	0.00	
• Construction Business	Hours	NA	NA	0.00	0.00	
Total Employees in Foreign Locations <sup>2</sup>	Worked	NA	NA	0.58	0.00	
Total Asphalt Business and Head Office Contractors <sup>1</sup>		19.86	0.00	0.00	0.00	403-9
Number of Work-Related Lost Time Injury from Product Transportation						
Total Employees in Thailand		0	0	0	3	
• Asphalt Business and Head Office <sup>1</sup>		0	0	0	1	
• Marine Business		NA	NA	0	2	
• Construction Business	Cases	NA	NA	0	0	
Total Employees in Foreign Locations <sup>2</sup>		NA	NA	0	0	
Total Asphalt Business and Head Office Contractors <sup>1</sup>		0	1	0	0	

	Unit	2021	2022	2023	2024	GRI Standards
Work-Related Lost Time Injury Frequency Rate (LTIFR) from Product Transportation						
Total Employees in Thailand		0.00	0.00	0.00	0.94	
• Asphalt Business and Head Office <sup>1</sup>	Cases/	0.00	0.00	0.00	0.79	
• Marine Business	1,000,000	NA	NA	0.00	2.97	
• Construction Business	Hours	NA	NA	0.00	0.00	
Total Employees in Foreign Locations <sup>2</sup>	Worked	NA	NA	0.00	0.00	
Total Asphalt Business and Head Office Contractors <sup>1</sup>		0.00	3.70	0.00	0.00	
Number of Work-Related Lost Time Injury						
Total Employees in Thailand		0	30	58	74	
• Asphalt Business and Head Office <sup>1</sup>	Days	0	0	5	47	
• Marine Business		0	0	0	24	
• Construction Business		0	30	53	3	
Total Employees in Foreign Locations <sup>2</sup>		37	4	160	19	
Total Asphalt Business and Head Office Contractors <sup>1</sup>		7	8	0	8	
Number of Fatality Occupational Illness						403-10
Total Employees in Thailand		0	0	0	0	
• Asphalt Business and Head Office <sup>1</sup>	Cases	0	0	0	0	
• Marine Business		NA	NA	0	0	
• Construction Business		NA	NA	0	0	
Total Employees in Foreign Locations <sup>2</sup>		NA	NA	0	0	
Total Asphalt Business and Head Office Contractors <sup>1</sup>		0	0	0	0	
Number of Lost Time Occupational illness						403-10
Total Employees in Thailand		0	0	0	0	
• Asphalt Business and Head Office <sup>1</sup>	Cases	0	0	0	0	
• Marine Business		NA	NA	0	0	
• Construction Business		NA	NA	0	0	
Total Employees in Foreign Locations <sup>2</sup>		NA	NA	0	0	
Total Asphalt Business and Head Office Contractors <sup>1</sup>		0	0	0	0	

Remark:

NA: Not available

/1 Data verified by MASCI assurance scope (Pages 147-148)

/2 Covered the Malaysia, Cambodia, China, Indonesia, Vietnam, and Laos

/3 Data from Cambodia, China, and Laos available from 2023 onward

/4 Covered the Malaysia Indonesia, and Vietnam (ISO 9001 Certification)

/5 Covered the Malaysia and Indonesia (ISO 45001 Certification)

	Unit	2021	2022	2023	2024	GRI Standards
<b>Lost Time Occupational illness Frequency Rate</b>						403-10
<b>Total Employees in Thailand</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	
• Asphalt Business and Head Office <sup>/1</sup>	Cases/	0.00	0.00	0.00	0.00	
• Marine Business	1,000,000	NA	NA	0.00	0.00	
• Construction Business	Hours	NA	NA	0.00	0.00	
<b>Total Employees in Foreign Locations<sup>/2</sup></b>	Worked	<b>NA</b>	<b>NA</b>	<b>0.00</b>	<b>0.00</b>	
<b>Total Asphalt Business and Head Office Contractors<sup>/1</sup></b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	
<b>Number of Employees under Occupational Health and Safety Management</b>						403-8
<b>Total Employees in Thailand</b>		<b>1,495</b>	<b>1,355</b>	<b>1,301</b>	<b>1,134</b>	
• Asphalt Business and Head Office <sup>/1</sup>		597	540	524	520	
• Marine Business	Cases	163	147	188	186	
• Construction Business		735	668	589	428	
<b>Total Employees in Foreign Locations<sup>/2</sup></b>		<b>738</b>	<b>741</b>	<b>774</b>	<b>793</b>	
<b>Number of Employees under Occupational Health and Safety Management and Internal Audit System</b>						403-8
<b>Total Employees in Thailand</b>		<b>597</b>	<b>540</b>	<b>524</b>	<b>520</b>	
<b>Total Employees in Foreign Locations<sup>/4</sup></b>	Cases	<b>549</b>	<b>540</b>	<b>601</b>	<b>620</b>	
<b>Number of Employees under Certification of Occupational Health and Safety Management Systems from External Certify Bodies</b>						403-8
<b>Total Employees in Thailand</b>		<b>597</b>	<b>540</b>	<b>524</b>	<b>520</b>	
<b>Total Employees in Foreign Locations<sup>/5</sup></b>	Cases	<b>385</b>	<b>367</b>	<b>418</b>	<b>439</b>	

Remark:

NA: Not available

/1 Data verified by MASCI assurance scope (Pages 147-148)

/2 Covered Malaysia, Cambodia, China, Indonesia, Vietnam, and Laos

/3 Data from Cambodia, China, and Laos available from 2023 onward

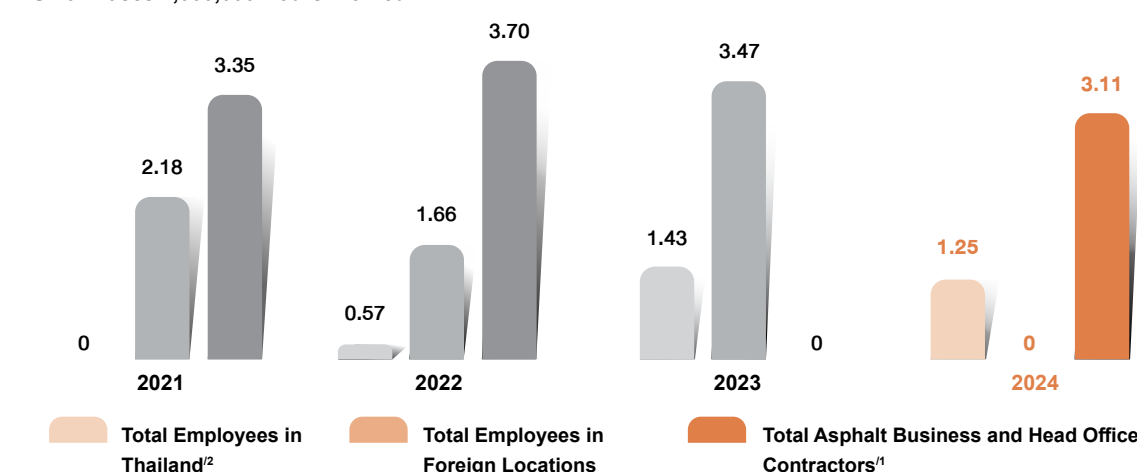
/4 Covered Malaysia, Indonesia, and Vietnam (ISO 9001 Certification)

/5 Covered Malaysia and Indonesia (ISO 45001 Certification)



## Total Recordable Work-Related Injury Rate (Beyond First Aid)

Unit : Cases/1,000,000 Hours Worked

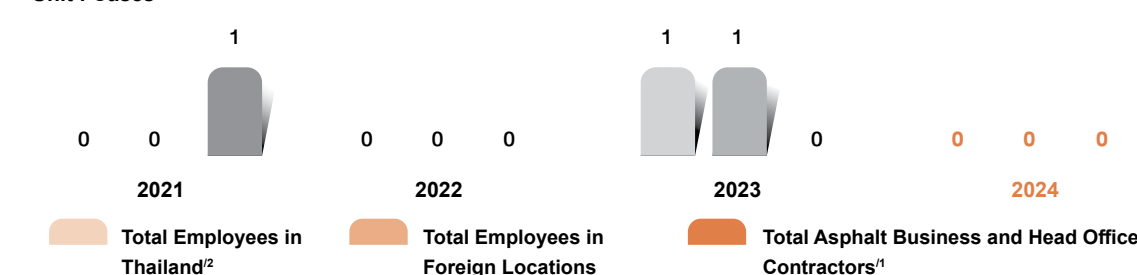


/1 Data verified by MASCI assurance scope (Pages 147-148)

/2 Asphalt Business and Head office data have been verified by MASCI

## Number of Fatality

Unit : Cases

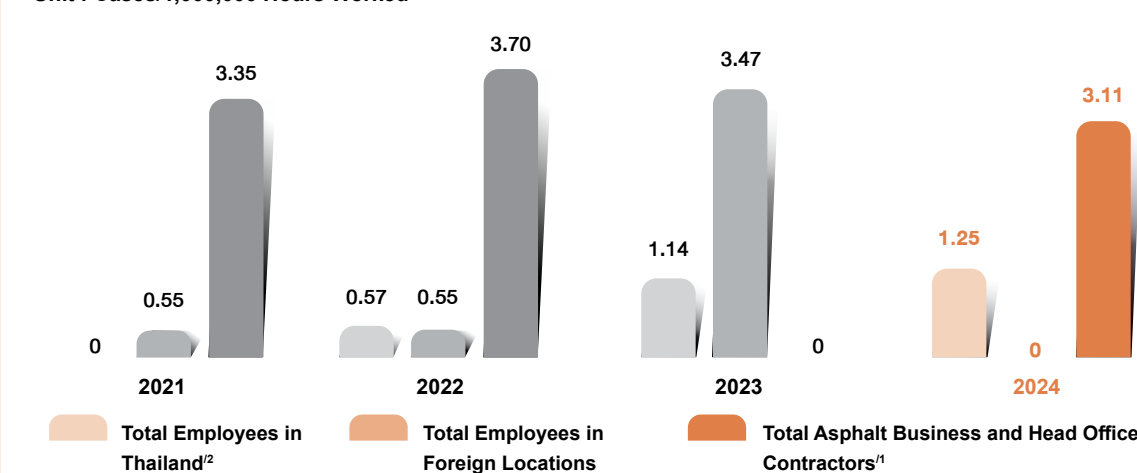


/1 Data verified by MASCI assurance scope (Pages 147-148)

/2 Asphalt Business and Head office data have been verified by MASCI

## Work-Related Lost Time Injury Frequency Rate (LTIFR)

Unit : Cases/1,000,000 Hours Worked



/1 Data verified by MASCI assurance scope (Pages 147-148)

/2 Asphalt Business and Head office data have been verified by MASCI



# GOOD CORPORATE GOVERNANCE

“For strong business foundation”



## MATERIAL TOPICS

- Risk & Crisis Management
- Government Policies and Budgets
- Cyber Security
- Participation in Community and Social Development

## Material Topic

# Risk & Crisis Management

Enterprise Risk  
Management  
Policy



Risk  
Management  
Committee  
Charter



## Management Approach

The Group places importance and encourages employees to apply risk management principles into operations with continuous improvement in accordance with the COSO ERM framework and ISO:31000 Risk management standards. This is based on the concept of creating Risk Culture, which is one of the DNA of TIPCO Core Values in the dimension of Prudence. This means considering all aspects, taking into account risks and responsibilities in work, as well as increasing the consideration of sustainability risks (ESG risks) in the risk identification process.

Effective risk management is crucial for the sustainable growth of the Group's business. It enables the management to adjust strategies and operational plans appropriately amidst the volatility of internal and external factors and future changes, in order to achieve goals efficiently and create long-term value for the Group and its stakeholders. The Group, therefore, applies international Enterprise Risk Management principles and emphasizes the integration of risk management as part of its operations and organizational culture at all levels with prudence.

## Goals in 2024

- Develop Risk Management Committee Charter
- Review Enterprise risk management policy on annual basis
- Report top corporate risks on a quarterly basis
- Hold Risk Management Committee meeting twice a year
- Integrate Enterprise Risk Management process into double materiality assessment
- Identify and assess climate risks and integrate them into the Enterprise Risk Management process
- Expand the implementation of Enterprise Risk Management to subsidiary in Laos
- Provide training on Enterprise Risk Management for employees

## Goals for 2025

- Monitor and review risk management, internal control measures, and the effectiveness of the risk management processes throughout the organization on an ongoing basis
- Apply international standard risk management principles to improve, develop, and monitor operations and support the organization's strategy formulation for long-term sustainability
- Set a goal to undergo the second verification of the international standard ISO 31000:2018 – Risk management guidelines
- Proactively improve business continuity plans by incorporating potential disasters and other unexpected incidents with possible high impact on operations
- Promote the use of technology in business operation and integrate the business continuity management system



## Key Performance in 2024

### Document

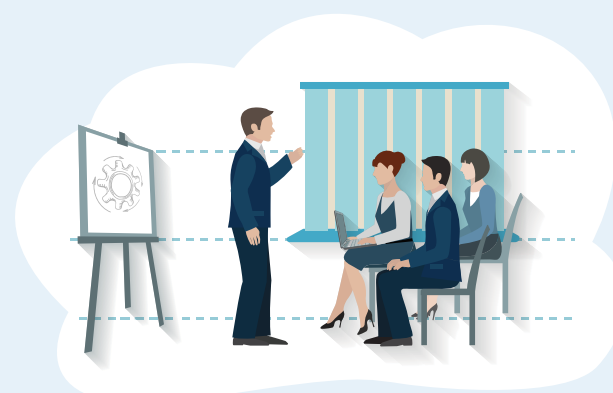
- Launched the first Risk Management Committee Charter
- Reviewed the Enterprise Risk Management Policy in 2024
- Identified and assessed climate risks and integrated them into the Enterprise Risk Management process
- Expanded the implementation of Enterprise Risk Management to subsidiary in Laos
- Provided training on Enterprise Risk Management for employees

### Reporting

- Reported top corporate risks on a quarterly basis to the Risk Management Committee, Executive Committee, and the Board of Directors
- Reported to the Audit Committee the enterprise risk management progress on quarterly basis

### Enterprise Risk Management

- Held two Risk Management Committee meetings
- Integrated Enterprise Risk Management process into double materiality assessment



## Instill a Risk Culture

The Group adopted the concept of 3-level risk management (3 Lines of Defense) to apply in corporate risk management under governance structure - the Board of Directors is responsible for approving the Risk Management Policy and Risk Appetite. The Risk Management Committee (comprising board members and senior executives) oversees and monitors risk management and internal control at the operational level, and the Internal Audit Department, charged with assessing the effectiveness and adequacy of the risk management process.

