



ESG FOR SUSTAINABILITY



TPI POLENE PUBLIC COMPANY LIMITED

Sustainability Report 2024



Sustainable Development under ESG Policy

Environmental Social
and Governance (ESG)



Environmental Dimension

“Develop into a Green Industry and adhere to Improving Production Processes, Energy Management and Environmentally Friendly, aiming for a Low-Carbon Society to reach ‘Carbon Neutrality’ by 2043”



Social Dimension

“Respect Human Rights and Fair Treatment towards employees and staffs, Create a Learning Organization Culture and develop the Potential of Employees, Enhance Workplace Health and Safety, Responsible and Balanced Engagement with Communities, Society and Stakeholders



Governance Dimension

“Conduct Business with an Adherence to Good Governance Principles under the Codes of Conduct Flexibility to adapt to New Business Concepts Organization-Wide Risk Management under the Anti-Corruption Policy, Ready to deliver Cost-effectiveness of Innovative Products and Services for the Society and the Environment

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01 Message from Chief Executive Officer [2-22]

A portrait of Mr. Prachai Leophiratana, the Chief Executive Officer. He is a middle-aged man with short dark hair, wearing glasses, a dark suit, a white shirt, and a patterned tie. He is standing in front of a blurred background of green trees and a white building. A small yellow pin is visible on his left lapel.

Mr. Prachai Leophiratana
Chief Executive Officer

**Business Driving Path towards Sustainability
To Achieve the Goal of Carbon Neutrality by 2043**

TPI Polene Public Company Limited annually prepares a sustainability report on key issues related to its business operations, covering environmental, social, and economic dimensions (Environmental, Social, Governance: ESG). This report is developed by the ESG Committee and executives from relevant departments, who receive information, engage in discussions, or maintain direct relationships with stakeholders. They jointly consider and identify the positive and negative impacts, actual and potential, related to operations, products, services, and business relationships. This includes economic, environmental, human, and human rights dimensions, which are assessed based on the expectations of stakeholders throughout the business chain. The assessment follows the principles of due diligence and double materiality perspectives, in accordance with European Union standards and the European Sustainability Reporting Standards (ESRS), to search for and identify material sustainability issues that the Company needs to address. The analysis of financial materiality resulting from economic, social, and environmental factors (Outside-in), developed by the European Financial Reporting Advisory Group (EFRAG), is integrated with other sustainability indicator standards, including:

- Global Reporting Initiative (GRI) Standards 2021
- Sustainable Development Goals: SDGs
- International Financial Reporting Standards S1 and S2 (IFRS S1 and S2)

It adheres to the principles of the Global Reporting Initiative (GRI) and aligns with the United Nations' Sustainable Development Goals (SDGs) framework to create a balance among environmental, social, and economic dimensions.

In 2024, Thailand faced various pressing challenges, including the war in Ukraine and the war in the Middle East, inflation, and rapid increases in policy interest rates by central banks worldwide. Thailand has also raised its policy interest rates since the outbreak of COVID-19 to combat inflation. While the Thai economy continues to grow gradually, geopolitical tensions, such as the war in Ukraine and the tensions between China and Taiwan, have led to supply disruptions and rising energy prices and raw

material costs. Additionally, Thailand's high household debt serves as a warning sign for companies to monitor and carefully assess risk factors, driven by the uncertainty of trade policies in major economies, ultimately impacting trading partners and Thai exports.

The impacts of climate change are becoming increasingly visible and tangible, leading to rising economic and social costs. Under the vision of becoming a leading cement manufacturing company in sustainability innovation, the Company has established the Sustainability Management Framework as a key business goal, which includes the followings:

Mechanisms to Drive Continuous and Sustainable Reduction of Greenhouse Gas Emissions

The Board of Directors and senior management have assessed the risks and mitigation measures from climate change, as well as considered the opportunities that arise. The Company has set a target of carbon neutrality by 2043, which is earlier than the target that Thailand announced after joining the COP26 Conference in 2050.

The Company has a comprehensive strategic plan to reduce direct and indirect greenhouse gas emissions. This plan focuses on developing production technologies that minimize fossil fuel use and increase the proportion of low-carbon raw materials, expanding the use of clean energy, supporting reforestation to restore ecosystems, and improving production efficiency. Additionally, the Company invests in machinery to enhance greenhouse gas reduction, particularly in the cement production process, by using waste as fuel instead of coal.

At the same time, the Company promotes the adoption of electric vehicles (EVs) to enhance green energy usage and support the development of transportation infrastructure both within urban areas and intercity networks. The focus is on transitioning to electric vehicles and electric-powered heavy machinery, such as EV dump trucks, replacing fossil fuel-dependent engines like diesel. This initiative aims to continuously reduce greenhouse gas emissions.

Environmental Restoration Mission: TPI Polene and Industrial Waste Management

In 2024 - 2025, TPI Polene signed a contract with the Department of Industrial Works to transport 7,000 tons of aluminum dross. This slag is generated from the aluminum production process by external companies, as certain substances volatilize into acidic vapors during production. After the major fire on April 22, 2024, illegally dumped and buried industrial waste was exposed amidst the debris. This waste has become a source of contamination, impacting local residents with industrial waste toxicity in the soil, water, and air. The problem is especially severe during the rainy season when the waste evaporates, releasing odors and toxins that affect the community of Ban Nong Pawa, Bang But Sub-district, Ban Khai District, Rayong province.

TPI Polene provided assistance as an environmentally responsible entity by transporting aluminum dross from the area to the Company's cement plant in Kaeng Khoi District, Saraburi Province. The transportation was carried out using 4–5 trailers, each with a capacity of 23 tons per day, totaling 115 tons per day, without any disposal charges. The Company has obtained a Factory Type 101 license from the Department of Industrial Works. If the disposal cost is calculated based on the actual price, it would amount to as much as Baht 10,000 per ton, including transportation costs. The disposal of this type of industrial waste alone would require a total budget of approximately Baht 70 million. This operation reflects TPI Polene's sustainable vision and commitment to managing industrial waste responsibly, in compliance with legal and international standards. It also underscores the Company's dedication to minimizing environmental and community impacts in a sustainable manner. The Company has demonstrated its commitment as an environmentally conscious organization and is ready to contribute to solving the industrial waste problem without seeking profit. Additionally, the disposal of aluminum dross serves as an example of efficient and sustainable operations that reduce toxic emissions and improve the health of local communities. This initiative also supports the proper management of industrial waste in Thailand, promoting long-term sustainability.

Organic Agriculture and Safe Hygiene: A New Choice for Health-Conscious People and Friendly for Environmental

TPI Polene Group is committed to the well-being of Thai society and places importance on organic agriculture and bio-hygiene products (Health care products), which are excellent choices for those who prioritize their health and the environment. These products use raw materials derived from nature or bio-organic sources, are easily degradable, and leave no residues in the environment, as follows:

1. Non-toxic products for plants include organic fertilizers, soil conditioners, and insect repellents, which are made without the use of toxic chemical pesticides. These products use natural extracts to reduce the reliance on chemicals that may cause allergies, irritation, or long-term health harm.
2. Non-toxic products for animals to help reduce the spread of germs. These products contain biological ingredients that can reduce the spread of bacteria, viruses, and fungi, including biological microorganisms and Symbiotics products for livestock and fisheries. They are free of toxic substances and virus-killing agents, making them effective for land and aquatic animals without the need for antibiotics. These products also help reduce greenhouse gases, increase productivity, lower costs for farmers, and contribute to food security and safety for the Thai people.
3. Biological hygiene products (Health care products) help strengthen the immune system and promote good hygiene within communities. These products include probiotic drinks mixed with vitamins (Pro Vita), probiotic calcium and vitamin C supplements, Bio Knox mouthwash which kills microorganisms and bacteria in the mouth, preventing viruses from entering the body, cleaning products, dishwashing liquid, and stain remover. Additionally, there are vegetable washing liquids, liquid bath soap, and hand soap.

The Company's organic agriculture business and healthcare products support sustainable industries, promote businesses that use bio-based raw materials, create jobs for local farmers and producers, and are safe for use. They are suitable for people with allergies, young children, or the elderly, and reduce the risks associated with chemicals that could impact health.

TPI Polene Joining Forces with Society to Create a Sustainable Environment

TPI Polene Group supports social welfare projects by organizing community discussions, community development initiatives, a chemical-free school lunch project at Ban Sap Bon School in Saraburi Province, and providing scholarships to outstanding students, etc. In addition, it has supported various public welfare projects and activities in 2024, totaling approximately Baht 28.44 million, benefiting communities, educational institutions, temples, hospitals, and various government agencies through donations of cement and other construction materials, organic fertilizers, drinking water, and health products to prevent pathogens, etc. It has promoted and supported the conservation of natural resources and the environment with a budget of over Baht 750,000 by planting approximately 9,000 trees over an area of 125 rai through various initiatives. In 2024, a planting project aimed to add 2,000 trees to increase green space at the TPI Cement Factory in Saraburi Province, with the objective of enhancing the factory's green space. Increasing green space is one of the effective ways to reduce carbon dioxide (CO₂) levels and help improve air quality. It also promotes a more balanced ecosystem. This project is a step toward creating environmental sustainability and encouraging the participation of all sectors in caring for natural resources to ensure their continued existence in the future.

I would like to thank shareholders, debenture holders, financial institutions, the Board of Directors, all employees, stakeholders, and related parties for unwavering support, trust, and significant contributions to the success of all its work and activities. All-important operational information has been summarized, compiled, and disclosed in this Sustainability Report. At a time when the world is facing multiple challenges, including pandemics and severe climate change, the Company remains committed to sustainable business development, with a focus on reducing environmental impacts and improving the quality of life for society and the country. We adopt a Transformation and Change Management approach and promote the creation of an organizational culture that upholds a mission for sustainability in every step of our operations. The Company is committed to enhancing the quality of its sustainability report and is open to suggestions for improving information disclosure and promoting sustainable development in collaboration with all stakeholders. The goal is to create a balance between organizational, community, and environmental development to strengthen the organization, society, and the country in the long term.

Sincerely yours,

(Mr. Prachai Leophairatana)
Chief Executive Officer



Business Drive for Sustainability

Key Sustainable Development Performance of TPI Polene in 2024

Economic Dimension



Total Revenue

Baht

37,862

million

Employee wages

and benefits

Baht

6,562

million



Tax expense

Baht

373

million



EBITDA

Baht

8,830

million



Net profit

Baht

2,425

million



Dividend per share

Baht

0.05

Environmental Dimension



Recycled and reused
aggregate scrap

766,505 tons,
accounting for
100%



In 2024, cement plants used
waste fuel to replace coal in
cement production processes

accounting for to **12%**
of total energy



In 2024, TPIPL sourced

9,548,906

cubic meters of external

water, representing a

2.61% decrease
compared to 2023

In 2024, TPIPL reduced greenhouse gas
emissions both directly and indirectly,

of **1.59** million tons. carbon
dioxide equivalent or decreased by
17.96% over 2023

Proportion of recycled water

(From the base year 2023)

TPIPL **1,110,051**

million cubic meters or

a decrease **18.51%** and
46.82%

of total water consumption



Investment projects for reducing
environmental impact

Value at Baht **1,638** million

TPIPL recycled waste
2,876.46 tons
from production process, or
99.70% of total
industrial waste

Investment in EV Mining Trucks and
EV Wheel Loaders to replace
Combustion Engine Vehicles, aiming
to reduce greenhouse gases emissions
and PM 2.5 dust generation



Manufacture of Green Products/
development of hydraulic
mortar production technology
to reduce carbon emissions.

0.2479 million tons CO₂E

Installation of Bag Filter dust collector
to replace Electrostatic Precipitator
(ESP) for enhanced PM 2.5 Filtration
efficiency up to **99.99 %**

Community and Social Dimension



Community and social contributions
Baht **28.44** million

Number of working hours without accidents
Employees **18,683,374** hours
Partners/Contractors **3,596,768** hours

Injury Frequency Rate (IFR) of Employees and Contractors / Business Partners
0.542 / 0.771 per 1 million working hours



Occupational illness and disease rate that require all records
TPIPL **0** cases per 1 million working hours



Work-related fatalities among employees and contractors
TPIPL = **0** cases



Average training hours for employees
TPIPL **26.14** hour/person/year



Turnover rate
TPIPL = **2.53%**



Work Satisfaction and employees' engagement towards the organization
TPIPL **84.05%**



Development Projects for Technological Innovation, and Service
16 projects



Research and Product Development
Project **7** projects

Corporate Governance Dimension



Sales value of low-carbon products
Baht **23,711** million

The product has been certified the label to reduce global warming
total of **21** products

sales value of Biological product
Baht **71.03** million

No complaints of privacy violations ⁽¹⁾

Violation of human rights (Discrimination, Child Labor, Illegal Labor)
TPIPL = **0**

Suppliers acknowledge the code of conduct of business partners
TPIPL **97.5%**

13 major ESG Risk suppliers were assessed, representing **54.82%** of the total order value



Overall customers' satisfaction/ satisfaction with solving problems for TPIPL's customers
87.80% and **95.40%**



Announcement

Issue no. 1/2022

Subject: Principles of employee duties

For success in creating sustainable business growth of the Company, TPI Polene Group adheres to Environmental, Social and Governance (ESG) criteria, by embracing the Bio Circular Green Economy as a sustainable business model under the standards of good corporate governance. In carrying out duties and responsibilities, all employees are required to work under the Four Iddhippada: Basic for Success 4, which consists of the following:

Chanda (ASPIRATION) Intention or purpose or desire or zeal. The need to do and always be willing to do what is assigned and aspires to make it work even better.

Viriya (EFFORT) or energy or will.

Citta (CONCENTRATION) Consciousness or mind or thoughts, concentrate on work.

Vimansa (Planning, Result Checking, Good Governance, Research and Development) Planning, results checking, good governance, research and development.

With a committed heart to create balanced happiness with a better quality of life in a sustainable manner pursuant to FOUR SUBLIME STATES OF MIND, which consist of the following:

MERCY

KINDNESS

SYMPATHETIC JOY

EQUANIMITY

Announced on January 5, 2022

(Prachai Leophairatana)

Chief Executive Officer

Note: This principle of living follows the metaphysical concept of the Four Noble Truths (See more details at <https://www.tpipolene.co.th/en/aboutus-en/employee-handbook>)

Brahma-vihara 4

FOUR SUBLIME STATES OF MIND

Metta	(MERCY)	Love, desire for others to be happy.
Karuna	(KINDNESS)	Desire to get others out of their sufferings
Mudita	(SYMPATHETIC JOY)	Pleasure that comes from delighting in other people's well-being, even if one did not contribute to it.
Upekkha	(EQUANIMITY)	Even-mindedness and serenity, treating everyone impartially.

Iddhipada 4

BASIS FOR SUCCESS 4

Chanda	(ASPIRATION)	To be content and happy in doing good deeds with enthusiasm and strong intention.
Viriya	(EFFORTS)	Diligence, patience, commitment, endurance, willingness to work hard and to never give up; having the courage to tackle any obstacle and having the courage to make changes.
Citta	(CONCENTRATION)	Consciousness of the senses, Subconscious mind and Intellect, is of immense power
Vimamsa	(R&D)	Involves conducting an investigation or discrimination, a plan, a measure and invention of a solution.

The Principles of Iddhipada 4: Path of accomplishment in work, which consists of the following:

Chanda (ASPIRATION)	- Satisfied with the work we're performing
Viriya (EFFORTS)	- Diligence in our work
Citta (CONCENTRATION)	- Taking responsibility for the work done
Vimamsa (R&D)	- Contemplation and use of wisdom to monitor the work

Catvari Aryasatyani (Four Noble Truths)

Heart of Buddhism (Ariyatham to the Cessation or Extinction of Suffering)

The basic doctrine of Buddhism is the noble path leading
to the complete destruction of suffering.

1. Dukkha : Suffering
2. Samudaya: The Cause or Origin of Suffering
3. Nirodha: The Cessation or Extinction of Suffering can be attained by the renouncement or letting go of Tanha
4. Marga: The Path leading to the Cessation or Extinction of Suffering

1. DUKKHA

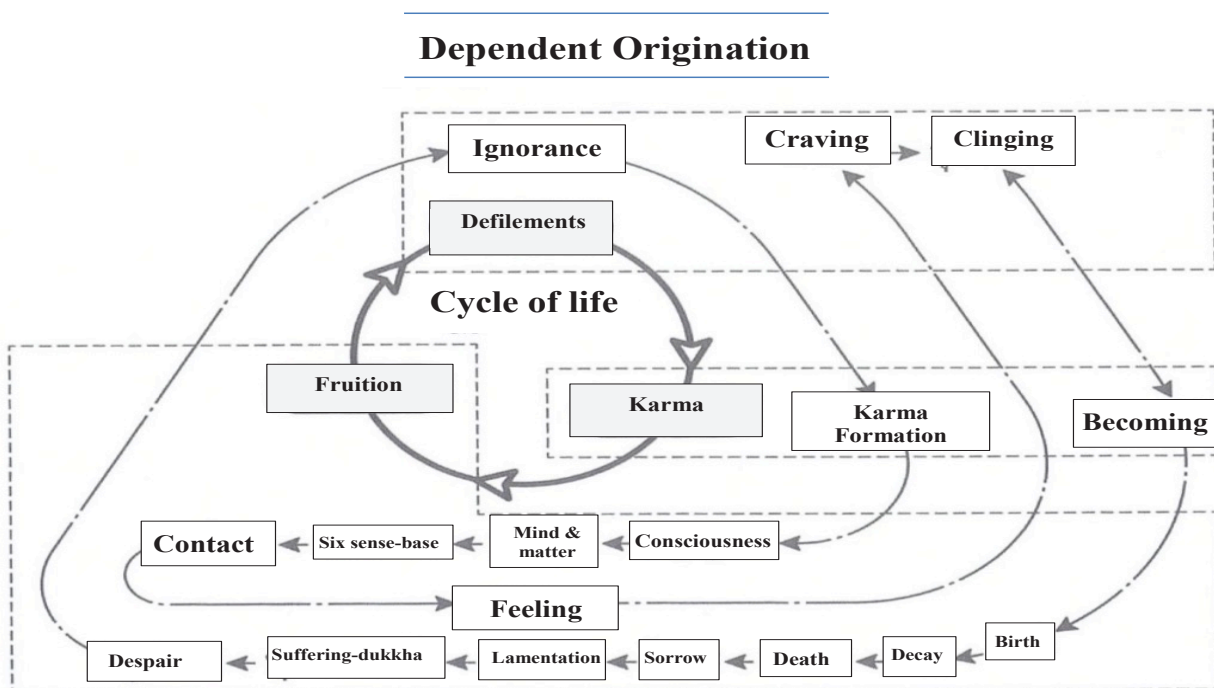
UNSATISFACTION, SUFFERING, PAIN

The word suffering in the heart of Buddhism does not just mean suffering in Thai as it is understood. It also means difficult conditions to endure in the same conditions and clinging to impermanent states and things or stressful conditions.

2. SAMUDAYA

THE ORIGIN OR ARISING OF DUKKHA

Consideration of CAUSE OF SUFFERING



Cause of suffering (or suffering) is defilement or ignorance.

3. Nirodha

(EXTINCTION OF SUFFERING)

is the elimination of defilements, i.e. elimination of defilements with the power to proceed according to the 8-fold path until attaining that path

4. Marga

(THE NOBLE EIGHTFOLD PATHS)

The Dharma that kills the defilements or the ten benefits⁴

The Path leading to the Cessation or Extinction of Suffering

1. Right view
2. Right intention
3. Right speech
4. Right action
5. Right livelihood
6. Right effort
7. Right mindfulness
8. Right concentration

Chants conquering Evil: Panmare Chino Na Tho

Panmare Chino Natou Patto Sampothimuttaman
Chatur Satjung Pakasti Thammajakang Pawattayi
Etena Sajjavajchena Hotu Me Chayamankalang

Devil 5 (What Kills a Person to Die from Goodness)

THE EVIL ONE, THE TEMPER, THE DESTROYER

1. The MARA of Defilement
2. The MARA of Aggregates²
3. The MARA of Karma Formations³
4. The MARA of Deity
5. The MARA of Death

After conquering the five devils,
the Buddha enlightened us with the Four Noble Truths

Note

1. **MARA** (The Destroyer) is something that depletes one from his virtues or noble results or something that consumes virtues or prevents one from attaining good results.
 1. MARA of Defilement is love, greed, anger, delusion, evil spirit.
 2. MARA of Aggregates is something that destroys one's Aggregates, makes him pain, sick, crippled, depriving one of the opportunities to do good deeds.
 3. The MARA of Karma Formations is the thought, emotion, and karma cultivator that prevents one from avoiding the suffering in samsara or rebirth of one in 31 places of existence.
 4. The MARA of Death is death that deprives one of the opportunities to do good deeds.
 5. The MARA of Deity is an evil deity who is powerful and inspires one not to do the good deeds.
2. **Five Khandha** (Five Groups of Existence or Five Aggregates) are the five aggregates of form and abstract that make up the collective units which are ordinarily called animals, persons, beings, he, we, etc. The five components incorporated into life.
 - 1 The corporeality group (rūpa-kkhandha) is the aggregate of form which is the mixture of earth, water, air and fire elements such as hair, skin, bone, and blood.
 - 2 The feeling group (vedanā-kkhandha) is the aggregate of processing feelings such as happiness, suffering, or indifference.
 - 3 The perception group (saññā-kkhandha) is the aggregate that remembers what one received or felt. It is the part that defines or perceives the meaning of what have known (Arrom 6) such as white, green, black, red, etc.
 - 4 The mental-formation group (sankhāra-kkhandha) is the aggregate of thought to identify what you feel and remember whether it good or bad or indifference, neither good nor bad. The mind was led by intention to be good or bad or upyakrit (neither good nor bad) such as kaya-sankhara (physical intent), vajee-sankhara (verbal intent), and mano-sakhara (mind intention).
 - 5 The consciousness-group (viññāna-kkhandha) is the aggregate of cognition or knowing of things through the six senses including eyes, ears, nose, tongue, body, and mind. The Five Aggregates are abbreviated into two groups, namely the abstract and the form (Rupa Khandha).
3. **Apisankhara 3** is the thought, emotion, and karma cultivator, comprising of:
 1. Punyaphisangkara is a thought that enhances good karma (merit).
 2. Apunyaphisangkara is a thought that enhances evil karma (sin).
 3. Anenchaphisangkhan is a thought that is calm, unable to be upset or excited.
4. **Fetter** is the defilement that binds the animals to suffering or defilement that binds the mind to the cycle of defilement, karma, and the result of karma. There are 10 fetters:
 1. Sakkaya-ditthi: One has the view that the five aggregates are self.
 2. Wichikitcha: One has doubts about the virtues of the Three Jewels, namely the Buddha, The Dharma, and the Sangha
 3. Silappatapramas: One adheres to the sacred things or customs by believing in magic which is not Buddhism or adheres to the wrong practices, which is not the aim of Buddhism.
 4. Kamaraka: One has contentment in sensual pleasures or lust.
 5. Vengeance: One adheres with anger.