The Group actively encourages its employees to comprehend and apply risk management principles in their work processes to proactively identify, prevent, and manage risks while continuously seeking

opportunities to enhance work processes in alignment with the Group's strategic direction and objectives. This is achieved by instilling a strong sense of risk ownership among employees at all levels, emphasizing their roles, responsibilities, and accountability in managing risks associated with their own work and that of relevant stakeholders both within and outside the organization. The Group promotes open-communication and collaborative risk management among employees through various initiatives such as internal training, knowledge sharing via diverse communication channels, risk assessment training, and collective brainstorming sessions aimed at improving and developing operational systems in a cooperative manner





## Enterprise Risk Management Organization



In 2024, the Risk Management Committee convenes to review the Enterprise Risk Management policy and all risk issues of the organization, including plans and control measures, as well as the top corporate risks.



## Effective Risk Management Processes Promotes Long-term Corporate Sustainability Management

The Group perform risk management process by identifying corporate risks, strategic risks, and operational risks, and sustainability risks (ESG risks) according to the value chain with the business direction and goals of the organization. This process focuses on risk assessment, risk monitoring and control, reporting and communication, and regularly reviewing the adequacy and effectiveness of risk management by each relevant department. The Risk Management Committee, which is under the supervision of the Executive Committee and the Board of Directors, oversees this process.





## Business Continuity Management

Tipco Asphalt Group places great importance on Business Continuity Management to ensure that the business can continue to operate continuously, as well as to ensure the safety and protection of stakeholders' interests and create sustainability for the business. The Business Continuity Plan covers the identification of activities and positions that are critical to business continuity operations and regular rehearsals with relevant departments.

In emergency situations, the Group has processes and protocols in place to closely monitor

news and situations in order to continuously assess the situation, the impact on the company, and the safety of employees, customers, and relevant stakeholders. The Group also applies business continuity management guidelines. Furthermore, the Group also reviews and adjusts its operational approach to be flexible and timely, as well as establishing a special task force to coordinate internally and manage emergency situations.

### Summary of Emergency Drill implementation in 2024 (Times)

Department/ Location	Emergency Plan						Truck Accident	
	Fire	Spilled Chemical	Flood	Rescue at height	IT System Recovery	Terminal Safety Measures (Domestic and International)	Road rescue Plan	Oil Spill Cleanup
Construction Business	3							
Refinery in Malaysia	15			1	3		1	4
Marine Business					1	2		
Headquarter in Thailand	1				1			
5 Plants in Thailand	6	6	5			9	5	4



## PARTICIPATION IN COMMUNITY AND SOCIAL DEVELOPMENT





## Material Topic

# Participation in Community and Social Development

Corporate Social Responsibility Policy



## Management Approach

The Group recognizes that its operations must consider all stakeholders, including communities, society, and the environment. To this end, the Group has established a corporate social responsibility policy based on the ISO 26000 standard, following the concept of "Sustainable business operations with responsibility to society and communities". This policy emphasizes understanding and addressing community problems, in collaboration with stakeholders to plan solutions for sustainable development in economic, social, and environmental dimensions.

In 2024, the Group placed importance on continuously implementing key projects, such as "patching potholes" on roads for safe travel using Tipco Premix products that can be used easily to repair small potholes.

In addition, the Group has initiated the "Safety Road for Children" project to raise awareness of road

safety among youth and the "3Rs for Children" project that aims to share knowledge of waste management according to the 3Rs principles to promote sustainable environment.

For public health, the Group has implemented the "Hand 2 Heart : CPR for life" project to provide basic life-saving training to communities, aiming to reduce the mortality rate from sudden cardiac arrest. This project has received cooperation from public health agencies, communities, and the private sector in the area.

The Group demonstrates its commitment to conducting business alongside giving back to society by creating sustainable shared value.



## Goals in 2024

- Implementing projects to create shared value, especially direct business activities (CSR in Process) that respond to the needs and expectations of communities in align with the organization's ethical principles and sustainability strategies

## Goals in 2025

- Satisfaction with the project is no less than 90%.



## Key Performance in 2024

- Community satisfaction with various projects was at a high level of 93.13%.
- The employee participation rate in volunteering activities was at a high level of 100%, demonstrating the strong creation of an organizational culture focused on social engagement.
- The number of volunteer hours employees worked for society reached an impressive 8,920 hours, reflecting their dedication to creating value for society.
- A total of 8,167 stakeholders participated in the projects.
- The Tipco Open House project, which aimed to educate students, the general public, and regulatory government agencies about the asphalt industry, was held 3 times with a total of 140 participants.
- The Road maintenance project for safe travel added 2 new routes, totaling 4.48 kilometers, in communities where the plants are located in 5 provinces in Thailand.
- The "Basic Life Support" project for a safe life involved the total of 681 participants.
- The Integrated Bueng Takhreng development

project, "From Home Trees to Bueng Trees," relocated 60 trees over 4 meters tall in 2024.

- The "Knowledge Sharing" project provided training and demonstrations on the use of Tipco Premix to students, government agencies, and communities, with 350 participants.
- The "Road Safety Knowledge" project for children and youth reached 1,250 participants in 7 schools.
- The project to improve the sensory stimulation courtyard for special needs children at the Special Education Center in Phitsanulok was carried out 1 times.
- Elastic Bands, Life-Changing" for the Elderly of Phu Chao Saming Phrai Municipality, Samut Prakan Province held twice, with a total of 565 participants.
- The 3Rs for Children project, which provided knowledge on general waste separation according to the 3Rs principles, had 775 participants, including students, government agencies, and communities.
- The reforestation project aims to increase green space in communities within the areas of all 5 plants, planting a total of 2,646 trees.



## Sustainable Development towards Creating Shared Value with Communities and Society

The Group is committed to conducting business with responsibility towards the environment and society, with the goal of continuously improving the quality of life and creating positive change for communities and society. The Group also places importance on the participation of employees and communities in social development activities, focusing on strengthening communities, enhancing the quality of life, and preserving the environment. These include reforestation and green area development, construction and improvement of roads and infrastructure in communities, support for education and health, as well as the promotion of occupations and income for local people.

The Group has carried out various social activity projects by working together with communities based on the principle of "Reach, Understand, and Develop Together" for the better quality of life of people in the communities. These continuous social activity projects are in line with the Group's sustainability policy, such as Patching Pothole, Knowledge Sharing, Road Safety for Children, Basic Life Support Project, Forest Planting and Conservation Project at Ban Bang Krasop, and Integrated Bueng Takhreng development project.

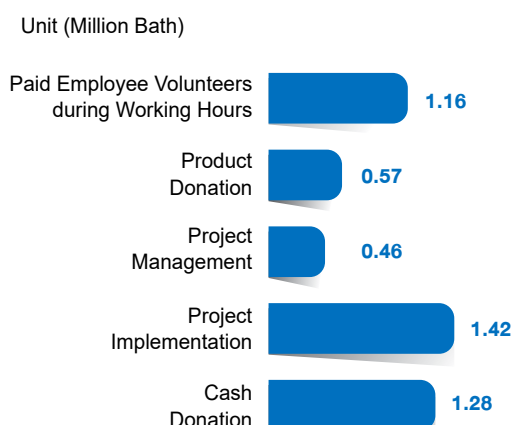
Under the concept of "Creating Shared Value with Society," the Group has continuously encouraged employees to participate in various activities, which have received good cooperation from the communities. This creates good relationships and benefits all parties.

The results of the Group's involvement in community and social development reflect its commitment to creating positive change, such as increased green areas, improved community infrastructure, supplementary occupations and income for locals, as well as better education and health care for children and youth.

The Group is committed to expanding its participation in community and social development to be more extensive and inclusive in order to create sustainable change and serve as a good example for other organizations in the future



### Project Value for Community and Environmental Development



## Community and Social Concerns Regarding Tipco Asphalt Group's Operations

The Group committed to conducting our business while giving importance to the concerns of surrounding communities, which may impact the environment, health, economy, and way of life of communities near our production plants. The main issues regarding the concerns that the organization has been monitoring are as follows:

- Environment :** Communities are concerned about air pollution from dust, particulate matter, and odors from the asphalt production process, which affects the quality of life and the environment.

- Leakage of asphalt from transport vehicles:** There is a risk of asphalt leakage during the transportation of raw materials and products.
- Fire:** Communities are worried about the risk of fires in the plant's areas.
- Transportation and Logistics:** The use of community roads for transporting raw materials and products may cause safety problems and traffic congestion.
- Transparency and Participation:** Communities want to know information and participate in decisions about projects that may affect the community

Community Concerns	Group's Actions	From the Dialogue Results
Odor nuisance from production activities	<ul style="list-style-type: none"> <li>Installed odor capture systems and sought raw materials that cause less odor</li> </ul>	There are no concerns from the communities
Spillage and leakage of asphalt	<ul style="list-style-type: none"> <li>Strictly provided safety training in asphalt transportation and extended it to contractors</li> </ul>	There are no concerns from the communities
Fire in operational areas	<ul style="list-style-type: none"> <li>Provided annual fire prevention and firefighting drill</li> <li>Installed prevention and suppression systems according to international standards</li> </ul>	There are no concerns from the communities
Safety of communities along transport routes and damaged roads	<ul style="list-style-type: none"> <li>Strictly provided safety training in asphalt transportation and extended it to contractors</li> </ul>	There are no concerns from the communities
Safety of road usage in communities	<ul style="list-style-type: none"> <li>Road patching potholes for communities</li> <li>Safety Road for Kids project</li> <li>Basic life support training project</li> </ul>	There are no concerns from the communities

However, from dialogues with communities within a radius of no more than 5 kilometers from the plants, it was found that currently, the communities no longer have these concerns and do not have any new additional concerns.

The Group places great importance on these issues and is committed to maintaining operational standards to prevent problems that may affect the community, as well as continuously disclosing

information and listening to opinions from the community. This is to ensure transparency and participation in sustainable business operations

Complaints from the Communities			
2021	2022	2023	2024
0	0	0	0



## Participation in Developing or Solving of Social Issues through Business Processes

### “Patching Potholes” Project: Temporary Road Surface maintenance with Tipco Premix



#### Economic Benefit Indicators:

- Enhance the ability to develop innovation for environmentally friendly products and services
- Strengthen the image of being a leader in asphalt business innovation
- Have partners in disseminating knowledge and product usage across 5 plants



#### Social and Environmental Benefit Indicators:

- SROI of 11.96%
- Conducted road maintenance training for 181 people
- Repaired 2 road routes, with a total distant of 4.48 kilometers
- Donated 608 bags of Tipco Premix
- Average satisfaction rate of 93.37%



The Group prioritizes sustainable development within the organization and in surrounding communities, focusing on creating participation from all departments and everyone in the organization, as well as providing opportunities for communities to participate in setting directions and owning various projects through close dialogues.

Following dialogues with communities, it was found that past concerns on road safety remain a priority for the Group, which continues to raise awareness and implement ongoing projects to ensure the safety of community members while traveling on roads.

The "Patching Potholes" project is one of the Group's efforts to reduce the risk of accidents that may occur due to damaged road conditions with potholes. It involves temporary road surface maintenance before a budget for permanent maintenance is available. The Group has collaborated with government agencies, the private sector, and communities to survey and repair road surfaces using Tipco Premix.

In 2024, the "Patching Potholes" project carried out road maintenance in partnership with business allies, local government agencies, and communities. The Surat Thani plant worked with Surat Thani Municipality to repair potholes, covering a distance of 2 kilometers and an area of approximately 70 square meters. The Nakhon Ratchasima plant, in partnership with the Naklang Subdistrict Administrative Organization, repaired damaged roads over a total distance of 2.48 kilometers, covering an area of about 125 square meters. The project also raised awareness of the company's products, positively impacting the sales of Tipco Premix in the area, demonstrating the creation of value for both the company and the community.



### Hands 2 Heart : CPR for Life Project

“With great cares.... from all of us Tipco Asphalt”



#### Economic Benefit Indicators:

- Enhance the reputation of giving importance to and caring for the community, mitigating loss of life after accidents.
- Partners in basic life support training include government agencies, public health agencies, private sector organizations, and community volunteers in the areas where all five plants are located, with a total of no less than 540 people trained.



#### Social and Environmental Benefit Indicators:

- SROI of 3.41%
- 30 instructors trained to teach communities
- 681 providers trained in life-saving skills
- Accumulative total of 4,033 people trained
- Communities in 8 provinces received training
- Average satisfaction rate of 95.29%



The “Hands 2 Heart: CPR for Life” project is the Group's commitment to creating a safe and sustainable society through basic first aid and CPR training for employees and the public. The training follows international standards set by The Heart Association of Thailand.

Accidents can happen at any time, and having someone with basic first aid knowledge nearby can help save the lives of those involved in a timely manner. For this reason, the Group places great importance on training employees to become certified instructors who can impart basic life-saving knowledge to fellow employees and surrounding communities.

In 2024, 30 employees completed training to become basic life support instructors. They conducted training sessions and shared knowledge with employees, community, and other stakeholder approximately 681 members through the “With great cares.... from all of us Tipco Asphalt” project, which was carried out in collaboration with government agencies, public health organizations, and Partners from private sector.