Udhamphakiyasayojana or the Five Higher Fetters are:

- | | |
|----------------|---|
| 6. Rupa-raka: | One has greed for material existence or attachment to realms of form. |
| 7. Arupa-raka: | One has greed for immaterial existence or attachment to formless or abstract realms. |
| 8. Mana: | One had conceit or pride with the feeling of being better, worse, or equal with others. |
| 9. Uttacca: | One is distracted or restless. |
| 10. Avijja: | One has ignorance of the Four Noble Truths |

Phra Sodaban is the one who puts an end to all of the first three fetters, namely Sakkaya Ditthi, Vicikiccha, and Silabbat Pramas.

Sakathakami is the one who puts an end to all first three fetters, and reduces lust and anger.

Anakami is the one who puts an end to the five lower fetters.

Arahant is the one who puts an end to all 10 fetters.

5. Sankhara is body and mental formations, together with volitional formations and volitional activities.

Sankhara also means “formations” or “that which has been put together” of all including ingredients, decorations, parts of the body, mind, life, spirit, all things that made up. (Volitional Formation is what our brains think. The more we think, the more formations follow like a shadow following our body. What is in the brain will be expressed through words and actions, which is karma. Since our minds are endlessly concerned or embellished, we commit karma endlessly, resulting in us being reborn indefinitely. In the Trinity (Trilak), sankhara is the thing being formed or improvised, which is all the mind and forms.

Paticca-samuppada (the Dependent Origination; conditioned arising) Sankhara 3 is

1. Kayasangkhara: bodily formation, bodily volition
2. Vajisangkharā: verbal formation, verbal volition
3. Manosangkharā: mental formation, mental volition

Sankhara has three qualities known as trilak (three marks of existence as follows):

1. **Anicca:** Impermanence
2. **Dukkha:** State of suffering or being oppressed, state which cannot stand it in its original condition, state that will deteriorate because of being oppressed by Anicca.
3. **Anatta:** No real self, incapable of being in power

The opposite of Sangkhara is Wisangkharā

Wisangkharā is Nirvana, which is eternal. It leads to nicca, sukhā, anatta (dharma).



02 Our Pride Awards in 2024

The awards received both nationally and internationally in 2024 serve as confirmation of the outstanding performance of TPI Polene Public Company Limited (“TPIPL”) in the realms of economy, society, and environment.

National Awards



Sustainability Disclosure Award

TPIPL received the Sustainability Disclosure Award for 2024, the highest-level award, for the third consecutive year. This recognition reflects the Company’s commitment to transparent and comprehensive disclosure of sustainability information, as detailed in the Sustainability Report and Form 56-1 One Report 2023 from the Thaipat Institute.



TPIPL Receiving the Honor Shield as an Organization with Outstanding Social Activities in 2024

TPIPL received the Honor Shield for the “Outstanding Social Activity Organization of the Year 2024” (Business Organization Category) award at the National Social Welfare Day and Thai Volunteer Day 2024 event, organized by the Ministry of Social Development and Human Security.



TPIPL Listed in the ESG 100 Stocks List in 2024

TPIPL has been selected as one of the 920 companies in the ESG100 group for the third consecutive year (2022–2024) in the Real Estate and Construction Group, while TPIPP has been selected for the fourth consecutive year (2018, 2021–2024) in the Resources Group. This recognition reflects the outstanding performance of the TPI Polene Group in terms of Environmental, Social, and Governance (ESG), as assessed in the 2024 evaluation of listed securities by the Thaipat Institute.



SET ESG Ratings : AA

TPIPL has been assessed as “AA Sustainable Stock” in 2024 (SET ESG Ratings: AA) for its ESG business operations, which take into account the environment, society, and corporate governance, ensuring sustainable benefits for all stakeholders.



5-star (“Excellent”) Corporate Governance Rating

TPIPL has continuously developed their corporate governance, earning a 5-star (“Excellent”) corporate governance rating (Excellent CG Scoring) for two consecutive years (2023–2024) in the Corporate Governance Report of Thai Listed Companies (CGR) for 2024, conducted by the Thai Institute of Directors.



TPIPL Receiving the Provincial-level CSR Award for Outstanding Corporate Social Responsibility Promotion in 2024

TPIPL received the CSR Award for 2024 from the Department of Social Development and Welfare, Ministry of Social Development and Human Security, for being an organization with outstanding performance in promoting social responsibility at the provincial level. The award was given based on the Company's success in meeting key selection criteria, including its clear record of promoting CSR both within and outside the organization. These efforts align with the standards of social responsibility guidelines and sustainable development goals (SDGs).



CSR-DIW Continuous Award 2024

TPIPL and TPIPP received a plaque and certificate for their project promoting industrial factories to be responsible for society and communities sustainably, in the CSR-DIW Continuous Award Category for 2024 from the Department of Industrial Works, Ministry of Industry. This marks the 10th consecutive year of receiving the award since 2015 for:

- Cement Plant Line 1, 2, 3 and 4, Mortar Plant 1, 2, 3 and 4 and Lightweight Plant; and the 14th consecutive year of receiving the award since 2010 for: Polymer Plant



TPIPL Receiving an Honorary Plaque from the Plant Genetic Conservation Project Coordination Center.

TPIPL received an Honorary Plaque from the Plant Genetic Conservation Project Coordination Center, initiated by Her Royal Highness Princess Maha Chakri Sirindhorn at Chulalongkorn University, in recognition of the Company's financial support for training in local resource bases for the Plant Genetic Conservation Project.



TPIPL Receiving the Award for the Joint Standard Driving Agency for New Products to Improve the Quality of Thai Construction Materials

TPIPL received the award as the joint agency driving standards for new products to improve the quality of Thai construction materials from the Department of Science Service, Ministry of Higher Education, Science, Research and Innovation. This initiative emphasizes the development of environmentally friendly construction materials that meet the needs of current and future consumers, contributing to the achievement of the Sustainable Development Goals (SDGs). It also aims to establish product standards to support innovative products, ensuring continuous quality and increasing confidence in the quality and safety of the products.



TPIPL Receiving an Honorary Plaque as the "Best Practices BCG Economy Model towards Net Zero 2024"

TPIPL received an Honorary Plaque as the "Best Practices BCG Economy Model towards Net Zero 2024" from the Thailand Greenhouse Gas Management Organization (Public Organization) for creating a strategic plan to drive the BCG Economy Model and Net Zero Roadmap. This includes planning strategic operations, developing CE/BCG projects, and managing and evaluating direct and indirect greenhouse gas (GHG) reduction results, along with the development of low-carbon technologies at both the corporate and supply chain levels.



Green Industry Level 4 (Green Culture) Award 2021-2024

TPIPL received the Green Industry Level 4, or Green Culture Award, which demonstrates the organization's environmental and social responsibility as an integral part of its corporate culture. This award was granted for the cement production lines 1, 2, and 3, the waste quality improvement plant (waste disposal plant), and the power plants TG 1, 2, and 3, respectively, from the Department of Industrial Works, Ministry of Industry.

Green Industry Level 3 : Green System Polymer Plant received the Green Industry Level 3, or Green Culture Award, which demonstrates the organization's environmental and social responsibility as an integral part of its corporate culture, from the Department of Industrial Works, Ministry of Industry.



TPIPL Joining the Energy Conservation Network's Declaration of Intentions in 2024 "Energy Beyond Standards 2024"

TPIPL has joined the declaration of intent for the Energy Conservation Network 2024 "Energy Beyond Standards 2024" to demonstrate its commitment to using energy efficiently, reducing greenhouse gas emissions, and supporting energy conservation within the organization. This aligns with the goal of achieving carbon neutrality by 2050 and net-zero greenhouse gas emissions by 2065, as outlined by the Department of Alternative Energy Development and Energy Efficiency, Ministry of Energy.



Outstanding Company of the Year Award from the One Million Seeds of Goodness in Return to the Country Project 2024

The Award for the Use of Resources Leading to Sustainable Development is a symbol of the promotion and support of those who contribute to the country and society. It recognizes individuals and organizations that give back and benefit the nation, awarded by the Foundation for Thai Society under the "One Million Seeds of Goodness in Return to the Country" project.



Outstanding Organization Leader of the Year Award and Outstanding Creativity and Innovation of the Year Award

Both awards were presented to Mr. Prachai Leopairatana, Chief Executive Officer of TPI Polene Power Public Company Limited, who is a valuable individual with contributions that benefit the public. He has a visionary attitude, serves as a positive role model, and is able to apply his knowledge effectively in practice.



Outstanding Creativity and Innovation Award of the Year

The award from the One Million Seeds of Goodness in Return to the Country Project in 2024, under the category of Production Innovation to Increase Competitiveness, symbolizes the promotion and support of those who perform good deeds in return for the country, benefiting society and the nation. This award is granted by the Foundation for Thai Society as part of the One Million Seeds of Goodness in Return to the Country Project.



Outstanding Service Award from the One Million Seeds of Goodness in Return to the Country Project 2024

The award in the Good Service Category symbolizes the promotion and support of those who perform good deeds, give back to the country, and benefit society. It is granted by the Foundation for Thai Society as part of the One Million Seeds of Goodness in Return to the Country Project.



Goodness of Repaying the Land's Grace Award

The award from the One Million Seeds of Goodness in Return to the Country Project in 2024, in the areas of environment, society, and good governance, symbolizes the promotion and support of those who perform good deeds, give back to the country, and benefit society and the nation. It is granted by the Foundation for Thai Society as part of the One Million Seeds of Goodness in Return to the Country Project.

International Level



TPIPL Being Awarded Certificate of Excellence 2024 AWARDEE 30 Fabulous Companies of the Year

TPIPL received the Certificate of Excellence from The Silicon Review and was ranked among the "Top 30 Companies of the Year" by The Silicon Review, USA, in the Future and Innovation category. TPIPL is transforming industries, improving lives, and paving the way for a greener future in Thailand and abroad.



TPIPL received the Leading Industrial Conglomerate Group Thailand 2024 award

— from World Business Outlook, a print and online magazine providing comprehensive analysis of the financial industry, international business, and the global economy. These prestigious awards are given to organizations with strong business operations, outstanding innovations, and an international reputation by World Business Outlook magazine, Singapore.



TPIPL Receiving Certificate from the Annual List of "World's Best Companies to Work For 2024"

TPIPL received a certificate from the annual list of the "World's Best Companies to Work For 2024," reflecting its commitment to providing a workplace that creates a positive environment and career advancement. This certificate was awarded by World's Leaders magazine.



TPIPL and TPIPP Being Certified with ISO14064-1 (Carbon Footprint Verification or CFV)

On March 23, 2024, TPIPL and TPIPP had been certified for ISO 14064-1 (Carbon Footprint Verification or CFV), a standard outlining principles and organizational requirements for quantifying and reporting greenhouse gas emissions and reductions, including requirements for designing, developing, managing, reporting, and verifying an organization's greenhouse gas emissions and reduction inventory. The certification was awarded by BSI Group (Thailand) Co., Ltd. (BSI: British Standards Institution).



TPIPL Receiving the World's Best Companies to Work for 2024 Award from WORLD'S LEADERS MAGAZINE, APAC

As the Company Group is committed to innovation in both product development and manufacturing processes, in line with the principles of the bio-circular economy and green and environmental, social, and governance (ESG) standards, it reflects our dedication to creating a positive impact on the world.

03 About TPI Polene

Information TPI Polene [2-1]

TPI Polene Public Company Limited, or TPIPL, was incorporated and registered as a limited company under the name “Polene Co., Ltd” on September 24, 1987, by the “Leophairatana” family as the founder, managing the business operation until now, with an initial registered capital of Baht 100,000. The company initially engaged as an intermediary in purchasing PE (Polyethylene) plastic resin from Thai Petrochemical Industry Public Company Limited, “TPI”, which has now changed its name to IRPC Public Company Limited.

On October 24, 1989, Polene Co., Ltd. was renamed TPI Polene Co., Ltd., and later in March 1990, the Company was transferred the LDPE (Low Density Polyethylene) plastic resin and promotional privileges under the Board of Investment. On November 20, 1990, the Company was listed on the Stock Exchange of Thailand and converted into a public company limited on February 17, 1994.

On April 5, 2017, the ordinary shares of TPI Polene Power Public Company Limited (a 70.24% owned-subsidiary Company) were listed on the Stock Exchange of Thailand. TPI Polene Power Public Company Limited is the largest waste-to- fuel power plant business operator in Thailand.

As of December 31, 2024, the Company had a registered capital of Baht 23,560,235,000 (23,560,235,000 shares) and a paid-up capital of Baht 18,935,235,000 (18,935,235,000 shares), at the par value of Baht 1 per share.

TPI Polene Group operates its main business, which can be categorized by four groups of businesses as follows: [2-6]

1. Construction material sector: manufacture and sale of cement, mortar, clinker, ready-mixed concrete, CRT/FCB, lightweight concrete and cement paint.
2. Petrochemical and Chemical sector: manufacture and sale of specialty polymer, EVA Emulsion, EVA Powder, EVA Encapsulant , EVA Interlayer, Film, ammonium nitrate and nitric acid.
3. Energy and Utilities sector: Manufacture and sale of waste-based alternative fuel, a waste heat recovery power plant, a coal-fired power plant, a waste-based -fired power plant, oil and NGV service stations.
4. Agricultural business and others consist of the following:
 - 4.1 Healthcare products such as Bio Knox, Micromknox Solution, mouthwash, vegetable washing liquid, energy drink Pro-150 and Pro Vita, liquid soap, drinking water, dishwashing liquid, grease remover and Biosan.
 - 4.2 Products for plants such as organic fertilizers and soil enhancers.
 - 4.3 Products for animal such as bio-stimulants for livestock and fishery.
 - 4.4 Other businesses such as life insurance business.



Business Overview [2-6]

<https://www.tpipolene.co.th/en/aboutus-en/business>



TPIPL Products [2-6]

<https://www.tpipolene.co.th/en/>

Presently, the Company's head office is located at TPI Tower 26/56, Chantatmai Road, Thungmahamek, Sathorn, Bangkok 10120. The Company's business units and its subsidiaries are located in Thailand. The Company has a marketing network throughout the country and primarily exports clinker products, including cement and ready-mixed mortar, to international markets, with the largest export destinations being Bangladesh and ASEAN countries. [2-6]

The Company primarily exports cement to CLMV countries (ASEAN countries in the Greater Mekong Basin region) by loading it into containers for Pacific Island countries, while fiber cement boards are exported to major markets such as Australia, the Philippines, etc. [2-6]

Additionally, the Company exports fiber cement products and concrete tiles to Australia, New Zealand, the Middle East, South Africa, Asia, and Europe, among others. In 2024, the export volume of construction materials decreased due to the political and economic situation in the CLMV countries. As a result, the Company has expanded its exports to new markets such as the United States, Ghana, India, South Africa, the Middle East, and Malaysia, etc., in order to build on its success and create opportunities for future business growth. In the plastic resin business, the company distributes plastic resins both domestically and internationally. Key export markets include China, India, Southeast Asia, South Asia, Europe, and the Americas. [2-6]

Head Office Address Factories and Affiliates [2-1] [2-6]

Head Office	
26/56 Chan Tat Mai Road, Thungmahamek, Sathorn, Bangkok 10120 Tel. Number: +66 (0) 2213-1039-49, 285-5090-9 Fax Number: +66 (0) 2213-1035, 213-1038 Web Address: http://www.tpipolene.co.th	
Industrial plants	
Cement Plant/ Power Plant/ Mortar Plant/ Lightweight Concrete Plant/ Pyrolysis and MSW Plants 299 Moo 5, Mittraparp Road, Tambol Tubkwang, Amphur Kangkhoy, Saraburi 18260 Tel. Number: + 66 (0) 3633-9111 Fax Number: +66 (0) 3633-9228-30	LDPE/EVA Plant / EVA Emulsion and EVA Powder 999 Moo 5 Sukhumvit Road, Tambol Chuengnoen, Amphur Muang, Rayong 21000 Tel. Number: +66 (0) 3880-3091-9
Concrete Roof Tiles and Fiber Cement Plants 77 Moo 7, within CRT Plant sub-road from Sai Ban Kork Street, Banlardkaopoon and Highway no.1014, Tambol Ban Kang, Amphur Chaloem Phrakiat, Saraburi 1800 Tel. Number: + 66 (0) 3667-0370-5 Fax Number: +66 (0) 3667-0377	Solar Film Plant 49/1 Moo 1, Phichainarong Songkham Road, Tambol Nachong, Amphur Muang Saraburi, Saraburi Tel. Number: + 66 (0) 3673-1724
Ammonium Nitrate and Nitric Acid Plant 140/7 Moo 4, Sukhumvit Road, Tambol Tapong, Amphur Muang, Rayong 21000 Tel. Number: + 66 (0) 3866-4724-7	

Affiliates in which the Company directly holds share of more than 10%

<p>Construction Sector</p> <p>TPI Concrete Co., Ltd.</p> <p>26/56, 5th Floor, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120</p> <p>Tel: (02) 678-5350-74</p> <p>Fax: (02) 678-5375-6</p>	<p>Petrochemical Industry</p> <p>Thai Nitrate Co., Ltd.</p> <p>26/56, 21st Floor, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120</p> <p>Tel: (02) 678-6600</p> <p>Fax: (02) 678-5484</p>
<p>Energy Sector</p> <p>TPI Polene Power Plc.</p> <p>26/56, 8th Floor, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120</p> <p>Tel: (02) 285-5090-9</p> <p>Fax: (02) 213-1035</p>	<p>TPI All Seasons Co., Ltd.</p> <p>26/56, 8th Floor, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120</p> <p>Tel: (02) 285-5090-9</p> <p>Fax: (02) 213-1035</p>
<p>Agriculture Sector</p> <p>TPI Polene Bio Organics Co., Ltd.</p> <p>26/56, G Floor, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120</p> <p>Tel: (02) 285-5090-9</p> <p>Fax: (02) 213-1035</p>	



Affiliates in which the Company directly holds share of more than 10%

Other Industry

Polene Plastic Co., Ltd

26/56, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120

Tel: (02) 213-1039, (02) 285-5090

Fax: (02) 213-1035

TPI Commercial Co., Ltd.

26/56, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120

Tel: (02) 213-1039

Fax: (02)213-1038

TPI Healthcare Co., Ltd.

26/56, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120

Tel: (02) 285-5090-9

Fax: (02) 213-1035

TPI Service Co., Ltd.

26/56, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120

Tel: (02) 285-5090-9

Fax: (02) 213-1035

United Grain Industry Co., Ltd.

26/56, 27th Floor, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120

Tel: (02) 678-6988-97

Fax: (02) 678-6988-99

TPI Smart City Co., Ltd.

(formerly known as TPI Polene Power (Songkhla) Co.,Ltd.)

26/56, 27th Floor, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120

Tel: (02) 285-5090-9

Fax: (02) 213-1035

TPI Distribution Center Co., Ltd.

(formerly known as TPI Olefins Co.,Ltd.)

26/56, 27th Floor, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120

Tel: (02) 285-5090-9

Fax: (02) 213-1035

Mondo Thai Co., Ltd.

26/56, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120

Tel: (02) 213-1039

Fax: (02)213-1038

TPI Bio Pharmaceuticals Co., Ltd.

26/56, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120

Tel: (02) 285-5090-9

Fax: (02) 213-1035

Bangkok Union Life Insurance Plc.

175-177, 8th Floor, Bangkok Insurance Tower, Surawongse, Bangrak, Bangkok 10500

Tel: (02) 634-7323-30

Fax: (02) 634-7331

Thai Propoxide Co., Ltd.

26/56, 27th Floor, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120

Tel: (02) 285-5090-9

Fax: (02) 213-1035

Polene Silicon Co., Ltd.

(formerly known as Plastic Polene Co.,Ltd.)

26/56, 27th Floor, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120

Tel: (02) 285-5090-9

Fax: (02) 213-1035

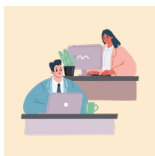
TPI Biomass Energy Co., Ltd.

(formerly known as TPI Polene Power (Onnut) Co.,Ltd.)