In addition to helping reduce fatalities from accidents and emergencies, this project also instills a culture of caring and mutual assistance, leading to a stronger and more sustainable society





## Integrated Bueng Takhreng Development Project



The integrated Development of Bueng Takhreng project is an environmental conservation project by the Group in collaboration with Bang Rakam Mueangmai subdistrict municipality, Phitsanulok Province. The project aims to develop the area around Bueng Takhreng by increase the green are and restores ecosystems creating a new green spaces for Phitsanulok Province

Integrated Development of Bueng Takhreng project consist of 3 sub-project as follow:

- **The “Our Trees Our Forests” Project** was initiated in 2016, focusing on reforestation by planting a native tree species to promote biodiversity in the Area
- **The "Thanon Ma, Pa Yang Yu" project** was initiated in 2018. Its objective is to conserve trees that need to be cut down due to infrastructure expansion by relocating them to the Bueng Takhreng area.
- **The “ From Home Trees to Bueng Trees” Project** was initiated in 2020. The project aims to conserve trees that need to be cut down for area development by relocating them to the area around Bueng Takhreng.

In 2024, the project being implemented as follows:



## From Home Trees to Bueng Trees Project



### Economic Benefit Indicators:

- Support the Group's greenhouse gas emissions reduction goals
- Enhance the image of giving importance to environmental care
- Build a network of environmental partners



### Social and Environmental Benefit Indicators:

- Average satisfaction rate of 94.20%



In 2024, the project relocated 60 trees from the area development projects in Bang Rakam District and from community donations to be planted around Bueng Takhreng. In addition to helping preserve the environment, this also transformed Bueng Takhreng into a lush and beautiful recreational spot for Phitsanulok residents and tourists.

Interestingly, each tree has its history recorded through a QR code system, such as its original planting location, previous owner, etc. This allows visitors to learn about the story and origin of each tree in an engaging way, fostering environmental conservation awareness through fun activities.

Moreover, since the project's inception in 2020, the Group has relocated a total of 233 trees,

The “From Home Trees to Bueng Trees” project exemplifies development that integrates environmental, economic, and social sustainability.





### Economic Benefit Indicators:

- Support the Group's greenhouse gas emissions reduction goals
- Enhance the reputation on the importance to environmental care
- Build a network of environmental partners



### Social and Environmental Benefit Indicators:

- Average satisfaction rate of 94.20%

## Our Trees Our Forests

In 2024, 500 native trees were planted around the Bueng Takreng area. This project not only aims to conserve the environment but has also transformed Bueng Takreng into a lush and attractive recreational space for both residents of Phitsanulok and tourists. Furthermore, the project promotes community awareness regarding the value of green spaces, cultivating a sense of ownership among local residents and stakeholders to ensure the area's care, preservation, and sustainable development.

There are 3,584 trees planted since the project inception in 2016.



## Knowledge Sharing



### Economic Benefit Indicators:

- Strengthen the image of being a leader in asphalt business innovation
- Enhancing the capability to develop and innovate the asphalt product



### Social and Environmental Benefit Indicators:

- 218 university student gained hands-on experience on asphalt knowledge
- Fostering the social responsibility awareness for a university student

The Knowledge Sharing project involves the group sharing expertise on asphalt products to enhance the learning of students, customers, and authorities in road repair using Tipco Premix products. These products allow for easy small pothole repairs and surface improvement, with hands-on practice through the project 'Patching Potholes' activity. In 2024, the group organized 3 projects for students as follows:

### Project: The 5<sup>th</sup> Volunteer with the Civil Engineering student, Chulalongkorn university

Pibulsongkroh 1 School, located in Cha-am District, Phetchaburi Province, there are damaged roads at school entrance, resulting in transportation difficulties and safety risks for both students and teachers. The 5th volunteer project, organized by the Company collaborate with civil engineering students, aims to address this issue by repairing the roads, thereby improving transportation, safety, and the overall standard of living. Additionally, the project strengthen relationships among the Company and stakeholders.

The company provided road repair equipment along with 350 bags of Tipco Premix as the primary material for road maintenance. Additionally, the technical team demonstrated the repair process and provided guidance to enhance students' understanding.







### Economic Benefit Indicators:

- Strengthen the image of being a leader in asphalt business innovation
- Enhancing the capability to develop and innovate the asphalt product



### Social and Environmental Benefit Indicators:

- 58 university participants gained hands-on experience on asphalt knowledge
- Fostering the social responsibility awareness for a university student



### The 2<sup>nd</sup> volunteer for Junior civil engineer club, Department of civil engineer, Faculty of Engineering, Naresuan University.

The project aims to repair the school building and damaged walkways at Banmaethoen School, Mae Sin Subdistrict, Si Satchanalai District, Sukhothai Province. The company supports this initiative, working alongside 58 members from the Junior Civil Engineering Club at Naresuan University. In addition to the road and building repairs, the project integrates practical work knowledge for participants, creating a meaningful impact for all stakeholders



### Economic Benefit Indicators:

- Strengthen the image of being a leader in asphalt business innovation
- Enhancing the capability to develop and innovate the asphalt product



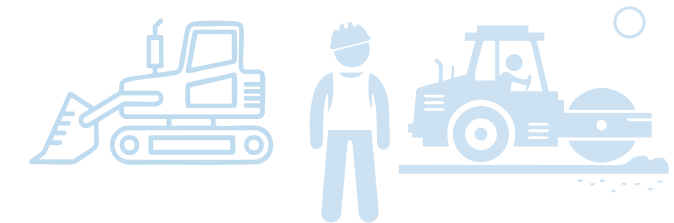
### Social and Environmental Benefit Indicators:

- 70 university participants gained hands-on experience on asphalt knowledge
- Fostering the social responsibility awareness for a university student



### Improving the Entrance of the Faculty of Engineering, Naresuan University

Naresuan University, a leading institution in northern Thailand develop students' expertise in various engineering fields, such as material science, chemistry, and civil engineering. The university has established a Civil Engineering (CE) Testing Center to support students in material testing for educational purposes. The company contributed to this initiative by providing guidance on the use of asphalt products and ready-mixed asphalt concrete. This collaboration stimulated the practical application of these materials in road repairs and improvements to the entrance of the Faculty of Engineering, thereby enhancing safety, reducing accident risks, and improving the standard of living.







### Economic Benefit Indicators:

- Strengthen the image of being Good Corporate Citizens



### Social and Environmental Benefit Indicators:

- Average satisfaction rate of 95.50%
- Relief difficulty for over 250 households

## Flood Volunteer Initiative

### Phitsanulok

In October 2024, Ban Wang Kum Subdistrict, Bang Rakam District, Phitsanulok Province, experienced flooding due to its location in a low-lying area. The area faces uncertainty during the flood season, making it the first to be affected, which caused recurring flooding problems and resulted in significant damage to farmers.

As the company is located in the area, it collaborated with government agencies and customers in Phitsanulok to donate drinking water and survival bags to over 250 households affected by the second wave of flooding. The project aims to alleviate the difficulties faced by victims and foster stronger relationships within the community, in line with the company's commitment to social responsibility and sustainable development.



### Economic Benefit Indicators:

- Strengthen the image of being Good Corporate Citizens



### Social and Environmental Benefit Indicators:

- Average satisfaction rate of 94.00%
- Relief difficulty for over 300 households

## Chiangmai

The Flood Victim Relief Initiative is part of the Company's CSR efforts, aligned with its sustainability framework to support communities.

In October 2024, Chiang Mai Province experienced severe flooding due to continuous heavy rainfall, causing the Ping River to overflow into urban areas effected significantly impacting local communities. In response, the Company, in collaboration with the customers, provided essential relief supplies, including water and survival bags, to over 300 affected households.

This was the most severe flooding in Chiang Mai in 30 years. Through this initiative, the Company contributed to alleviating the hardships faced by affected communities, reinforcing its commitment to social responsibility and sustainable development.



## The Group's CSR Projects

The Group has been continuously conducting social activities in accordance with its sustainability strategy, taking into account the importance of all stakeholders, including coexisting with communities and society. This is done through the concept of "Conducting business sustainably with social responsibility, building strong communities in economic, social, and environmental dimensions."



### Asphalt Product Knowledge Sharing Project

This project aims to develop young leaders in the road construction industry by providing students with direct learning opportunities about asphalt products, technical product processes, product quality inspection procedures, Distribution system, and OHS systems . It offers in-depth study of the complete asphalt production technology, which is beneficial for students in designing and constructing asphalt pavements in the future. Eleven projects were conducted with a participants from the Faculty of Civil Engineering, Chulalongkorn University, Logistic and supply chain management, Surat Thani Vocational college, Department of civil and environmental engineering, Mahidol University, Occupational Health & Safety Mae Fah Luang University, De La Salle University, Philippine, King Mongkut's Institute of Technology Ladkrabang, Faculty of Civil engineer and Medicine, Naresuan University, Occupational health and safety Walailak University.



### The Integrated Bueng Takhreng Development Project

This project aims to create an ecosystem and conserve, and restore water sources. The project has been designed as an integrated tourism and learning center.



### The Bang Krasop Forest Ecological Learning Center Project

This project aims to bring academic and research cooperation to industrial and educational applications, leading to technological excellence and landscape design.



### The "Patching Potholes" project: Temporarily road surface maintenance with Tipco Premix.

To enhance safety for road users and provide various public benefits. The Group initiated this project by repairing road surfaces and fixing potholes that could cause accidents, aiming to reduce the occurrence of accidents.



### The "Road Safety for Children" Project: To promote safe road usage among students.

Its purpose is to educate youth about road safety and traffic laws, as well as to enhance their experience of using roads safely while traveling with their parents or by themselves. This was carried out through various games that promote memorization and understanding.



### The Hands 2 Heart : CPR for Life Project "With great cares.... from all of us Tipco Asphalt"

It purpose to educate community about basic life-saving techniques, including the use of automated external defibrillators (AEDs), in accordance the heart association of Thailand standard.



# CYBER SECURITY

## Material Topic

## Cyber Security

Policy:  
IT Security Policy



### Management Approach

Cyber security is a crucial issue that business organizations should not overlook, as the leakage of critical data can have severe consequences on business operations. The Group is highly aware of the importance of this matter.

The Group committed to the compressive and transparent development of its Information Security Management System (ISMS) in accordance with the ISO/IEC 27001 standard. The Group ensures systematic management in this area, focusing on maintaining the security of data from the storage and processing stages to its utilization.

Recognizing the importance of personal data, the Group pledges that such data will be securely stored within the Group's information systems and will only

be used for purposes authorized by the data owners. The data owners retain the right to exercise their rights regarding their personal data at all times.

This transparent operation, coupled with an international standard management system and an emphasis on personal data protection, instills confidence in all stakeholders that their data will be securely protected.

In 2024, the Group obtained certification for the international standard on information security management requirements, ISO/IEC 27001, from an external certification body, the British Standards Institution (BSI). Moreover, additional security measures and IT equipment have been implemented to enhance the Group operational efficiency.

### Goals in 2024

- Zero cyber threat incidents
- Zero complaints regarding data insecurity
- IT service availability at 99%

### Goals for 2025

- Achieve the IT Security Roadmap plan
- Enhance adaptability to cope with situations related to new threats (Cyber Resilience)

### Key Result in 2024

- Zero incidents of cyber threats or compliant regarding data insecurity
- IT service availability at 99.96%
- Campaign on cyber threat awareness, and Cybersecurity Awareness Training & test with the average score of 95 out of 100 on the Group assessment
- The Group continuously improves its cybersecurity measures by consulting with cybersecurity professionals, including conducting vulnerability assessments and penetration tests, to enhance overall cybersecurity standards.
- Establish the IT depolvement project such as Host to Host Bank Interface, Enhancement system in marine business (DNV-Interface), Low-cod/ No-code Project with Power App Product

## IT Knowledge Enhancement on Employees

In the digital era, the Group recognizes the need for rapid application development to meet both current and future business demands. This includes leveraging enterprise architecture for data connectivity to analyze trends and identify opportunities for organizational growth. As a result, the Company has launched an IT Knowledge Enhancement Program

for employees, focusing on hands-on training with the Power Platform, covering Low-Code/No-Code development, workflow automation, and generative AI technologies. The program aims to equip participants with practical skills that can be applied within the organization.



## Enhancing Security Against Information Network Threats and Personal Data Breaches

At present, the impact of cyber threats is continually increasing. As a result, organizational data is constantly at risk of ransomware or breach. The Group recognizes the importance of data security and has developed a comprehensive long-term strategy for information security.

The IT Security Roadmap has been meticulously crafted, encompassing various aspects of development, including advanced threat prevention, access management, endpoint control, critical data protection, and overall security management. In 2024, the Group further strengthened its cybersecurity framework, achieving ISO/IEC 27001:2022 certification from the British Standards Institution (BSI), in line with international standards. The Group remains committed to continuously advancing IT security management across its data centers and IT systems to proactively mitigate future IT-related risks.

In 2024, The Group has implemented an Extended Detection and Response (XDR) tool to automatically prevent, detect, and respond to cyber threats across IT equipment, email, applications, and the

organization's IT network. This process reduces the workload for the IT team by leveraging AI for data analysis and integration. Additionally, the Group utilizes the SIEM & SOAR platform as a security analysis center, collecting trusted data to detect cyber threats in real-time and enabling immediate automated responses. The combination of these tools significantly enhances the Group's cybersecurity, effectively mitigating cyber threats.

Moreover, a Penetration Testing on the IT system was conducted by certified Ethical Hackers to simulate potential cyber threats targeting the Group's IT systems. The test assessed vulnerabilities in the network, applications, and the overall IT framework. Subsequently, a vulnerability assessment was performed to identify, classify, and prioritize system weaknesses. Corrective measures were then implemented to address these vulnerabilities. With a strong commitment to efficiently protecting data, the Group can instill confidence in all stakeholders regarding its governance and sustainable business practices.