26/56, 27th Floor, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120

Tel: (02) 285-5090-9

Fax: (02) 213-1035

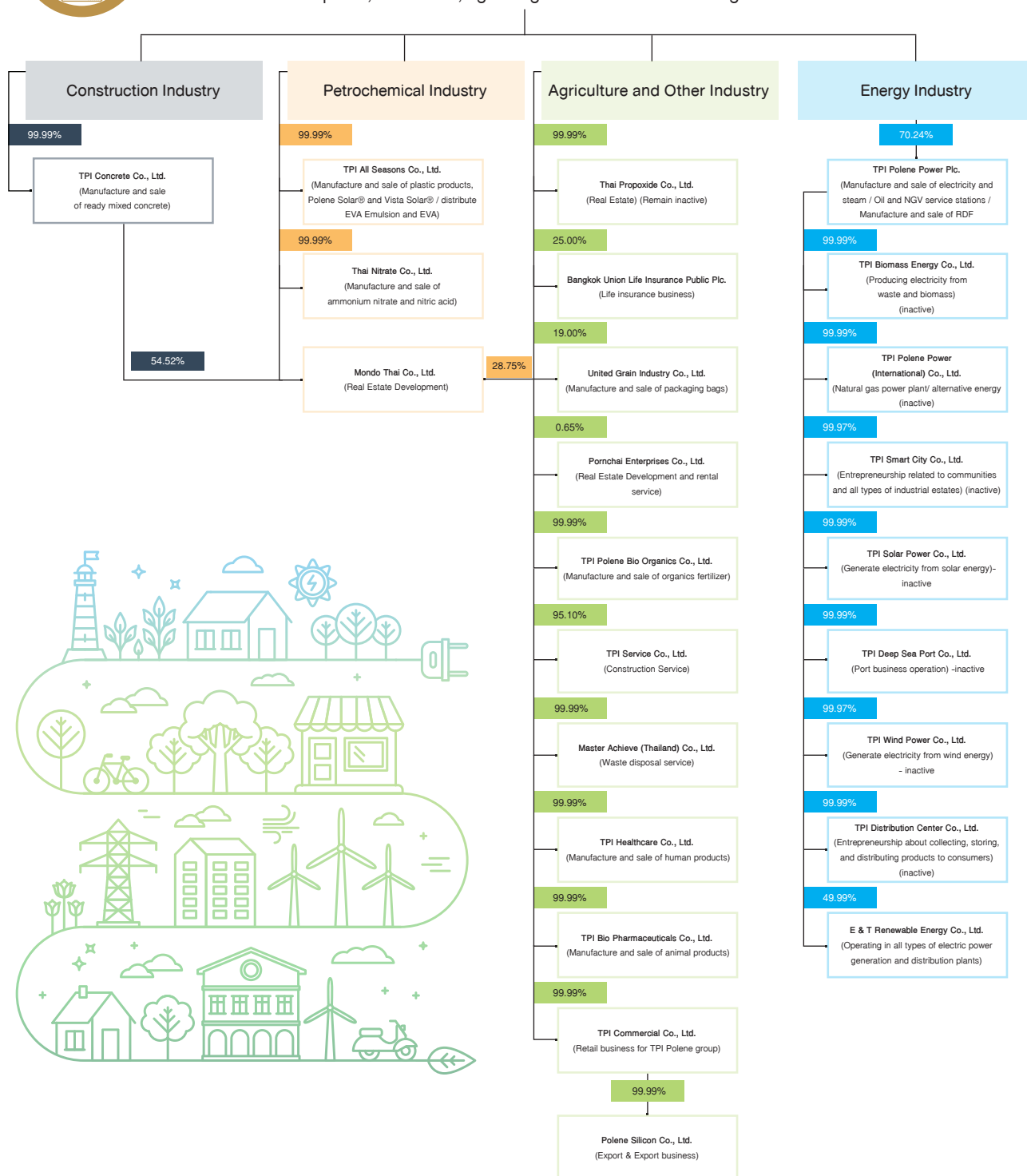


Business Structure of the Group [2-1]



TPI Polene Plc.

Manufacture & sale of cement, mortar, clinker, EVA/LDPE plastic resins, industrial waste disposal, CRT/FCB, lightweight concrete and drinking water.



Overview of TPI Polene Public Company Limited [2-1] [2-6]

As of 31 December 2024
(excluding affiliates)

Company Name	TPI Polene Public Company Limited or TPIPL
Nature of legal affairs	Listed on the Stock Exchange of Thailand
Head Office Location	26/56 Chan Tat Mai Road, Thungmahamek, Sathorn, Bangkok 10120 Tel. Number: +66 (0) 2213-1039-49, 285-5090-9 Fax Number: +66 (0) 2213-1035, 213-1038 Web Address: http://www.tpipolene.co.th
Registered Capital	Baht 23,560,235,000
Paid-up capital	Baht 18,935,235,000
Total Assets	Baht 159,687 million
Total Liabilities	Baht 94,863 million
Total Shareholders' Equity	Baht 64,824 million
Net sales	Baht 35,770 million
Business Unit	Head Office Bangkok The three major distribution terminals are located in Pathum Thani, Udon Thani and Chachoengsao provinces, and three warehouses are located in Samut Prakarn, Nong Khai and Ubon Ratchathani provinces. Cement plant, Saraburi Province 67 concrete batching plants (in Bangkok metropolitan area and metropolitan areas such as Mahachai, Ayutthaya province, Rayong province, Map Ta Phut, Pattaya, Sriracha, Bo-win and Udon Thani province) Concrete roof tile and fiber cement plants, Saraburi province LDPE/EVA plants, Rayong province



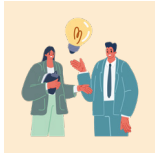
Employee Information [2-7] [2-8]

As of 31 December 2024

Employee details	2022		2023		2024	
	Number (persons)	percent	Number (persons)	percent	Number (persons)	percent
Total number of employees	7,226	100	7,096	100	6,857	100
Classified by gender						
Male	6,126	84.78	6,027	84.94	5,790	84.44
Female	1,100	15.22	1,069	15.06	1,067	15.56
Male						
Male employees younger than 30 years old	1,054	14.59	771	10.86	848	12.37
Male employees aged 30-50 years	3,577	49.50	3,820	53.84	3,389	49.42
Male employees over 50 years old	1,495	20.69	1,436	20.24	1,553	22.65
Female						
Female employees younger than 30 years old	201	2.78	189	2.66	183	2.67
Female employees aged 30-50 years	693	9.59	680	9.58	649	9.46
Female employees over 50 years old	206	2.85	200	2.82	235	3.43
Classified by employment contract						
Full-time staff	6,439	89.11	6,321	89.08	6,146	89.63
Contract employee	787	10.89	775	10.92	711	10.37
Classified by place of operation						
Head office	1,388	19.21	1,320	18.60	1,241	18.10
Cement plant, Saraburi province	4,364	60.39	4,274	60.23	4,119	60.07
CRT and FCB plants, Saraburi province	900	12.46	927	13.07	931	13.58
LDPE/EVA plants, Rayong province	574	7.94	575	8.10	566	8.25

Remark : The Company's employees exclude subsidiaries' employees.





Vision and Business Strategy [2-23]

TPI Polene Group operates its business with a focus on developing innovation and the technology has been applied to increase product value, with the research and development team of TPI Polene Group itself focusing on the policy towards sustainable development (ESG & Bio Circular-Green Economy-BCG for Sustainability) to low-carbon production to balance business growth, and maintain the environment, while creating strength to Thai society as part of driving the economy, as well as generating good returns and continuously creating balance for shareholders and related stakeholders under a policy of good corporate governance.



Vision

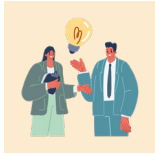
A leader in the business of construction materials, plastic resin, and clean energy power plants with excellence and international standards and conducting business with responsibility for sustainable growth in all dimensions of work procedures to enhance competitiveness and be at the forefront of the industry.





Business Strategy

- Look for investment opportunities offering high growth rates and good returns, with risks that can be managed.
- Have its own research and product development team to develop products that meet the needs of various consumers.
- Utilize technology and innovation to comprehensively and rapidly manage business continuity.
- Improve production efficiency to enhance competitive potential.
- Seek market opportunities, develop products for value addition, ensure compliance with international standards, advocate for environmentally friendly practices, and respond promptly to customer needs throughout product usage.
- Quickly and efficiently distribute products to reach recipients, and incorporate online trading and New Normal stores in communities to support the launch and market expansion of TPI Polene Group's products.
- Develop work processes while also reducing administrative costs for maximum efficiency.
- Reduce financial costs, including managing liquidity and financial risks to a manageable level.
- Manage risks throughout the organization with good corporate governance.
- Establish flexibility to adapt to business disruptions while proactively preparing for the future to enhance competitiveness continuously.
- Create value for shareholders and investors through stable profit growth and good returns, while also expanding the business for sustainable growth.
- Conduct business responsibly and contribute to the development of a high quality of life for society and communities. Manage operations throughout the supply chain, cultivate relationships with suppliers and customers, support the continuous development of personnel abilities, and ensure the quality of working life for employees on par with leading companies to foster loyalty to the organization.



TPI Polene's Value Chain [2-6]

Integration of Sustainability in Value Chain

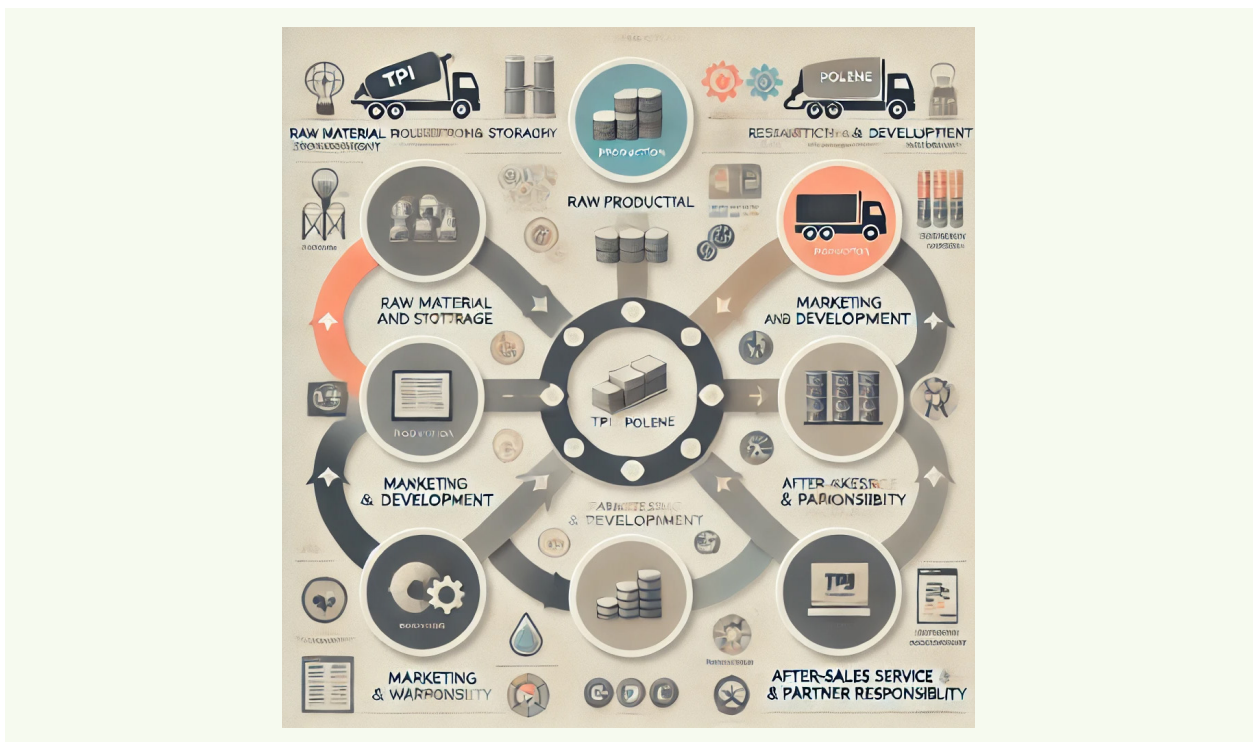
The Company prioritizes the integration of sustainability approaches across all processes, from responsible raw material procurement and clean energy-efficient production to transportation that reduces greenhouse gas emissions, the use of environmentally friendly products, and waste management focused on reuse or recycling, all aimed at reducing environmental impacts and maximizing resource utilization efficiency. With effective stakeholder management and the integration of sustainability concepts throughout its operations, the Company can create sustainable value for business, society, and the environment, laying a strong foundation for stable and sustainable growth in the future.