## Technology and Operational Process Development

### 1. The implementation of Host to Host (H2H) system or Bank interface to enhance efficiency

The implementation of the H2H system or Bank Interface enhances operational efficiency across the Group by establishing a direct connection to the banking system. This eliminates the need for internet banking or manual document handling, reducing processing time and minimizing the risk of errors.

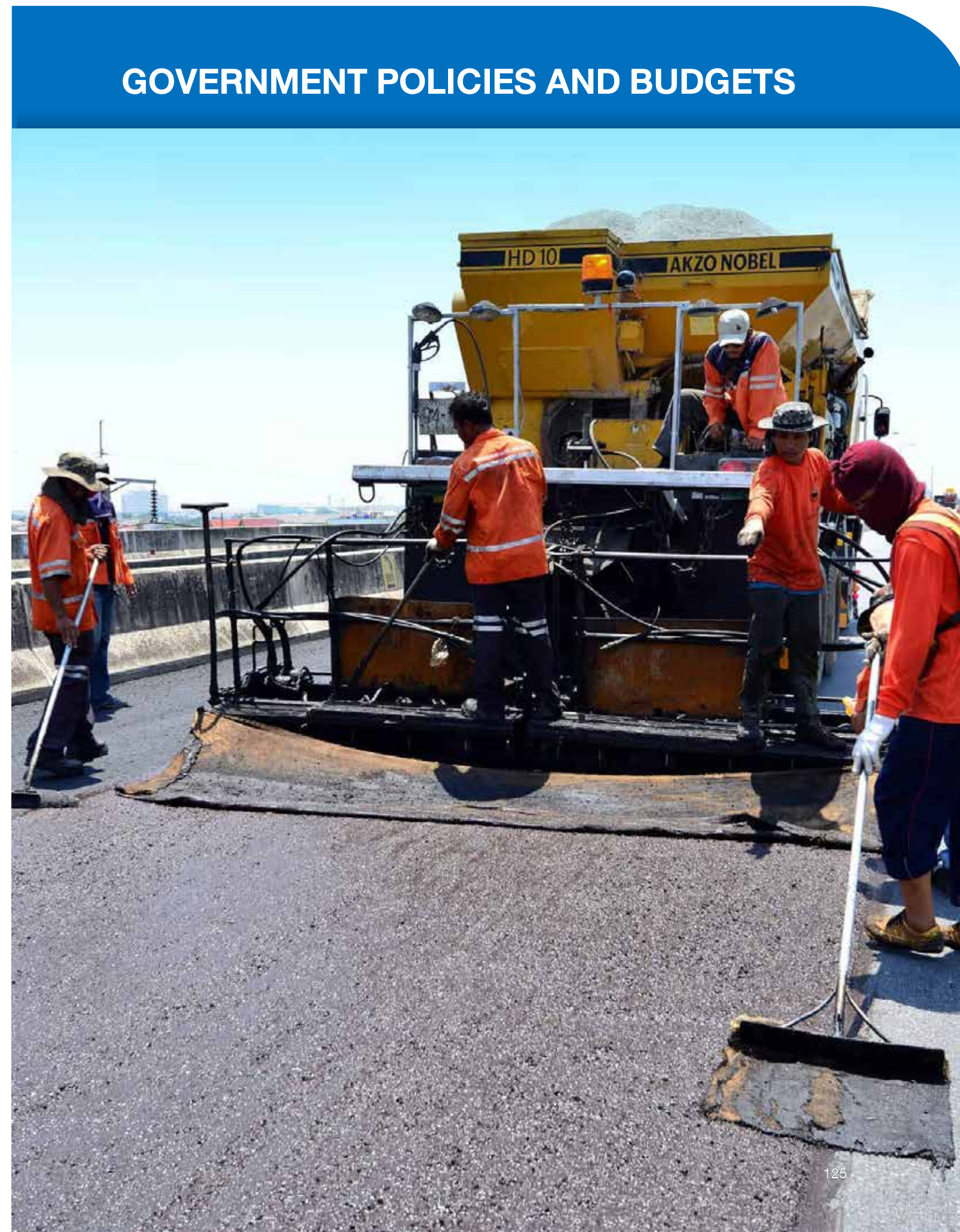
The H2H system enables the Group to conduct international immediate transactions for payments of goods and services while also receipt of customer payments. Transaction data is automatically transferred from the ERP system to the bank, where it undergoes verification and approval. Once processed, the bank sends confirmation data back, ensuring real-time account reconciliation. Additionally, the H2H system or Bank Interface helps reduce

transaction fees and eliminate unnecessary procedures, ultimately improving the Group's overall operational efficiency.

### 2. Continuous improvement on internal operation system

The Group has continuously enhanced the integration system between the DNV Ship Management System in the maritime business and the Enterprise Resource Planning (ERP) system to improve data accuracy, operational efficiency, and real-time data exchange. Additionally, improvements have been made to the purchase order, goods receipt, and invoice payment systems to further enhance the effectiveness of maritime operations

## GOVERNMENT POLICIES AND BUDGETS





## Material Topic

# Government Policies and Budgets

## Management Approach

Sustainable and environmentally friendly infrastructure development is one of the United Nations' Sustainable Development Goals, which the Thai government places great importance on. As a leading asphalt manufacturer in the country, the Group continuous and timely delivery of products to contractors according to their needs is considered a key priority

The Group is committed to being a part of supporting this policy through accurate analysis and estimation of asphalt demand. Since 2023, we developed a construction project data analysis system using Robot Improvement Process technology, which enables accurate and timely assessment of asphalt usage, as well as continuous adjustment of sales plans in accordance with changes in budgets and projects.

## Goals in 2024

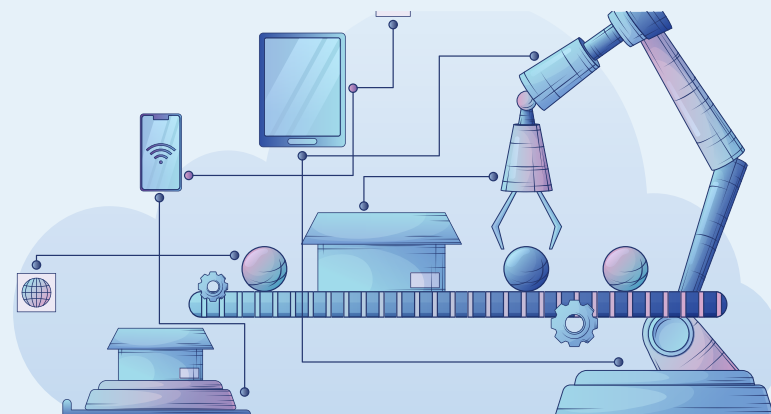
- Analyze construction projects using the Robot Improvement Process to promptly and accurately estimate the demand for asphalt in for road construction projects, including runways, taxiways, parking areas, and service roads for dual-track railways, etc.

## Goals for 2025

- Promptly access information on infrastructure construction budgets and utilize innovation to efficiently analyze data, enabling accurate forecasting of domestic asphalt demand.

## Key Result in 2024

- Fully implement the Robot Improvement Process regarding estimation of asphalt demand.



# Future Trends in Road, Highway and Infrastructure Construction

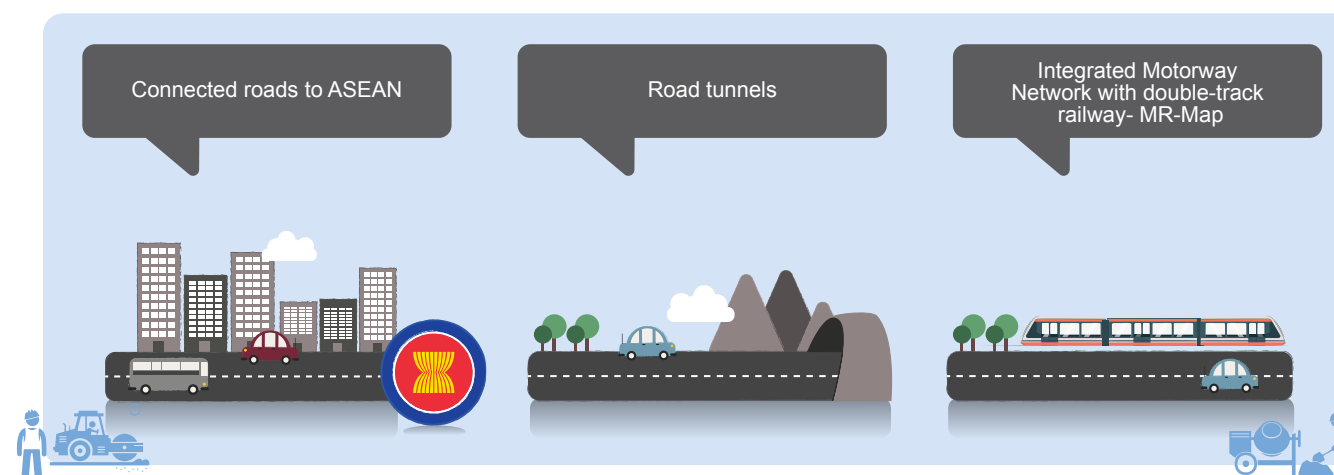


With economic progress and continuous urban expansion, the government places utmost importance on developing transportation infrastructure. In the 2024 fiscal year, over 200 billion baht was allocated for nationwide road construction and maintenance, and this budget is expected to remain high to accommodate urban growth and sustained economic development.

Under policies promoting sustainable development, the government focuses on constructing and repairing roads using environmentally friendly materials and techniques that extend service life and enhance user safety, such as using premium asphalt and recycled old road materials. Moreover, the Department of Highways has revised the 20-Year Motorway Network Development Master Plan (2017- 2036) to align with the 20-Year National Strategy, EEC development plan and SEC, by integrating expressway and rail networks. This aims to support economic development, reduce community impacts and expand prosperity to new areas.

Future road construction trends will emphasize innovations enhancing road safety while considering environmental impacts and sustainable natural resource usage, such as selecting alternative construction materials, recycling old road materials. Newly built roads must prioritize quality and efficiency, with longer service lives and be able to withstand challenging weather and high traffic volumes.

These reflect the demand for high-performance road surfacing materials like premium-asphalt, as well as opportunities to develop sustainable construction innovations and new materials. Adopting AI and Big Data for project analysis and planning will enable more efficient and precise project execution. Developing transportation infrastructure is crucial for driving the nation's economic growth and prosperity. With clear policies and thorough long-term planning, Thailand progresses towards a modern, standardized, safe and eco-friendly road network, bringing sustainable development and maximum benefits to the nation in the long run..





# VALUE FOR THE FUTURE

“Be ready for change”



## MATERIAL TOPICS

- Retaining Potential Employee & Employee Management
- Training and Education

## Material Topic

# Retaining Potential Employee & Employee Management

HCM  
Statement



## Management Approach

Vision of the Group in human capital management is that employees have career growth and happiness in their personal lives. The Group believes that employee engagement with the organization affects business success, growth, and sustainability of organization.

We apply the employee engagement survey as a useful channel of communication, from which we can analyze to identify needs for improvement. It provides insights we can use to develop and support employees with high potential. So they are well-equipped with necessary capabilities and skills.

In 2024, the Group has published the Human Capital Management Statement on the Company

website. This statement outlines the fundamental principles that enable an alignment between the human capital management and the Group's strategic initiative -- Sustainable Organization, with highest priority on encouraging innovative, eco-efficient and safety mindset.

We then design our Human Capital Management activities to respond to these priorities, based on the core value, starting from Talent Attraction, hiring, Employee's competency review, and all development interventions. This strategy enables us to attract and retain talents, who share the same values while offering transparency and fair treatment to all stakeholders.

## Goals in 2024

- Maintain workforce readiness with employee turnover rate not exceeding 10%
- 100% employees return to work after parental leave
- Maintain an employee engagement level at least 75%

## Goals for 2025

- To have a sufficient number of capable and talented workforce to consistently perform and drive organizational growth.
- To manage and promote employee engagement so employees are flexible and could efficiently drive achievement of Vision and Mission.

## Key Performance in 2024

- The employee turnover rate in 2024 still reflects the Group's workforce readiness. Statistics in Thailand show that the asphalt and road construction businesses had a voluntary turnover rate of 5.72% and 11.58% respectively. Average at 8.67%, lower than the 10% target rate and the 14% rate in labor markets of related industry.
- 100% of employees who took parental leave returned to work.
- The Group schedules to conduct employee engagement survey every two years. In 2023, the engagement results were satisfactory in both the asphalt and road construction businesses, with an overall average of 77.5%, with 86.57% participation rate.



## Promoting Quality of Work Life and Employee Engagement

The Group continuously places importance on enhancing the quality of life of its employees, despite the fact that the overall average score of 77.50% at the end of 2023 Employee Engagement Survey exceeded the target of 75.00%.

From the insight of survey, we continue the well-being campaign for employees' physical and mental health. This is because the factor of "wages and compensation", which was one of three low-score factors in 2017 survey, have improved just slightly to be in the middle-score group in 2023's. At the same time, the macro economic view of overall household debt problem watched over by the Bank of Thailand states that this is the important issue among Thai people.

Per the personal financial management, we conducted the "Happy Money Series" project Season 2 to provide knowledge and advice to employees on personal financial management, including savings, investment, household debt management, and individual debt planning. This is a continuing season, by an expert recommended by the Stock Exchange of Thailand, and government units. The following key projects in 2024 included:

### The "Happy Money Series Season 2" through online channel in Thailand, divided into three sub-courses:

1. Planning and Setting personal financial target (55 participants)
  2. Selecting the right investment funds for financial freedom (44 participants)
  3. Saving and Investment (37 participants)
- Regarding physical health, the Group continues



to promote the health of working-age employees. Apart from allocation of flexible work arrangements, leave days based on family needs, and medical insurance supports, we promotes awareness on physical health such as sports facilities, on-line sessions by professionals such as health talk, and on-site session such as Stretching Friday.

In terms of mental health, the Group realizes that good mental health is linked to personal financial management. This includes a capability to sufficiency against cost of living, effective debt management, and savings for the future, all of which affect employees' mental well-being. We also introduce series of mental health activities such as Mindful session, and MayWe application – developed as depression detection artificial intelligence.



### 2nd Cheer to Retirement

The Retirement Preparation Program was a workshop to help employees design quality of life after retirement. It was held on October 3-4, 2024, in Nakhon Pathom province. There were 23 employees who were retiring in 2023 participated out of a total of 47 eligible retirees.



These plans reflect the Group's genuine commitment to developing employees' quality of life in both physical and mental dimensions by promoting health care, creating flexibility at work, and providing knowledge and consultation on personal financial management. This leads to creating happiness, satisfaction, and engagement with the organization, which will result in more efficient and sustainable employee performance in the future.

## Performance Evaluation

Employees are the key driving force behind an organization's success. Continuously focus on employee development is crucial for organizations aiming for sustainable growth. This process should be integrated into the performance management system to effectively link organizational goals with personnel development.

### Employee Development Approach:

1. Assess employees' competencies and potential to identify strengths, areas for improvement, as well as each employee's interests and self-development goals.
2. Create individual development plans that align with the organization's objectives and employees' needs.
3. Provide training courses and learning opportunities both on and off-site, such as workshops, coaching, job rotation, and self-learning.
4. Foster an environment conducive to learning and exchanging experiences among employees.
5. Regularly monitor and evaluate the progress of employee development.





## Integration of the Principle of Equality into the Performance Management System

The key foundation is to instill confidence in employees regarding the fairness of the system, or merit-based. It means the assessment based on performance and behaviors that aligns with organizational core values, without discrimination from other factors. The Group, therefore, uses a performance evaluation system with the same processes and criteria both domestically and internationally, consisting of:

### Performance Assessment Process:

1. Setting performance plan at the beginning of the year
2. Reviewing goals and monitoring performance every quarter, where employees and supervisors engage in discussions, exchange opinions, and provide mutual advice.
3. Year-end assessment through self-assessment and supervisor assessment, with every employee's performance being evaluated at least once a year.

### Annual Performance Assessment Standard:

- Performance Grading includes 5 levels, ranging from "Outstanding" (performance exceeding expectations), driving team/department improvement to "Need Improvement" (performance not meeting targets due to work deficiencies).
- The assessment process starts from self-assessment, supervisor assessment, and approval from higher-level supervisors
- Reliability of the assessment comes from comparing the result among each own job levels to ensure transparency and fairness.

The assessment of performance aims to create consistency, transparency, and fairness between employees and supervisors based on management by objectives. The assessment results are compared to confirm consistent criteria throughout the organization as follows:

1. Operational-level employees: Comparing within own's department
2. Supervisory-level employees: Comparison within the division
3. Managerial-level employees: Managers' use comparison within the division, while directors' use the Company-wide comparison.

Continuous investment in employee development shall lead to the organization's capability improvement with knowledgeable, capable, and enthusiastic employees who could adapt well to various changes, leading to competitive advantages and sustainable growth for the organization in the long run.

From this practice, it was found that in 2024, the annual assessment results of employees with common factors were benchmarked for the equality of evaluation criteria and comparative principles. A total 100% of employees were receiving assessment under this system at all 3 levels.

The management, including the highest-ranking supervisors in each division, used the assessment to consider salary increment and annual bonus allocation, according to the scoring criteria. The Group with higher assessment scores received higher proportions of salary adjustments and annual bonuses compared to the group with lower scores. No abnormalities or complaints were found regarding unfair performance management, and the Group was able to retain 100% of the targeted employees in the Succession Pipeline.



## Promote Equality and Non-Discrimination

Treating employees with equity and fairness is at the heart of modern human capital management. The Group recognizes the value of diversity and non-discrimination at every stage of the employment cycle, from recruitment, selection, evaluation, compensation, career advancement opportunities, to people development.

Under the Recruitment Policy and Procedure, which aligns with the Group's Human Rights Policy, we do not discriminate against any individual based on differences in race, color, religion, gender, age, or other status in all stages of recruitment and selection. We use a systematic process, considering only qualifications that match the job requirements.

Once quality talents are recruited into the organization, we evaluate their performance and potential according to the Job Competency Profile, which specifies the knowledge, skills, and attributes necessary for each job group. The evaluation process involves careful consideration by multiple levels of supervisors to ensure transparency and fairness in promotion, job advancement, and career progression.

Promoting equality within the organization is not only the right thing to do but also a key factor in attracting and retaining talented employees. We regularly generate recruitment reports and monitor results to analyze and improve the process's efficiency, while considering the return on investment in recruitment activities.

### Freedom of Association/<sup>1</sup>

Proportion of Employees Representative in Negotiation	2021	2022	2023	2024
Number of employees representing the Welfare Committee and Safety Committee	87	82	81	97
Percentage of total employees	15.24 (571)	15.83 (518)	16.30 (497)	19.68 (493)

Note : <sup>1</sup> Data for domestic asphalt production business and head office only, references from Welfare committee under the Labour Protection Act B.E. 2541 and OHS Committee



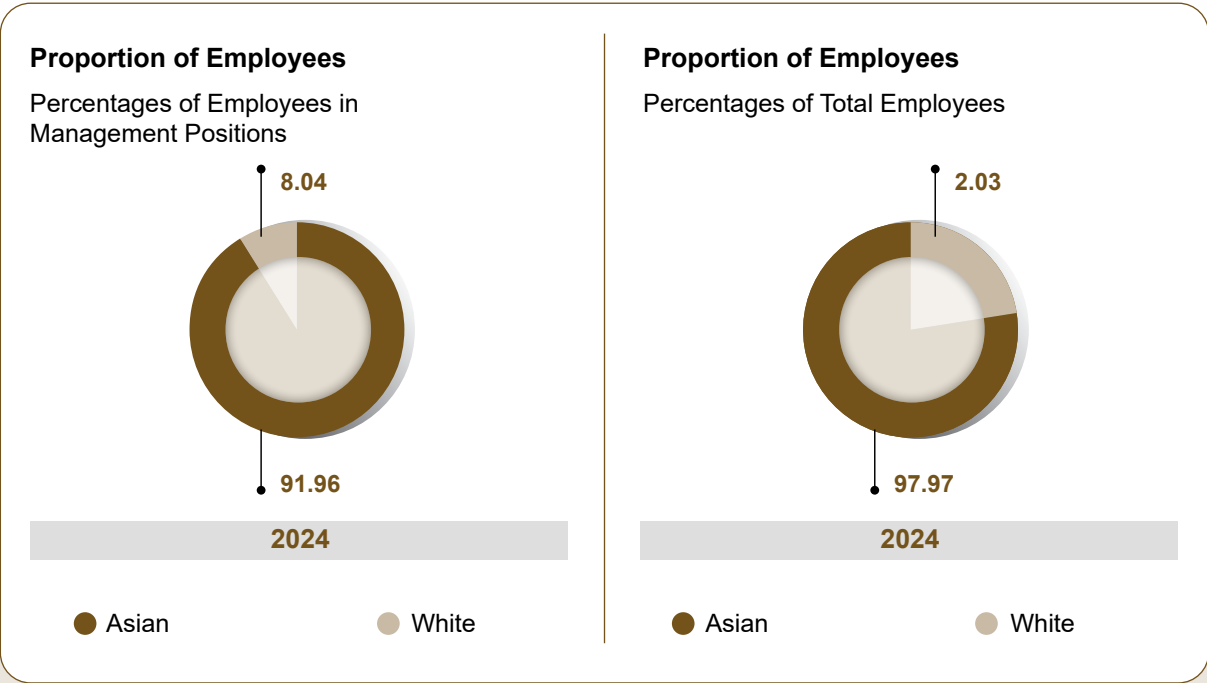


Diversity Metrics<sup>1/</sup>

	2021	2022	2023	2024
Percentage of female employees compared to total employees	32.02	23.83	28.31	21.78
Percentage of female in all management positions including junior, middle and senior management (compared to total management positions)	37.83	33.00	29.73	27.86
Percentage of female in junior management positions, e.g. first level of management (compared to total junior management positions)	48.57	36.60	34.48	28.33
Percentage of female in senior management positions, e.g. two levels below CEO or equivalent (compared to total senior management positions)	25.00	16.70	26.32	29.03
Percentage of women in revenue generating management roles, e.g. sales (compared to total management positions in these roles, excluding support functions like HR, IT, Legal, etc.)	18.52	15.38	10.71	12.31
Percentage of women in STEM roles (compared to total STEM positions)	24.14	25.77	21.43	11.06

Note : <sup>1/</sup> In 2021-2023, Data indicate for domestic asphalt production business and head office only, In 2024, the data are available for the Group : Asphalt production and Construction business in Thailand.

Employees Breakdown by Nationality



TRAINING AND EDUCATION





## Material Topic

# Training and Education

HCM  
Statement



## Management Approach

To harness the necessary expertise, the Group's learning and development directives, all employees will have access to training and other career development opportunities that align with their experience and capabilities. Continuous learning is ingrained in the Group's culture.

Every employee, regardless of their level, recognizes the imperative of consistently enhancing their knowledge and skills. Hence, a strong commitment to learning is an uncompromising prerequisite for employment with the Group."

Various types of training programs (e.g., classroom, e-learning, on-the-job, etc.) are tailored to the specific needs of each operating company, making the most of the local resources within the Group.

Training programs should, to the greatest extent possible, prioritize action learning while minimizing traditional lecture-style teaching. Utilizing e-learning programs as a complement tools or replacement for formal training should be optimized. These resources should be accessible at the shop floor level to broaden training accessibility. It falls upon each manager to evaluate the progress attained as a result of training programs.

## Goals in 2024

- 24 hours of technical and management training per person per year
- Training hours of environment for employees shall be 5 hours per person per year at minimum
- Retain successors of all critical positions (Succession Planning Target)
- Develop high-potential employees to be ready for promotion to management level

## Goals for 2025

- Each employee participates in at least one innovation project per year.
- Identified successors for all targeted positions



## Key Performance in 2024

- The average number of technical and management training hours was 31.14 hours per person per year.
- The number of environmental training hours for employees was 2.34 hours per person per year.
- The average number of training hours for all categories in asphalt business in Thailand was 45.79 hours per person per year.
- The average number of training hours for all categories in asphalt business in Thailand and construction was 35.43 hours per person per years
- The Group was able to retain successors for all critical positions (Succession Planning Target), achieving a 100% retention rate.
- 90% of high-potential employees were ready for promotion to management levels.
- The focus was on developing 4 skill sets that will help respond to and cope with rapid changes in the current situation: Leading (both self and others), critical thinking, communication, and collaboration & building relationships.





## High-Potential Talent Development Roadmap for 2024

The Group places great importance on systematic and continuous personnel development, with a development process that covers several stages, as follows:

1. **Competency Review:** Starting with identifying the organization's strategic needs, reviewing roles and skills crucial for future success, and then assessing the capabilities and potential of individual employees.
2. **Career Planning:** Assisting employees in setting long-term career goals, analyzing their strengths, weaknesses, and limitations, as well as exploring options for changing to other career paths.
3. **Succession Planning:** Developing Individual Development Plans (IDP), evaluating desires, qualifications, and suitability for various positions to prepare personnel for key roles.

Systematic talent development will enhance employee potential, increase morale and retention of valuable employee, prepare for future changes, improve work efficiency and productivity, and foster a culture of continuous learning and self-development within the organization. Companies should identify the needs of each employee, provide diverse development approaches, offer close guidance and support, regularly monitor outcomes, and cultivate a learning culture to ensure successful talent development that meets the objectives.

The performance results in 2024 showed that the Group was able to retain successors for all critical positions (Succession Planning Target) as planned, and 90% of high-potential employees were ready for promotion to management positions.

### Human Capital Development Flow



## 2024 Innovation Accelerator Program

The Group has started the project as the "Inno X Camp" – a series of workshop & Coaching to enable project-based Design Thinking with 10 sessions from March - May 2024. The goal is to cultivate innovation culture and enhance employees' capability.

Under Inno X Camp, 42 Employees across functions nominated by head of functions has participated and categorized into 6 groups. They have received project assignments from the management with the advice from 10 internal mentors, 6 external mentors, and coaching experience. We expected that 2-3 Cross-function potential projects to be commercialized by 2025.

From the Inno X Camp, the selected participants have been entering to the "Innovation Accelerator Program". This is designed as a tool to drive innovation development according to the organization's strategy. Contribution to the Business :

- A channel to motivate and promote ideas that could generate benefits and values to the organization, into a practical use and drive change in the business
- A guideline to elevate innovation development per the employee's and organizational capability
- A presentation of different types of innovation : Process Innovation, Product Innovation with diverse application, Service Innovation as fully equipped to customer's need, and Business Model Innovation that creates advantage and opportunity in the market.