Stakeholder Management Strategy

TPI Polene Group has appointed a Corporate Social Responsibility Management Committee and Working Group (as per Factory Announcement No. 013-014/2566 and No. 014/2566) to facilitate consultations between the organization's representatives and the community, carrying out activities and developing the community in a step-by-step manner. The Company places special attention on continuously communicating and exchanging feedback with each stakeholder group to understand their perspectives and expectations regarding the Company's operations. The identification of stakeholders is carried out by assessing the impacts and influences between them, which enables the Company to plan and manage potential impacts carefully and effectively. This approach allows the Company to improve and develop its operational strategies for greater efficiency while creating a balance between the interests of the organization, society, and the environment.

Integration of Sustainability in the Value Chain

TPI Polene Group identifies its stakeholders through an analysis of relevance within the value chain, spanning from raw material procurement to post-consumer waste recycling. The assessment considers the impact and influence between various stakeholders, as illustrated in the diagram below.



Identification and Analysis of Stakeholders

The Company has conducted an analysis and identification of stakeholders, considering their relevance across the value chain, from upstream to downstream. The key stakeholders in the value chain include:

- **Suppliers and Business Partners:** Providers of raw materials, technology, and essential services for the production process.
- **Customers and End Users:** Contractors or consumers who choose to use the Company's products.
- **Employees and Workforce:** Human resources that serve as a critical driving force for the organization.
- **Communities and Society:** Individuals and groups affected by the Company's operations in economic, social, and environmental aspects.
- **Government Agencies and Regulatory Bodies:** Entities responsible for establishing policies and regulations that the Company must comply with to ensure adherence to relevant standards and legal requirements.

The identification of stakeholders is based on an assessment of the mutual impact and influence between the Company and its stakeholders. This approach enables the Company to strategically plan and effectively manage potential impacts in a comprehensive and responsible manner.

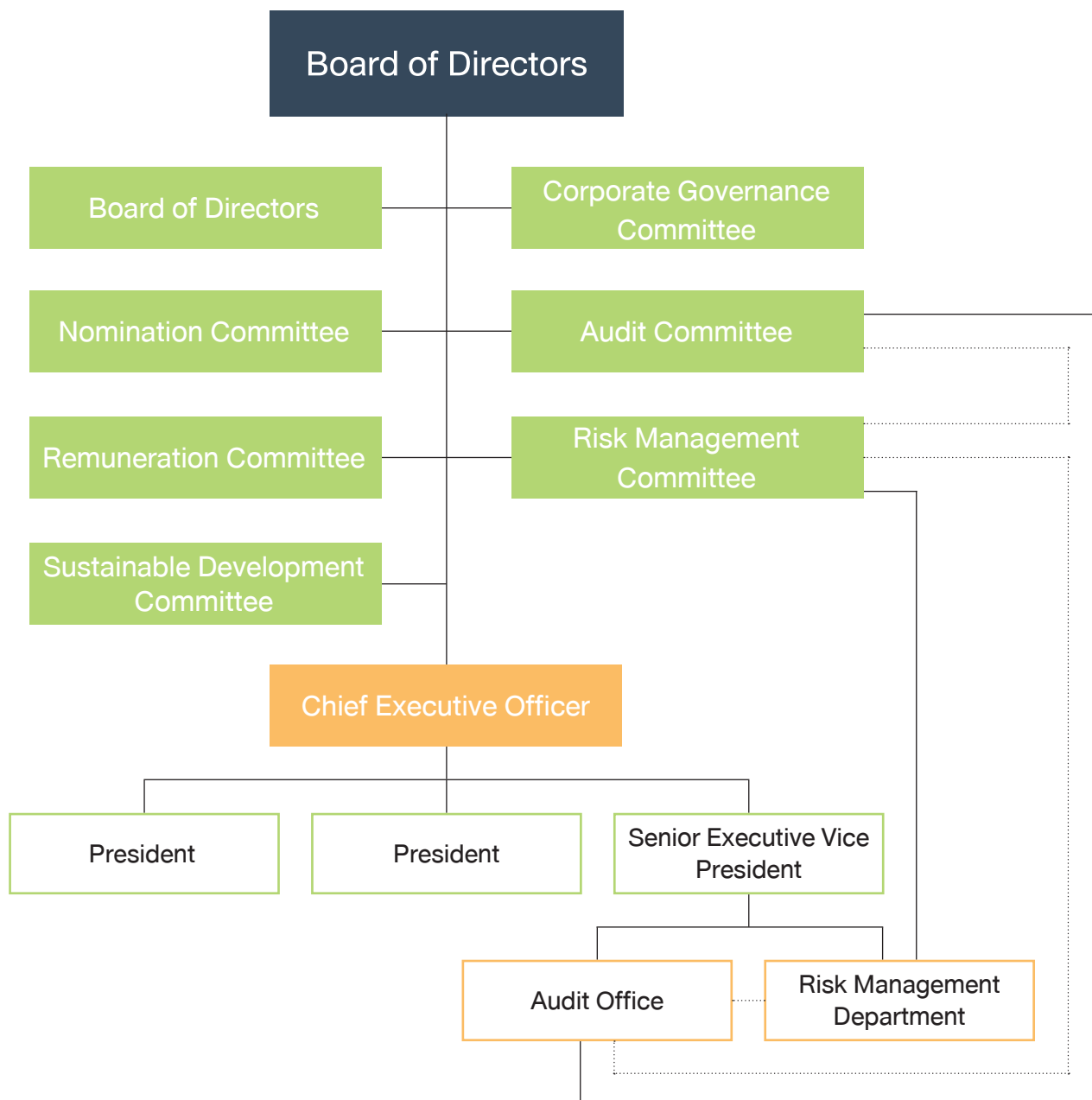
Identification and Analysis of materially impacted Stakeholders [2-6]

Activity	Driving factors	Internal Stakeholders	External Stakeholders	Significant Impact
1. Procurement of raw materials	Sourcing and securing sufficient raw materials (coal, domestic and international raw materials) while considering environmental impacts and optimizing resource utilization.	<ul style="list-style-type: none"> - Purchasing Department - Financial Department 	<ul style="list-style-type: none"> - Suppliers and business partners - Contractors - Competitors - Community 	<ul style="list-style-type: none"> - Take into account environmentally friendly raw materials to reduce greenhouse gases emission. - Green Purchasing - Local procurement that supports communities, reduces socioeconomic inequality - Have a quality and adequate source of raw materials. - Establish a trade framework with ethical suppliers and create good relationships and contribute to the sharing of benefit (Win-Win Situation) - Promote the Circular Economy concept in the network of suppliers and manufacturers - Collaborate with business partners to develop production and delivery processes that reduce environmental impacts



Activity	Driving factors	Internal Stakeholders	External Stakeholders	Signifincant Impact
2. Production, research, and product development.	Converting raw materials into quality-controlled and standardized cement products	<ul style="list-style-type: none"> - Production Unit - R&D Department - Technology and Innovation Department - Purchasing Department - Warehouse Agency - Occupational Health Department 	<ul style="list-style-type: none"> - suppliers - Communities around the factory - Government Organizations 	<ul style="list-style-type: none"> - Produce products under international standards - Qualified and reliable products, reliable to stakeholders - Committed to research and development for creating innovations and technologies to develop products that add value, meet international standards, and are environmentally friendly. - The introduction of AI technology to control the production system in the clinker kiln enables rapid controls to the production process, achieving balance across the entire system. - Implement the Zero Waste policy by minimizing waste in the production process. - Operations are in accordance with relevant standards and laws.
3. Product delivery and distribution	Ready to distribute products throughout network under safety standards	<ul style="list-style-type: none"> - Logistics Center - Logistic Department - Domestic and Export sales Department - Distribution terminals and warehouse throughout the country 	<ul style="list-style-type: none"> - Freight Contractor - Customers - Commercial Competitors - Communities around the distribution center 	<ul style="list-style-type: none"> - Speed of delivery on timely basis - Wide range of distribution channels - Transitioning from fossil fuel-powered vehicles to electric-powered transportation to mitigate global warming - Utilizing electric-powered mixer trucks (EV Mixer Trucks) for concrete delivery to project sites, reducing air pollution and PM 2.5 emissions
4. Marketing and sales distribution	Incentivizing customers to buy the best products and services, covering local and international areas.	<ul style="list-style-type: none"> - Domestic and international sales/marketing Department - Customer Service Department - Financial Department - Accounting Department 	<ul style="list-style-type: none"> - Agents - Contractor - Customers - Commercial Competitors 	<ul style="list-style-type: none"> - Foster strong relationships - Enhance partners' revenue and grow together - Establish strategic business partnerships - Ensure fast and efficient product distribution, including expanding online commerce and New Normal community stores to support the launch and market expansion of TPI Polene Group's products
5. Responsibility to business partners and after-sales service	Provide technical services showing how to use the correct products and can help customers at the workplace.	<ul style="list-style-type: none"> - Technical Department - Sales Department - Production Department 	<ul style="list-style-type: none"> - Contractor - Customers - Commercial Competitors 	<ul style="list-style-type: none"> - Create good impression on service that customers obtain before and after the sale. - Generating economic value through waste recycling and circular utilization

Corporate Governance Structure [2-9]



Note : means coordination and exchange of information between the committee.

The Management Structure of the Company as of December 31, 2024, consists of the Board of Directors, and seven sub-committees consisting of: Executive Committee, Audit Committee, Remuneration Committee, and Nomination Committee, Corporate Governance Committee, Sustainability Development Committee, and Risk Management Committee.

As of December 31, 2024, the Board of Directors has a total of 15 Directors, divided into 12 males and 3 females. The total of five members of the board (33.33%) is independent directors.

The Chairman of the Board is an Independent Director and shall not be appointed as the Chief Executive Officer or member of the sub-committee. According to the director structure, the Company has arranged a clear separation of roles between the Board of Directors and the Management. The person who holds the position of Chairman of the Board and Chief Executive Officer is in a separate position so that duties and responsibilities on the corporate governance and business administrative are clearly separated. [2-11]

Roles and Responsibilities [2-12] [2-13] [2-24]

The Board of Directors plays an important role in corporate governance for the best benefits of the Company. Each Director acts as the representative of shareholders and participates in promoting the Company's good governance principles, as well as supervising the business in accordance with its vision and operational strategy, as well as the Company's core policies to preserve the rights and create benefits for shareholders and other relevant stakeholders.