Accelerator Program : Achievement measurement. The development program has set a target by a number of innovation project, of which the budget to execute is approved by the organization. It needs to be at least 1 project commercialized and generated benefit to the organization in terms of IRR / ROI / Cost Saving,





## Uplifting Organizational through a Learning Culture of “Total Productive Maintenance (TPM) Project”

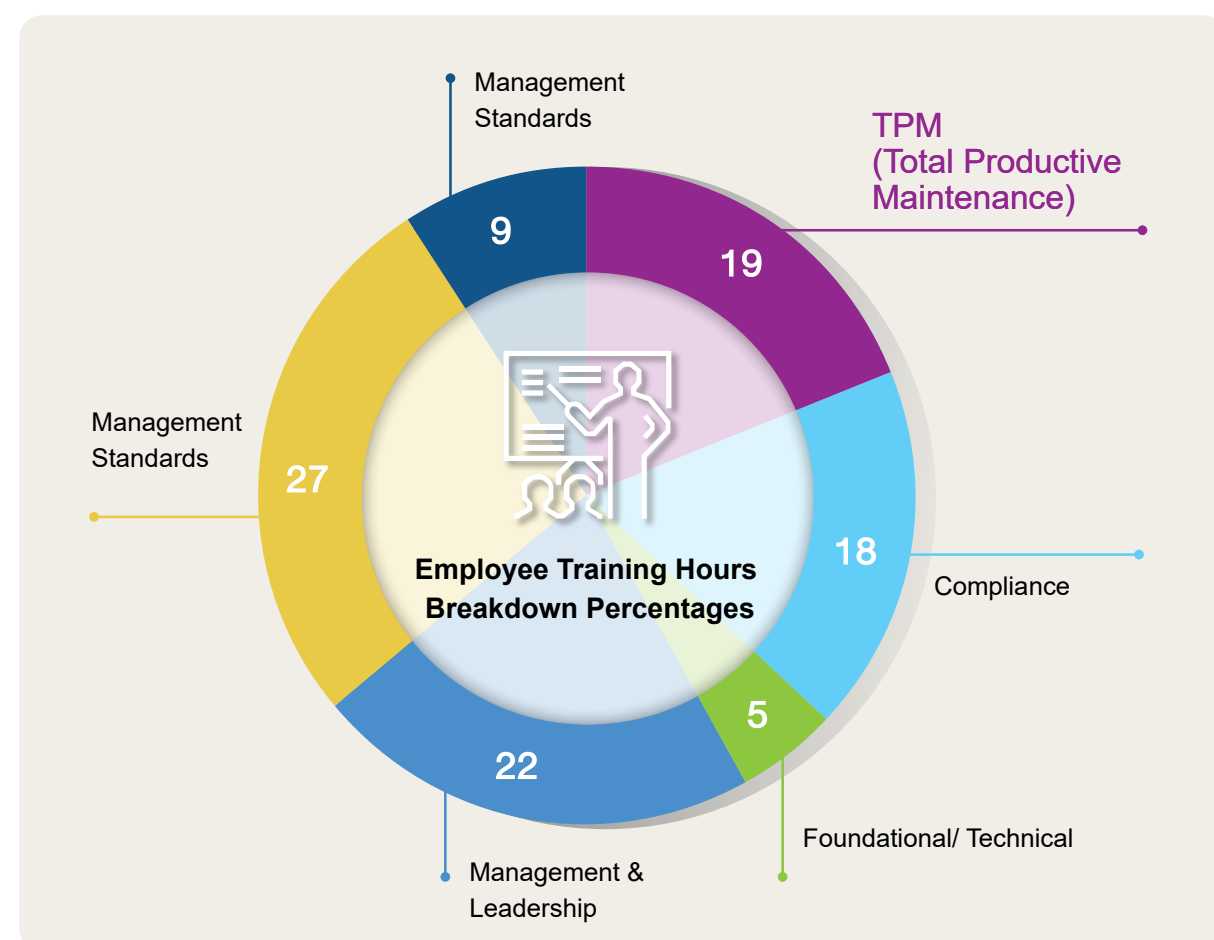
In today's rapidly changing business world, developing the potential of personnel and creating a work environment that promotes learning are crucial factors in maintaining a competitive edge. The TPM project is considered a strategy that helps organizations achieve these goals efficiently.

TPM is a concept of total productive maintenance that involves everyone's participation. It consists of three main pillars: Autonomous Maintenance, Planned Maintenance, and Kaizen (continuous improvement). These pillars focus on enabling operational employees to develop skills according

to their level of responsibility and learn together in groups. One interesting activity of TPM is "TPM Happy Workplace," a day organized to promote the exchange of experiences between different departments within the organization through the sharing of knowledge and best practices. This creates an atmosphere of collaborative learning and happy work.

In 2024, TPM training ranked among the top three categories in terms of the proportion of total employee training hours.

### Employee Training Hours breakdown 2024



In 2024, the results from the implementation of the TPM (Total Productive Maintenance) principles were remarkably successful. Through 73 focus improvement projects, production costs were reduced by an impressive 7.64 million baht. Additionally, 1,140 Kaizen (continuous improvement) suggestions were recorded, aimed at enhancing work efficiency and minimizing equipment and machinery breakdowns.

On August 9, 2024, the Group, Nakhon Ratchasima, Surat Thani, and Phitsanulok plants received awards at the Thailand Kaizen Awards 2024. The event, organized by Technology Promotion Association (Thailand-Japan), took place at BITEC Bangna from August 6-9, 2024. The competition featured 7 categories of Kaizen projects, with 141 companies submitting 417 project entries. Of these, 114 projects made it to the final round for presentation at BITEC.

This year, the Group submitted 8 projects in the Kaizen Suggestion Systems (KSS) category, all focused on process improvement with minimal equipment costs or budget.

Out of 32 projects in the KSS final round, 3 were from our Group, and all of them won awards:

- **“Spring-Powered Drum Handling Cart”** project from Nakhon Ratchasima plant received the Golden Award,
- **“Emergency Kit for Trucks”** project from Surat Thani plant received the Silver Award, and
- **“Easy Fit: No More Screwing Around”** project from Phitsanulok plant received the Bronze Award

These 3 awards reaffirm the Group's commitment to encouraging and supporting employees in innovating and improving work processes for greater efficiency and effectiveness. This dedication will elevate the organization's performance in the future.





## Cultivate the Awareness of Sustainability

The Group has embedded the ESG (Economic-Social-Governance) DNA into business for everyone in the organization in line with one of the sustainability strategies - Value for the Future. In this regards, the Group participated in “ESG DNA” project, the education program providing sustainability knowledge for employees at all levels. initiated by the Stock Exchange of Thailand (SET) to mainly listed firms, it aims to educate employees to understand ESG principles and embedded ESG DNA into their works. The ESG DNA program requires the employees of the listed companies to complete the 2 mandatory E-learning courses on ESG 101(Basic sustainability knowledge) and P01 (Basic corporate sustainability) within one year period.

The Group has asked 519 employees in asphalt business in Thailand, construction and marine business to participate in the ESG DNA project




through 3 basic courses; 1) ESG101 2) P01 and 3) CFO01(Business and GHG Emission Reduction) to support the target of reducing Greenhouse Gas emissions in scope 1 and 2.


In 2024, a total 519 employees, representing 100% of the participants passed the test all such 3 basic knowledge courses.



## Employee Performance Index

	Unit	2021			2022			2023			2024			GRI Standard
		Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total	
<b>Number of All Employees</b>	<b>Persons</b>	318	1,054		464	1,672		438	1,592		423	1,519		2-7
• by Age Group < 30 years	Persons	51	150		83	242		73	233		57	213		
• by Age Group 30 - 50 years	Persons	223	721	1,372	310	1,056	2,136	288	981	2,030	291	945	1,942	
• by Age Group > 50 years	Persons	44	183		71	374		77	378		75	361		
<b>Number of Employees with Disability<sup>1</sup></b>	<b>Persons</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>1</b>	405-2
<b>Number of Promoting Occupations for People with Disability<sup>2</sup></b>	<b>Persons</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>7</b>	
<b>Gender Pay Indicator (Female to Male)</b>														405-2
<b>Ratio of Average Base Salary of Female to Male<sup>3</sup></b>	<b>Female to Male</b>	<b>1.12 : 1.00</b>			<b>1.22 : 1.00</b>			<b>1.23 : 1.00</b>			<b>1.21 : 1.00</b>			
• Top Management Level Employee <sup>3</sup>	Female to Male	NA			NA			NA			NA			
• Medium Management Level Employee <sup>3</sup>	Female to Male	0.83 : 1.00			0.87 : 1.00			0.95 : 1.00			1.03 : 1.00			
• Supervisor Level Employee <sup>3</sup>	Female to Male	0.97 : 1.00			0.98 : 1.00			0.97 : 1.00			0.98 : 1.00			
• Operational Level Employee <sup>3</sup>	Female to Male	1.03 : 1.00			0.98 : 1.00			0.91 : 1.00			0.90 : 1.00			
<b>Employee Training and Development</b>														
<b>Amount spent on employee training and development<sup>2</sup></b>	<b>Million THB</b>	<b>1.06</b>			<b>6.18</b>			<b>6.47</b>			<b>6.80</b>			
• Average amount spent per FTE on training and development. <sup>2</sup>	THB/ Person	1,776			5,337			6,156			9,494			
<b>Average hours of training<sup>4</sup></b>	<b>Hours/ Person/ Year</b>	<b>25.20</b>			<b>46.00</b>			<b>38.71</b>			<b>35.43</b>			
• by Employee Level (Management Level: Other Level) <sup>4</sup>	%	NA	NA	NA	NA	NA	NA	NA	NA	NA	15:85			
• by Gender (Female : Male)/4	%	NA	NA	NA	NA	NA	NA	NA	NA	NA	35:65			
• by Age Group (< 30 years : 30 - 50 years : >50 years) <sup>4</sup>	%	NA	NA	NA	NA	NA	NA	NA	NA	NA	9:65:26			
<b>New Employee Hires</b>														401-1a
<b>Total Number of New Employee Hires</b>	<b>Persons</b>	<b>8</b>	<b>40</b>	<b>48</b>	<b>34</b>	<b>151</b>	<b>185</b>	<b>35</b>	<b>273</b>	<b>308</b>	<b>46</b>	<b>174</b>	<b>220</b>	
• Percentage of Total Employees	%	NA			NA			1.72	13.45	15.17	2.37	8.96	11.33	
• by Employee Level (Management Level: Other Level)	%	NA			NA			NA			11 : 89			
• by Age Group (< 30 years : 30 - 50 years : >50 years)	%	NA			NA			NA			42 : 52 : 6			
<b>Open positions filled by internal candidates (internal hires) of Total New Employees Hires</b>	<b>%</b>	<b>NA</b>			<b>5.60</b>			<b>NA</b>			<b>18.18</b>			



	Unit	2021			2022			2023			2024			GRI Standard
		Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total	
Parental Leave														401-3
Number of Employees Taken Parental Leave <sup>2</sup>	Persons	4	8	12	6	19	25	12	9	21	7	13	20	
Number of Employees Returned to Work After Parental Leave <sup>2</sup>	Persons	4	8	12	6	19	25	12	9	21	7	13	20	
Employee Turnover														401-1b
Number of Voluntary Employee Turnover	Persons	26	101	127	63	210	273	53	159	212	32	131	163	
• Percentage of Total Employees	%	1.90	7.36	9.26	2.95	9.83	12.78	2.61	7.83	10.44	1.65	6.75	8.39	
• by Employee Level (Management Level: Other Level)	%	3 : 97			5 : 95			8 : 92			8 : 92			
• by Age Group (< 30 years : 30 - 50 years : >50 years)	%	31 : 64 : 5			37 : 56 : 7			26 : 66 : 8			27 : 61 : 12			
Total Number of Employee Turnover	Persons	39	151	190	75	304	379	78	241	319	58	232	290	
• Percentage of Total Employees	%	2.84	11.01	13.85	3.51	14.23	17.74	3.84	11.87	15.71	2.99	11.95	14.93	
• by Employee Level (Management Level: Other Level)	%	7 : 93			6 : 94			10 : 90			8 : 92			
• by Age Group (< 30 years : 30 - 50 years : >50 years)	%	26 : 58 : 16			34 : 50 : 16			25 : 58 : 17			21 : 51 : 28			

Notes:

NA (Not Available) No data collected

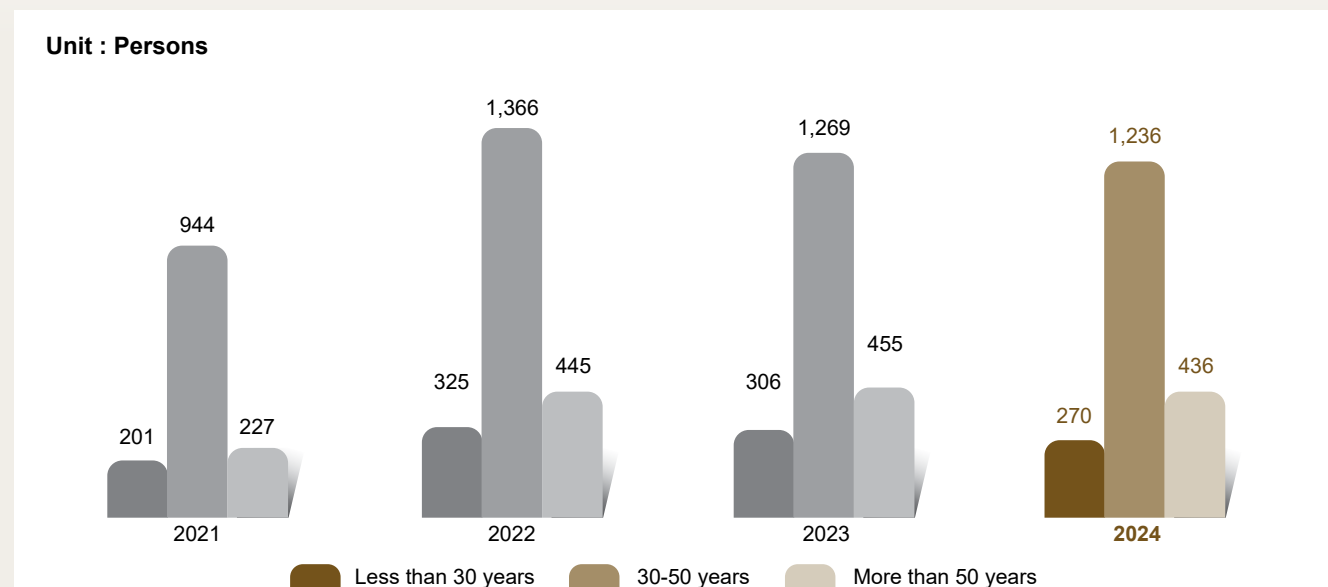
/1 Asphalt business in Thailand only

/2 Asphalt and construction businesses in Thailand only

/3 Asphalt and construction businesses in Thailand excluded foreign locations and product transportation truck drivers

/4 In 2021 - 2023, Data available for asphalt business Thailand only. The construction data available from 2024 onwards

### Total Number of Employees Breakdown by Age Group



## Subsidiaries included in Sustainability Report 2024

Business /Company	Shareholding Proportion <sup>1</sup>	Environment Performance					Safety Performance
		GHG Emission	Pollution Emission	Energy	Water	Waste	OHS
Asphalt Business - Domestic							
Tipco Asphalt Public Company Limited	100	/	/	/	/	/	/
Raycol Asphalt Co.,Ltd.	99.99	/	/	/	/	/	/
Thai Bitumen Co.,Ltd.	99.99	/	/	/	/	/	/
Ravana 1020 Co.,Ltd.	99.98						
Indrachit Holding Co., Ltd.	(All hold by Ravana)						
Refienary Business							
Kemaman Oil Corporation Sdn Bhd (“KOC”)	100						/
Kemaman Bitumen Company Sdn Bhd (“KBC”)	100						/
KBC Trading Sdn Bhd	30						/
	(Hold by the Group 10% and 20% by KOC)						
Marine Business							
Tipco Maritime Co., Ltd.	99.99						/
Tasco Shipping Co., Ltd.	99.99						/
Alpha Maritime Co., Ltd.	99.99						/
Bitumen Maritime Co., Ltd.	99.99						/
AD Shipping Pte. Ltd.	100						/
Pacific Bitumen Shipping Pte. Ltd.	100						/
Reta Link Pte. Ltd.	100						/

Business /Company	Shareholding Proportion <sup>1</sup>	Environment Performance					Safety Perform- ance
		GHG Emission	Pollution Emission	Energy	Water	Waste	OHS
Construction Business							
Thai Slurry Seal Co., Ltd.	99.99						/
Thanomwongse Service Co., Ltd.	99.99 (All by Thai Slurry Seal )						/
Asphalt Business - Internation							
Tipco Asphalt (Cambodia) Co., Ltd	100						/
Highway Resources Pte. Ltd. (“HR”)	100						
Highway Resources Trading Pte. Ltd.	100 (All by HR)						
Asphalt Distribution Co., Ltd.	100 (All by HR)						/
Tasco International (Hong Kong) Ltd. (“TIHK”)	100						
Tipco Asphalt (Xinhui) Co., Ltd.	100						/
Guangzhou Tipco Asphalt Trading Co., Ltd.	100						/
Langfang Tongtai Road Material Co., Ltd.	51						/
PT Asphalt Bangun Sarana (“ABS”)	99.99						/
PT Saranaraya Reka Cipta	99.89 (Holding 99.90% by ABS)						/
Tipco Asphalt Lao Co., Ltd.	75						/

<sup>1</sup> the shareholding structure according to 56-1 one report 2024

## ASSURANCE STATEMENT

Independent Assurance Statement No. VQ2025/019

validation/verification

GRI Standards and ISO 14016

Independent Assurance Statement

Relating to Tipco Asphalt Public Company Limited's sustainability report for the calendar year 2024

This assurance statement has been prepared for Tipco Asphalt Public Company Limited in accordance with terms of engagement.

Terms of Engagement

Tipco Asphalt Public Company Limited (hereafter referred to as "TRSCO") has commissioned to Management System Certification Institute (Thailand), Foundation for Industrial Development (hereafter referred to as "MASC") to provide a limited level of assurance on its sustainability report for the calendar year 2024 (hereafter referred to as "the Report") against the assurance criteria, the GRI Sustainability Reporting Standards (GRI Standards) and ISO 14016:2020, and at the materiality of the professional judgment of the verifier. MASC's procedure is based on current best practice and assurance criteria.

Responsibility

TRSCO's responsibility is for the preparation and presentation of the data and information within the Report, and ensuring that the selected specific standard disclosures are prepared and presented in accordance with the criteria. This responsibility also includes the internal controls relevant to the preparation of the Report that is free from material misstatement whether due to fraud or error.

MASC is a professional validation and verification body (VVB). MASC's responsibility is for providing a third party opinion at limited level of assurance in respect of the selected specific standard disclosures to be included in the Report. We conduct our verification in accordance with standard and ethical. We plan and perform the verification to obtain a limited level of assurance in accordance with our contract with TRSCO. Ultimately, the Report has been approved by, and remained the responsibility of TRSCO.

Objective and Scope of Assurance

The objective is to provide an interested party with a greater confidence regarding data and information for the selected specific standard disclosures contained in the Report. The scope of assurance is covered the operations and activities of Head office and 5 factories located in Thailand: Tipco Asphalt Public Company Limited (Phrapadaeng Plant, Phitsanulok Plant, Nakhonratchasima Plant), Raycol Asphalt Company Limited (Rayong Plant) and Thai Bitumen Company Limited (Thathong Plant), in the period 1 January 2024 to 31 December 2024.

- Confirming that the Report is in accordance with GRI STANDARDS 2021
- Evaluating the accuracy and reliability of data and information for the selected specific standard disclosures listed below:

GRI 302: Energy 2016

- Disclosure 302-1 Energy consumption within the organization
- Disclosure 302-3 Energy intensity

GRI 303: Water and Effluents 2018

- Disclosure 303-3 Water withdrawal
- Disclosure 303-4 Water discharge
- Disclosure 303-5 Water consumption

GRI 305: Emissions 2016

- Disclosure 305-1 Direct (Scope 1) GHG emissions
- Disclosure 305-2 Energy indirect (Scope 2) GHG emissions
- Disclosure 305-4 GHG emissions intensity
- Disclosure 305-7 Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions

GRI 306: Effluents and Waste 2016

- Disclosure 306-3 Significant spills

GRI 306: Waste 2020

- Disclosure 306-3 Waste generated
- Disclosure 306-4 Waste diverted from disposal
- Disclosure 306-5 Waste directed to disposal

GRI 403: Occupational Health and Safety 2018

- Disclosure 403-8 Workers covered by an occupational health and safety management system
- Disclosure 403-9 Work-related injuries
- Disclosure 403-10 Work-related ill health

Management System Certification Institute (Thailand), Foundation for Industrial Development





Independent Assurance Statement No. W2025/019

validation/verification

GRI Standards and ISO 14016

### Assurance Criteria

- GRI STANDARDS 2021
- ISO14016:2020 Environmental management — Guidelines on the assurance of environmental reports.

### Level of Assurance and Materiality

The conclusion expressed in this assurance statement has been formed on the basis of a limited level of assurance, at the materiality threshold of 5% for quantitative data and information, and at the materiality of the professional judgment of the verifier for qualitative data and information.

### MASCI's procedure

Providing a limited level of assurance in respect of the selected specific standard disclosures included in the Report, is carried out in accordance with MASCI's procedure, consists of interviewing, collecting data and information, and collecting other evidence as follows:

- Interview the management and related employees both at the organizational level and at the operational level.
- Assessment on design and implementation of data management system and methods used to identify the source of data, collection and computation the data and information presented in the Report.
- Assessment on guidelines and procedures used to identify stakeholders and their expectations, material issues, including the policies and operating guidelines for sustainability.
- On site assessment on operations and activities of Head office and 2 factories located in Thailand : Tipco Asphalt Public Company Limited (Phrapadaeng Plant) and Thai Bitumen Company Limited (Thathong Plant)
- Remote assessment on operations and activities of 3 factories located in Thailand : Tipco Asphalt Public Company Limited (Phitsanulok Plant, Nakhonratchasima Plant) and Raycol Asphalt Company Limited (Rayong Plant)
- Comparison of data and information with related sources to assess whether the selected specific standard disclosures are prepared and presented in accordance with the criteria by sampling on the basis of risk assessment, consideration on quantitative and qualitative criteria

The procedures for providing a limited level of assurance, which is difference from a reasonable level of assurance in the process of collecting data and information, and collecting other evidence.

### Conclusion

Based on MASCI's procedure nothing has come to the attention that would cause verifiers to believe that the selected specific standard disclosures to be included in the Report has not, in all material respects met the criteria above.

### Competence and Independence

MASCI have complied with the requirements of code of conducts to ensure their independence. MASCI maintains a comprehensive quality management system, policies and procedures regarding compliance with relevant standards, ethical requirements, and applicable legal and regulatory requirements.

This verification statement is subject to the provisions of this legal section:

- Management System Certification Institute (Thailand), Foundation for Industrial Development and their respective officers assumes no responsibility to any person, loss, damage or expense caused by reliance on the information or advice in this document. Unless that person has signed a contract for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.
- This verification statement is only valid when published with the report to which it refers. It may only be reproduced in its entirety.
- In the case of any conflict between the English and Thai language versions of this legal section, the Thai version shall prevail.
- Due to inherent limitations in any internal control, it is possible that fraud, error, or non-compliance with laws and regulations may occur and not be detected. Further, the verification was not designed to detect all weaknesses or errors in internal controls. The verification has not been performed continuously throughout the period and the verification carried out on the relevant internal controls were on a test basis. Any projection of the evaluation of control to future periods is subject to the risk that the processes may become inadequate because of changes in conditions, or that the degree of compliance with them may deteriorate.

Date : 20 May 2025

Signature :

Mr. Teerakul Boonyong  
Vice president,

Sustainability Validation and Verification Department

Signature :

Mr. Teerakul Boonyong  
Technical Reviewer

Signature :

Ms. Atchada Ngeimvijawat  
Lead Verifier



MASCI

# GRI Content Index







GRI Content Index

Statement of use	Tipco Asphalt public company limited has reported in accordance with the GRI Standards for the period 1 January - 31 December 2024.
GRI 1 used	GRI 1: Foundation 2021

GRI STANDARD/ OTHER SOURCE	DISCLOSURE		LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.
				REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
General disclosures							
GRI 2: General Disclosures 2021	2-1	Organizational details	SR 7	A gray cell indicates that reasons for omission are not permitted for the disclosure or that a GRI Sector Standard reference number is not available.			
	2-2	Entities included in the organization's sustainability reporting	SR 145 - 146				
	2-3	Reporting period, frequency and contact point	SR 6, 160 back cover				
	2-4	Restatements of information	SR 6				
	2-5	External assurance	SR 147-148				
	2-6	Activities, value chain and other business relationships	SR 8-9, 20-29				
	2-7	Employees	SR 143-144				
	2-8	Workers who are not employees	SR 85-95				
	2-9	Governance structure and composition	AR 108-109				
	2-10	Nomination and selection of the highest governance body	AR 133				
	2-11	Chair of the highest governance body	AR 116				
	2-12	Role of the highest governance body in overseeing the management of impacts	SR 10				
	2-13	Delegation of responsibility for managing impacts	SR 10				
	2-14	Role of the highest governance body in sustainability reporting	SR 10				
	2-15	Conflicts of interest	AR 142-144				
	2-16	Communication of critical concerns	AR 145-147				
	2-17	Collective knowledge of the highest governance body	AR 134				
	2-18	Evaluation of the performance of the highest governance body	AR 94, 117				
	2-19	Remuneration policies	AR 136-141				
	2-20	Process to determine remuneration	AR 127, 136-141				
	2-21	Annual total compensation ratio					Information unavailable/incomplete
	2-22	Statement on sustainable development strategy	SR 13				
	2-23	Policy commitments	SR 19				
	2-24	Embedding policy commitments	SR 19				
	2-25	Processes to remediate negative impacts	AR 145-146				
	2-26	Mechanisms for seeking advice and raising concerns	AR 145-146				
	2-27	Compliance with laws and regulations	AR 54-55,72,143-146				
	2-28	Membership associations	AR 104				
	2-29	Approach to stakeholder engagement	SR 20 - 29				
	2-30	Collective bargaining agreements	SR 133				

GRI STANDARD/ OTHER SOURCE	DISCLOSURE		LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.
				REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
GRI 3: Material Topics 2021	3-1	Process to determine material topics	SR 30-32				
	3-2	List of material topics	SR 33				
Biodiversity							
GRI 3: Material Topics 2021	3-3	Management of material topics	SR 30-33				
GRI 304: Biodiversity 2016	304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	<a href="https://www.tipcoasphalt.com/sustainability/eco-efficiency-operations/biodiversity/">https://www.tipcoasphalt.com/sustainability/eco-efficiency-operations/biodiversity/</a>				
	304-2	Significant impacts of activities, products and services on biodiversity					
	304-3	Habitats protected or restored					
	304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations					
Economic performance							
GRI 3: Material Topics 2021	3-3	Management of material topics	SR 30-33				
GRI 201: Economic Performance 2016	201-1	Direct economic value generated and distributed	AR 6-7				
	201-2	Financial implications and other risks and opportunities due to climate change	<a href="https://www.tipcoasphalt.com/wp-content/uploads/2025/05/Climate-Related-disclosure_final-16052025.pdf">https://www.tipcoasphalt.com/wp-content/uploads/2025/05/Climate-Related-disclosure_final-16052025.pdf</a> section 2, 3-16				
	201-3	Defined benefit plan obligations and other retirement plans	AR 129				
	201-4	Financial assistance received from government	<a href="https://www.tipcoasphalt.com/sustainability/strong-corporate-governance-transparency/tax-management/">https://www.tipcoasphalt.com/sustainability/strong-corporate-governance-transparency/tax-management/</a>				
Market presence							
GRI 3: Material Topics 2021	3-3	Management of material topics	SR 30-33				
GRI 202: Market Presence 2016	202-1	Ratios of standard entry level wage by gender compared to local minimum wage	Not Aavailable				
	202-2	Proportion of senior management hired from the local community	SR 134				