Roles of the Board of Directors

<https://www.tpipolene.co.th/en/aboutus-en/company-shares-en>



Audit Committee

<https://www.tpipolene.co.th/en/aboutus-en/organization-management/audit-committee>



Remuneration Committee

<https://www.tpipolene.co.th/en/aboutus-en/organization-management/remuneration-committee>



Nomination Committee

<https://www.tpipolene.co.th/en/aboutus-en/organization-management/nomination-committee>



Corporate Governance Committee

<https://www.tpipolene.co.th/en/aboutus-en/organization-management/corporate-governance-committee-en>



Risk Management Committee

<https://www.tpipolene.co.th/en/aboutus-en/organization-management/risk-management-committee-en>

In addition, in order to ensure the most efficient business management and reporting of sustainability of the business is the most efficient and effective, the Company has appointed an ESG Committee, which consists of four committees, namely: the Sustainability Development Committee, head office: Sustainability Development Committee, Saraburi Plant; the Sustainability Development Committee, Rayong Plant; and the Sustainable Development Committee, Concrete Roof Tiles Plant. The establishment of the role and responsibilities of the ESG Committee are as follows:

1. Set policies, strategies, frameworks, to implement strategies and to consider the selection of issues that promote the sustainable development of the organization, as well as set sustainable development goals to be in line with the implementation of the business operations in Economic, Society & Environment Dimensions to be proposed to the Chief Executive Officer for approval.
2. Supervise, review, and monitor the progress of the operation and evaluate the effectiveness of the implementation to comply with the Company's sustainability policy.
3. Encourage concrete implementation and participate in various projects within the framework of sustainable development with related departments, for both inside and outside the organization.
4. Provide advice, promote, and support of appropriate resources and the right personnel in order to implement sustainable development strategies throughout the organization and to be aligned in the same direction.
5. The Chairman of the ESG Committee has the authority to appoint sub-committees or working groups to be responsible for the implementation of sustainable development in each part in order to be comprehensive and in line with key aspects of the organization.
6. Report on the performance of the preparation of the sustainability report to the top management. The Sustainable Development Committee is required to hold meetings to regularly review operational efficiency and report performance summaries at least quarterly to the Chairman of the Sustainable Development Committee. [2-16]

Under the stakeholder engagement process, which drives key sustainability efforts during the reporting period, the company tracks and reports performance to the Sustainability Development Committee, covering Environmental, Social, and Governance (ESG) aspects. The summary for 2024 is as follows [2-16]

1. Environmental dimensions can be summarized as follows:

- 1.1 Achieving a low-carbon society: In 2024, cement factories were able to use waste as fuel to replace approximately 12% of the total heat required, compared to the target of 25%. This was due to a production shutdown in 2024 for the installation of a Bag Filter dust collector to replace the Electrostatic Precipitator (ESP) dust collector, which aims to increase the efficiency of PM 2.5 dust collection to up to 99.99%. The installation of the machinery is expected to be completed in March 2025, so the average rate of using waste fuel instead of coal in 2024 did not reach the 25% target.
- 1.2 In 2024, the Company invested in enhancing dust collection efficiency by implementing a Bag Filter or dust collector system to separate dust and small particles from the air or gas flow. This system is highly efficient, capturing more than 99.99% of dust particles smaller than 2.5 microns. Additionally, it helps reduce energy costs by Baht 11,400,974.11 per year by lowering electricity consumption by approximately 30,597,120 kWh annually.
- 1.3 In 2023, the Company invested Baht 436 million to purchase 41 60-ton EV mining trucks and 4 EV wheel loaders to replace combustion engine trucks and wheel loaders. This investment will help reduce transportation costs, greenhouse gas emissions, and PM 2.5 pollution.
- 1.4 In 2023 and 2024, the Company invested Baht 498 million to convert 72 heavy mining machines and 169 concrete and cement trucks from internal combustion engines to electric power. In 2024, the conversion of 38 heavy mining machines and 30 concrete and cement trucks was completed. This investment will help reduce transportation costs, greenhouse gas emissions, and PM 2.5 dust.
- 1.5 A new type of cement, hydraulic cement, has been developed to replace Portland Cement Type 1. It offers easy pouring and fast drying properties. By using hydraulic cement as a raw material for producing ready-mixed concrete or low-heat concrete, it helps reduce heat accumulation in large concrete structures and increases durability, allowing the concrete to withstand various environmental conditions effectively. It is also a sustainable product for green building construction, meeting LEED and TREES standards, helping to reduce work time and lower carbon dioxide emissions in the production process. In 2024, the Company produced 4,178,016.67 tons of hydraulic cement, reducing its Scope 1 greenhouse gas emissions by 0.3426 million tons of carbon dioxide

equivalent. Customers have used 3,023,613.64 tons, enabling the Company to reduce Scope 3 greenhouse gas emissions by 0.2479 million tons of carbon dioxide equivalent. In addition, the Company has designed green products, including Green Clinker, Green Cement, Green Fiber Cement, and Green CRT. These products focus on utilizing alternative raw materials, alternative fuels, and electricity from renewable energy sources.

- 1.6 The Company has implemented a project to improve the efficiency of cement production by separating limestone and grinding it to reduce the proportion of clinker used in cement production. The project will begin in December 2024 with an investment budget of Baht 64 million. It is expected to be completed in May 2025 and will enable the Company to reduce greenhouse gas emissions by 516,815 tCO₂e per year.
- 1.7 TPI Polene Group establishes a waste management policy based on the 1A3R principle (Avoid, Reduce, Reuse, Recycle) under the Zero Waste concept, ensuring that no waste, wastewater, used oil, chemicals, or other waste is released into the ground. Waste is disposed of in a cement kiln at temperatures exceeding 1,800 degrees Celsius in a closed system. This method is considered a modern, environmentally friendly technology. In addition, TPI Polene Group operates its business in line with the Bio-Circular-Green Economy (BCG) approach for sustainability, aiming to maximize the use of raw material resources. This includes the 100% reuse of leftover crushed rock from the construction stone production process and repurposing excess raw materials from one factory as inputs for another. The Company has set a goal to utilize \geq 95% of the total industrial waste generated. In 2024, the Company utilized industrial waste from the production process as alternative fuel and materials and recycled a total of 6,087.14 tons, accounting for 99.43% of the total industrial waste generated, exceeding the Company's target.
- 1.8 TPI Polene Group has implemented measures to restore the natural environment and protect the ecosystem by collaborating with government agencies or private sectors to rehabilitate forest areas.
- 1.9 Cement factories improve energy efficiency by setting targets for energy use per unit of production.
- 1.10 TPI Polene Group has a policy to manage water usage with maximum efficiency, ensuring that no water is released outside the factory. This includes controlling the quality of wastewater to meet the value of wastewater standards.
- 1.11 Operational impacts are minimized throughout the value chain.

2. In the social dimension, the Company operates its business responsibly and gives importance to all groups of stakeholders in a balanced manner, which can be summarized as follows:-

- 2.1 Aiming to generate good returns for shareholders by continuously paying dividends and maintaining good performance continuously.
- 2.2 Consider human rights principles, respect personal data, protect labor rights, encourage youth in education, by upholding the human rights of employees, business partners, customers, and local communities. In 2024, there were no reports or complaints of human rights violations.
- 2.3 Have safety, occupational health, and create a good working environment.
- 2.4 Manage and develop the potential and skills of personnel continuously. The target is to provide no fewer than 20 training hours per person per year. In 2024, the average number of training hours per employee was 26.14 hours.
- 2.5 In 2024, the Company has measured employee satisfaction levels in many dimensions by using the employee opinion survey results to develop activities to continuously build good relationships with employees to maximize the level of employee satisfaction.
- 2.6 TPI Polene Group provides equal opportunities for employment non-discrimination in favor or against any person, covering employees with disabilities and other disadvantaged groups. In 2024, 605 new employees were employed, which comprises 528 general staff, 76 seniors and 1 employee with disabilities.
- 2.7 Prioritize customer satisfaction in the products and services of TPI Polene Group.
- 2.8 Priority to the security of corporate information systems (IT Security).
- 2.9 Promote environmentally friendly procurement to reduce the risk of doing business with suppliers.
- 2.10 TPI Polene Group has created value and improved the quality of life for communities in all areas where TPI Polene Group's business operations are located, such as organizing discussion projects with communities and community development, chemical-free agriculture projects for school lunches in Ban Sap Bon, Saraburi

Province, providing scholarships to children with good academic performance, etc.

- 2.11 TPI Polene Group has supported various projects and activities for public benefits in 2024, totaling approximately Baht 28.44 million to communities, academic institutions, temples, hospitals and government authorities and contributed healthcare products and products of TPI Polene Group, such as cement, other construction materials, organic fertilizers, drinking water and health products to prevent pathogens.

3. Corporate Governance Dimension: TPI Polene Group adheres to the principles of accuracy and compliance with relevant laws and regulations under the business ethics. There is an operating framework based on good corporate governance, transparent disclosure of information and operating results. The Company has all-round risk management and flexibility in management to cope with the challenges of business competition, which can be summarized as follows:-

- 3.1 Promote the performance of the Board of Directors. Executives and employees shall comply with good corporate governance and business ethics in all operational areas. In 2024, the Company has implemented human rights actions against stakeholders throughout the value chain by respecting human rights to employees, suppliers, customers and local communities without any reports or complaints of human rights violations.
- 3.2 Provide guidelines for social enterprise operations, focusing on responding to the needs and improving the quality of life for communities in all areas where the Company's business operations are located, including social networking communities across the country.
- 3.3 Respond to the needs of all stakeholders in a balanced way for sustainable growth.

Additionally, in 2024, the Company created a sustainability report based on the GRI (Global Reporting Initiative) reporting standards (Materiality) in all three aspects (ESG), and it also promoted quarterly disclosure of sustainability performance to investors through the 56-1 one report, Sustainability Report, and the TPI Polene's website.

Monitoring, Evaluating and Reporting on Sustainability Performance [2-14]

The Board of Directors participates in the consideration and review of Material Topics, including reviewing and approving the sustainability report information before it is disclosed to the public by requiring the Sustainable Development Committee (ESG Committee) and executives from relevant departments to monitor, evaluate, collect, and gather important sustainability performance data, analyze and compare results with the goals set, and report results to executive. Furthermore, the Company requires that the sustainability report be prepared in accordance with international standards according to the reporting standards of the Global Reporting Initiative (GRI) for communicating sustainability performance to the public and stakeholders annually.

Assessment of the Board of Directors' Performance [2-18]

Self-assessment of the Board of Directors, sub-committees, and senior executives (CEO)/Chairman of the Management is an independent assessment at least once a year and in accordance with the principles of good corporate governance by taking into account the elements specified. The Company's ESG sustainability performance is one of the indicators used to assess the performance of the Board of Directors and executives and focuses on using the results to improve the performance of Board of Directors and Senior Executives (CEO)/Chairman of the Management Committee. The assessment form consists of

1. The Performance Assessment Form of the Board as a whole (Assessment as a whole) consists of 6 topics: Structure and Qualifications of the Board, Roles and Responsibilities of the Board, Board Meetings, Performance of the Board, Relationship with Management, Director's Self-Improvement and Executive Development.
2. The Performance Assessment Form for the Board of Directors as a whole consists of 3 topics: Structure and Qualifications of Directors, Sub-Committee Meetings, Roles, Duties, and Responsibilities of Sub-Committees.
3. The Performance Assessment Form for the Board of Directors as an individual (For Board/Sub-Committees) consists of 3 topics: Structure and Qualifications of the Board/Sub-Committees, Meetings of the Board/Sub-Committees, Roles, Duties and Responsibilities of the Board of Directors/Sub-Committees
4. The Performance Assessment Form for the Chief Executive Officer (CEO)/Chairman of the Management Committee includes financial performance (e.g. revenue, company sales, economic value added, other financial performance) and environmental, social, and/or governance (ESG) performance, such as employee/supplier/community satisfaction, especially with the aim of reducing greenhouse gas emissions, reducing the use of company resources for cost and environmental benefits, etc.). All of which are part of the performance evaluation indicators of top executives (CEO or equivalent) that consist of 10 topics:
 1. Leadership
 2. Strategy
 3. Strategy Implementation
 4. Planning and Financial Performance
 5. Relationship with the Board
 6. External Relations
 7. Administration and Personnel Relations
 8. Succession
 9. Knowledge of Products and Services
 10. Personal Attributes