GRI STANDARD/ OTHER SOURCE		DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.
				REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
Indirect economic impacts							
GRI 3: Material Topics 2021	3-3	Management of material topics	SR 30-33				
GRI 203: Indirect Economic Impacts 2016	203-1	Infrastructure investments and services supported	SR 106				
	203-2	Significant indirect economic impacts	SR 108-117				
Procurement practices							
GRI 3: Material Topics 2021	3-3	Management of material topics	SR 30-33				
GRI 204: Procurement Practices 2016	204-1	Proportion of spending on local suppliers	<a href="https://www.tipcoasphalt.com/sustainability/strong-corporate-governance-transparency/supply-chain-management/">https://www.tipcoasphalt.com/sustainability/strong-corporate-governance-transparency/supply-chain-management/</a>				
Anti-corruption							
GRI 3: Material Topics 2021	3-3	Management of material topics	SR 30-33				
GRI 205: Anti-corruption 2016	205-1	Operations assessed for risks related to corruption	<a href="https://www.tipcoasphalt.com/wp-content/uploads/2022/05/18-Anti-Corruption_Guideline_Manual_th_1637208374.6875.pdf">https://www.tipcoasphalt.com/wp-content/uploads/2022/05/18-Anti-Corruption_Guideline_Manual_th_1637208374.6875.pdf</a>				
	205-2	Communication and training about anti-corruption policies and procedures	AR 144-145				
	205-3	Confirmed incidents of corruption and actions taken	AR 144-145				
Anti-competitive behavior							
GRI 3: Material Topics 2021	3-3	Management of material topics	SR 30-33				
GRI 206: Anti-competitive Behavior 2016	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	AR 90				
Tax							
GRI 3: Material Topics 2021	3-3	Management of material topics	SR 30-33				
GRI 207: Tax 2019	207-1	Approach to tax	<a href="https://www.tipcoasphalt.com/sustainability/strong-corporate-governance-transparency/tax-management/">https://www.tipcoasphalt.com/sustainability/strong-corporate-governance-transparency/tax-management/</a>				
	207-2	Tax governance, control, and risk management					
	207-3	Stakeholder engagement and management of concerns related to tax					
	207-4	Country-by-country reporting					

GRI STANDARD/ OTHER SOURCE		DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.
				REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
Materials							
GRI 3: Material Topics 2021	3-3	Management of material topics	SR 30-33				
GRI 301: Materials 2016	301-1	Materials used by weight or volume	SR 70				
	301-2	Recycled input materials used	SR 70				
	301-3	Reclaimed products and their packaging materials	SR 70				
Energy							
GRI 3: Material Topics 2021	3-3	Management of material topics	SR 30-33				
GRI 302: Energy 2016	302-1	Energy consumption within the organization	SR 50, 70				
	302-2	Energy consumption outside of the organization	SR 70				
	302-3	Energy intensity	SR 50				
	302-4	Reduction of energy consumption	SR 49				
	302-5	Reductions in energy requirements of products and services	SR 49				
Water and effluents							
GRI 3: Material Topics 2021	3-3	Management of material topics	SR 30-33				
GRI 303: Water and Effluents 2018	303-1	Interactions with water as a shared resource	SR 65-67				
	303-2	Management of water discharge-related impacts	SR 60-61				
	303-3	Water withdrawal	SR 66, 74-75				
	303-4	Water discharge	SR 60-61, 65-67				
	303-5	Water consumption	SR 65-66, 74				
Emissions							
GRI 3: Material Topics 2021	3-3	Management of material topics	SR 30-33				
GRI 305: Emissions 2016	305-1	Direct (Scope 1) GHG emissions	SR 43, 46, 69				
	305-2	Energy indirect (Scope 2) GHG emissions	SR 43, 46, 69				
	305-3	Other indirect (Scope 3) GHG emissions			Information unavailable/incomplete		
	305-4	GHG emissions intensity	SR 43, 46, 69				
	305-5	Reduction of GHG emissions	SR Page 80-81				
	305-6	Emissions of ozone-depleting substances (ODS)			Information unavailable/incomplete		
	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	SR 41-42, 68				

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
Spills						
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 30-33				
GRI 306: Effluents and Waste 2016	306-3 Significant spills	SR 63				
Waste						
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 30-33				
GRI 306: Waste 2020	306-1 Waste generation and significant waste-related impacts	SR 55-59, 72-73				
	306-2 Management of significant waste-related impacts	SR 55-59, 72-73				
	306-3 Waste generated	SR 55-59, 72-73				
	306-4 Waste diverted from disposal	SR 55-59, 72-73				
	306-5 Waste directed to disposal	SR 55-59, 72-73				
Supplier environmental assessment						
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 30-33				
GRI 308: Supplier Environmental Assessment 2016	308-1 New suppliers that were screened using environmental criteria	<a href="https://www.tipcoasphalt.com/sustainability/strong-corporate-governance-transparency/supply-chain-management/">https://www.tipcoasphalt.com/sustainability/strong-corporate-governance-transparency/supply-chain-management/</a>				
	308-2 Negative environmental impacts in the supply chain and actions taken					
Employment						
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 30-33				
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	SR 143-144				
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	SR 130-131				
	401-3 Parental leave	SR 143-144				
Labor/management relations						
GRI 3: Material Topics 2021	3-3 Management of material topics	SR 30-33				
GRI 402: Labor/Management Relations 2016	402-1 Minimum notice periods regarding operational changes		a,b	Information unavailable/incomplete	Under Labor Protection Act as minimum	

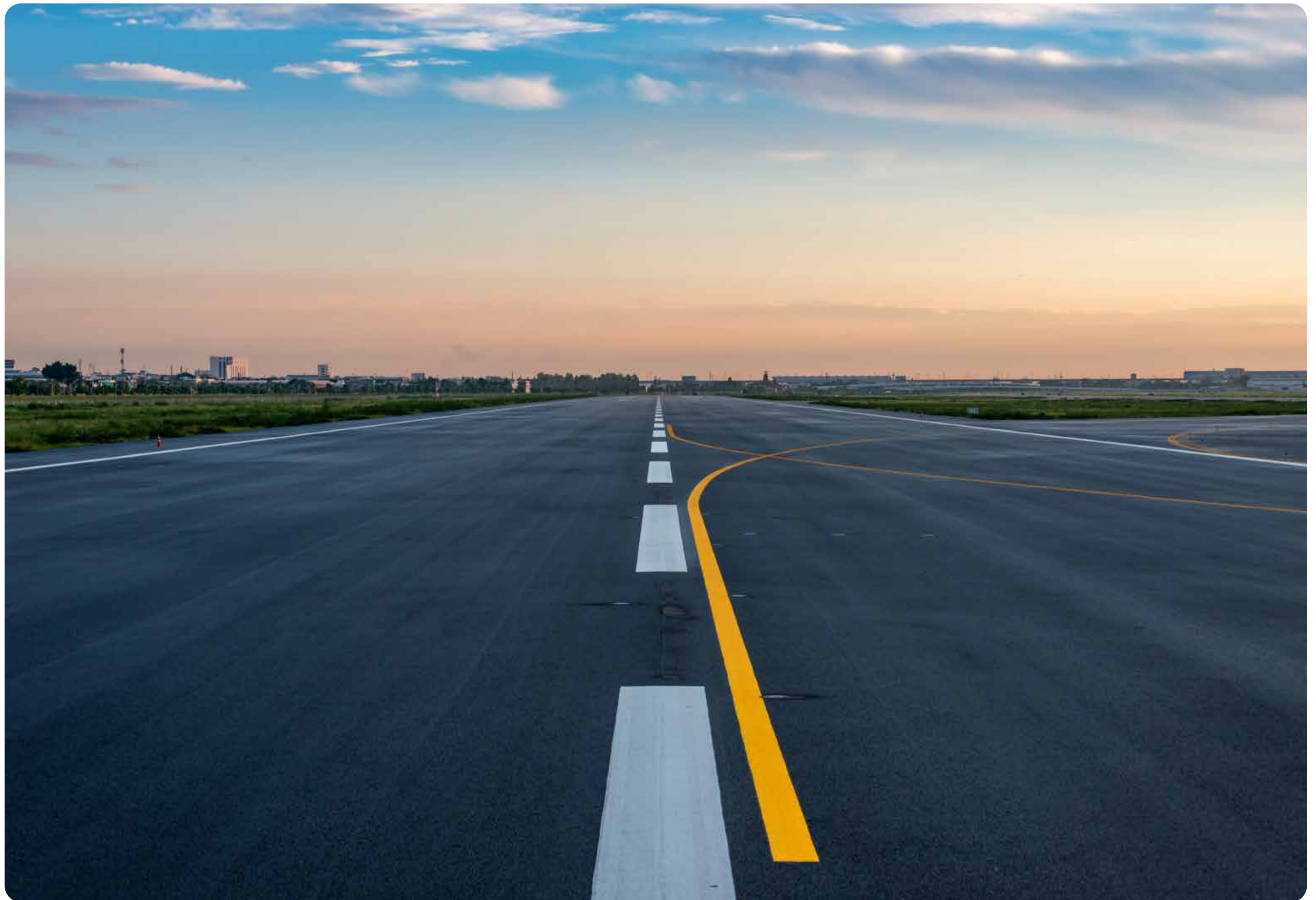
GRI STANDARD/ OTHER SOURCE		DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.
				REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
Occupational health and safety							
GRI 3: Material Topics 2021	3-3	Management of material topics	SR 30-33				
GRI 403: Occupational Health and Safety 2018	403-1	Occupational health and safety management system	SR 18, 76-95				
	403-2	Hazard identification, risk assessment, and incident investigation	SR 79, 87				
	403-3	Occupational health services	SR 78-79, 87				
	403-4	Worker participation, consultation, and communication on occupational health and safety	SR 81-83, 87-89				
	403-5	Worker training on occupational health and safety	SR 102				
	403-6	Promotion of worker health	SR 82-83, 130-131				
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	SR 82-83, 88-89, 130-131				
	403-8	Workers covered by an occupational health and safety management system	SR 90-95				
	403-9	Work-related injuries	SR 90-95				
	403-10	Work-related ill health	SR 90-95				
Training and education							
GRI 3: Material Topics 2021	3-3	Management of material topics	SR 30-33				
GRI 404: Training and Education 2016	404-1	Average hours of training per year per employee	SR 143				
	404-2	Programs for upgrading employee skills and transition assistance programs	SR 138-142				
	404-3	Percentage of employees receiving regular performance and career development reviews	SR 131, 138, 143-144				
Diversity and equal opportunity							
GRI 3: Material Topics 2021	3-3	Management of material topics	SR 30-33				
GRI 405: Diversity and Equal Opportunity 2016	405-1	Diversity of governance bodies and employees	SR 134, 143-144				
	405-2	Ratio of basic salary and remuneration of women to men	SR 134				
Non-discrimination							
GRI 3: Material Topics 2021	3-3	Management of material topics	SR 30-33				
GRI 406: Non-discrimination 2016	406-1	Incidents of discrimination and corrective actions taken	AR 72				



GRI STANDARD/ OTHER SOURCE		DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.
				REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
Freedom of association and collective bargaining							
GRI 3: Material Topics 2021	3-3	Management of material topics	SR 30-33				
GRI 407: Freedom of Association and Collective Bargaining 2016	407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	SR 133				
Child labor							
GRI 3: Material Topics 2021	3-3	Management of material topics	SR 30-33				
GRI 408: Child Labor 2016	408-1	Operations and suppliers at significant risk for incidents of child labor	AR 72				
Forced or compulsory labor							
GRI 3: Material Topics 2021	3-3	Management of material topics	SR 30-33				
GRI 409: Forced or Compulsory Labor 2016	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	AR 56-58, 72				
Security practices							
GRI 3: Material Topics 2021	3-3	Management of material topics	SR 30-33				
GRI 410: Security Practices 2016	410-1	Security personnel trained in human rights policies or procedures			Information unavailable/incomplete	Conduct training in 2025	
Rights of indigenous peoples							
GRI 3: Material Topics 2021	3-3	Management of material topics	SR 30-33				
GRI 411: Rights of Indigenous Peoples 2016	411-1	Incidents of violations involving rights of indigenous peoples	<a href="https://www.tipcoasphalt.com/wp-content/uploads/2024/07/HCM-Statement_July-2024-Signed.pdf">https://www.tipcoasphalt.com/wp-content/uploads/2024/07/HCM-Statement_July-2024-Signed.pdf</a>				
Local communities							
GRI 3: Material Topics 2021	3-3	Management of material topics	SR 30-33				
GRI 413: Local Communities 2016	413-1	Operations with local community engagement, impact assessments, and development programs	SR 107				
	413-2	Operations with significant actual and potential negative impacts on local communities	SR 107				

GRI STANDARD/ OTHER SOURCE		DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.
				REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
Supplier social assessment							
GRI 3: Material Topics 2021	3-3	Management of material topics	SR 30-33				
GRI 414: Supplier Social Assessment 2016	414-1	New suppliers that were screened using social criteria	https://www.tipcoasphalt.com/sustainability/strong-corporate-governance-transparency/supply-chain-management/				
	414-2	Negative social impacts in the supply chain and actions taken					
Public policy							
GRI 3: Material Topics 2021	3-3	Management of material topics	SR 30-33				
GRI 415: Public Policy 2016	415-1	Political contributions	https://www.tipcoasphalt.com/sustainability/strong-corporate-governance-transparency/tax-management/				
Customer health and safety							
GRI 3: Material Topics 2021	3-3	Management of material topics	SR 30-33				
GRI 416: Customer Health and Safety 2016	416-1	Assessment of the health and safety impacts of product and service categories	SR 130-133				
	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	AR 72				
Marketing and labeling							
GRI 3: Material Topics 2021	3-3	Management of material topics	SR 30-33				
GRI 417: Marketing and Labeling 2016	417-1	Requirements for product and service information and labeling	https://www.tipcoasphalt.com/sustainability/strong-corporate-governance-transparency/customer-centric/				
	417-2	Incidents of non-compliance concerning product and service information and labeling					
	417-3	Incidents of non-compliance concerning marketing communications					
Customer privacy							
GRI 3: Material Topics 2021	3-3	Management of material topics	SR 30-33				
GRI 418: Customer Privacy 2016	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	https://www.tipcoasphalt.com/wp-content/uploads/2022/05/17-CorporatePolicyonPersonalDataProtectionTH_1629601418.20313.pdf				

Note :  
AR = Annual Report  
SR = Sustainability Report







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