Summary of Performance Assessment of the Board of Directors

<https://www.tpipolene.co.th/en/aboutus-en/organization-management/performance-appraisal>

Environmental Conservation meets domestic and internationally recognized standards [2-23] [2-28]

The Company has adhered to the principles of good corporate governance under the Listed Companies Act, 2017, issued by the Securities and Exchange Commission (Code of Corporate Governance) Regulations and is committed to driving the Company's business and TPI Polene's subsidiaries to meet the needs of Bio-Circular Green Economy and to be in line with the country's economic development, taking into account Environmental, Social, and Governance (ESG) and a business model innovation. In addition, the Company adheres to the importance of conducting business operations by emphasizing process supervision, and that quality products and services meet internationally recognized standards

In addition, the Company has a competitive advantage in low production costs due to the fact that its machinery and equipment are located in a single area, adjacent to the Company's limestone quarry. The Company is also the first cement plant in the country that can use waste-based fuel as an alternative fuel for coal, which reduces the costs of cement production. TPI Polene was the first cement manufacturer in Thailand to be awarded ISO 9002 Certification from the International Standard Institute, for surpassing industrial and environmental protection standards. This has enabled the Company to export cement to the state of California, where surrounding communities are highly aware of environmental conservation. The Company is also the first cement manufacturer in Thailand to be approved to use carbon labels

for cement and mortar products. This serves as certification of a production process that reduces greenhouse gas emissions. Hydraulic cement has been developed to replace Portland Cement Type 1. It is used as a raw material in the production of ready-mixed concrete or low-heat concrete, which helps reduce heat accumulation in large concrete structures and enhances durability, enabling the concrete to withstand various environmental conditions. It is also a sustainable product for green building construction, aligning with LEED and TREES standards and helping to reduce CO₂ emissions in the production process. In addition, the Company has designed Green Products, including Green Clinker, Green Cement, Green Fiber Cement, and Green CRT. These products focus on utilizing alternative raw materials, alternative fuels, and electricity from renewable energy sources. In addition, the Company has a pallet less cement packaging system to reduce the costs of product delivery and can increase the lifetime of the product even longer, and develop the technology of producing TPI red 299 (hydraulic cement) to replace Portland cement and help reduce greenhouse gases by 10-15%, receiving TIS standards certification.

The Company is also the first cement producer in the country to receive ISO 9001:2015 international certification from international institutions and is certified for four international standards of management: Quality Management System Standard (ISO 9001:2015), Environmental Management System Standard (ISO 14001:2015), Occupational Health and Safety Management System Standard (ISO45001:2018), and Energy Management System Standard (ISO50001:2011) by the United States (ASTM) and the European Federation (EU) and cement plant laboratory standards are certified by Thai Industry Standards institute with ISO/IEC 17025:2017 and TIS 17025:2018.

Regarding the Polymer business, the Company has successfully shifted its focus towards the technology market. It aims to revamp its polymer business, emphasizing the production of Specialty Polymer that is environmentally friendly, offering added value and higher profit margins. In 2024, the Company has successfully trialed the production of ethylene copolymers and new chemicals from the Pilot Reactor. It has the ability to adhere very well to PET OPP plastics, and Metalized Film, while also enhancing impact resistance and aiding in the formation of engineering plastics. Additionally, the number of producers for such plastic pellets is limited. The newly developed product has outstanding capabilities and is in high demand in the market,

particularly among manufacturers of high-quality materials and other advanced industries requiring durable plastics. The Company has begun upgrading and purchasing additional equipment to support production and expects to begin partial production in 2025, with full operations completed by 2026. This development is a significant step in strengthening the Company's competitiveness in the rapidly evolving and highly challenging petrochemical market.

Additionally, the Company is in the process of upgrading and procuring new machinery to enhance efficiency and increase its production capacity (Polymerization Conversion Rate). This upgrade is expected to boost overall production capacity by approximately 5-10% from the original level. This improvement aligns with the Company's goal of enhancing the stability of its production process and maintaining sustainability. The project is expected to be completed in 2026. This improvement was delayed from the original plan due to the project's expansion to support the production of new copolymers from ethylene. This investment is part of the Company's strategic plan to enhance efficiency and flexibility in production, enabling it to respond effectively to changing market demands and mitigate the impact of fluctuations in raw material market.

However, the Company has been certified to all three industry standards: Quality Management System (ISO 9001:2015), Occupational Health and Safety Management System Standard (ISO45001:2018) and Environmental Management System Standard (ISO 14001:2015), and has received certification by the Department of Industrial Works, Ministry of Industry, as a green industrial plant level 3: Green System with systematic environmental management with continuous monitoring and review for development. The product has also received a MiT certificate (Made in Thailand) from the Federation of Thai Industries.

In the EVA Emulsion and EVA Powder business, the Company stands as the first and only entity in the country possessing the technology to manufacture and distribute EVA Emulsion and EVA Powder to the market. This is achieved by leveraging the infrastructure and primary raw materials of our plastic pellet factory, thereby reducing construction costs and effectively managing the increased volume of raw materials. Additionally, it empowers the Company to negotiate prices more effectively with imported raw material producers. By utilizing ethylene and vinyl acetate, which would otherwise be discarded from the plastic pellet production process, as raw

materials, the Company not only cuts production costs but also mitigates emissions, benefiting both local communities and the environment. In 2024, the Company distributes water-based and powder adhesives to customers in the packaging, furniture, printing, and construction industries, which require binders to enhance adhesion to smooth, non-porous materials that general latex adhesives cannot adhere to effectively. The Company's adhesive products are highly flexible and suitable for use across a wide range of temperatures. Currently, the Company holds a 60% share of the domestic water-based adhesive market and a 30% share of the powder adhesive market. It also exports to international customers in China, India, Southeast Asia, and the Middle East. In addition, the Company has been improving its work processes and enhancing production efficiency to effectively respond to market demands while continuously reducing production costs. This is achieved by focusing on resource management and implementing appropriate technologies, enabling the Company to remain highly competitive in a changing market and sustainably maintain its market share in the domestic water-based adhesive industry.

The plant has been certified for quality management systems (ISO 9001:2015), occupational health and safety management standards (ISO45001:2018), and environmental management system standards (ISO 14001:2015), and the product also received a MiT certificate (Made in Thailand) from the Federation of Thai Industries.

Ammonium nitrate and nitric acid are manufactured and distributed by Thai Nitrate Co., Ltd. (99.99% owned-subsidary Company), the largest manufacturer of ammonium nitrate in Thailand. The Company's ammonium nitrate and nitric acid products have received industry standard (TIS) and international standards for quality management systems such as ISO9001:2015, ISO14001:2015, ISO45001:2018, ISO5001:2018, ISO17025-2017 and HALAL, and the product has received a MiT certificate (Made in Thailand) from the Federation of Thai Industries, as well as receiving certifications confirming them as a Green Industrial Level 3 Green System from the Department of Industrial Works, Ministry of Industry. Ammonium nitrate and nitric acid products are used in the cement industry, coal mines, quarries, industrial construction, and for nitrous oxide manufacturing used in the medical sector.

In addition, the Company joins as a member or has worked with both, public and private authorities to develop and upgrade the Company's operations as well as expand cooperation to deliver value to relevant stakeholders and society as a whole as follows:

Agency
1. Federation of Thai Industries (FTI)
2. Thai Cement Manufacturers Association (TCMA)
3. ASEAN Federation of Cement Manufacturers (AFCM)
4. Asian Cement Producers Amity Club (ACPAC)
5. Sustainability Disclosure Community (SDC)
6. Thai Listed Companies Association
7. Investor Club Association
8. Thai Institute of Directors Association (IOD)
9. Thai Chamber of Commerce
10. Thailand Carbon Neutral Network (TCNN)
11. Global Cement and Concrete Association (GCCA)
12. United Nations Global Compact (UNGC)

In 2024, the coverage (%) of certified management systems recognized at the international level within the operational sites, as defined by the reporting scope of this report, is as follows:

Certified Management Systems	%
ISO 9001 - Quality Management System	100%
ISO 14001 - Environmental Management System	100%
ISO 50001 - Energy Management System	68.57%
ISO 45001 - Occupational health and safety management System	90.13%
ISO/IEC 17025 - General requirements for the competence of testing and calibration laboratories	68.57%
ISO 14064-1 Greenhouse gases - Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals	100%

Remark Calculated based on the revenue of the Business units

04 TPI Polene and its Sustainability

Sustainability Policy Framework and Management [2-23] [2-24] [3-3]

The Board of Directors and the top management of TPI Polene have established sustainability policies with a focus on being instrumental in driving the organization to achieve its sustainability vision in line with the direction and strategy of business operations by supporting the Sustainable Development Goals (SDGs) of the United Nations in order to balance the economy, environment, and society under good corporate governance with a policy framework and sustainability management as follows:

1. Economic Dimension: With an emphasis on the adoption of technology and innovation in the production process of quality products and services with an effective management at every stage, and with R&D results to further constantly develop business models and create added value for products and services as well as seek investment opportunities that offer high returns on investment. In addition, the company has formulated a strategy for both short-term and long-term business growth, with the ability to adapt flexibly, taking into account all internal and external risk factors, being ready in terms of systems and production efficiency.

2. Environmental Dimension: In pursuit of developing a low-carbon society and mitigating greenhouse gas emissions, the organization recognizes the necessity for climate risk management as a crucial sustainability imperative. The overarching goal is to achieve carbon neutrality by 2043, leveraging climate management data aligned with the framework of the Task Force on Climate-related Financial Disclosures (TCFD) to support the strategy formulation. This entails establishing both short-term and long-term greenhouse gas reduction objectives, alongside investment and financial planning initiatives, all aimed at ensuring the organization's sustainability. By improving production efficiency and adopting environmentally friendly technologies, such as utilizing waste as fuel instead of coal in the cement production process, reducing dependence on fossil fuels, and sourcing electricity from renewable sources including biomass energy derived from production waste, along with employing electric vehicles and heavy machinery like EV Dump Trucks, the Company implements both short-term and long-term low-carbon strategies to mitigate climate change risks and achieve its goal of reducing greenhouse gas emissions. Furthermore, factories within the TPI Polene group adhere to both Thai and international standards, ensuring compliance with environmental certifications and other related standards.

In addition, the Company emphasizes the importance of the Green Economy policy and utilizes clean energy. It produces environmentally friendly products, such as hydraulic cement, to reduce greenhouse gases, decrease fossil fuel usage, enhance energy efficiency, and bolster the utilization of renewable energy sources. Furthermore, the Company is committed to addressing waste management issues, prioritizing the Bio Economy policy by advocating for organic agriculture, promoting biotechnology, and minimizing chemical use in agriculture to prevent soil degradation. It also seeks to reduce chemical usage in livestock farming for the betterment of animal and human health as consumers. Additionally, the Company champions a Circular Economy policy, aiming to maximize resource utilization, minimize waste generation, effectively utilize waste, prioritize biodiversity preservation, mitigate soil degradation, and judiciously employ water resources. Moreover, it strives to mitigate operational impacts across its value chain, including employees, suppliers, customers, and the social communities, ensuring a balanced response to the needs of all stakeholders.

3. Social Dimension: Conducting the business with social responsibility, creating balanced consideration for all stakeholders, respect and protection of human rights with stakeholders throughout the value chain, including employees, partners, customers, and social communities, creating good returns on investment for shareholders, occupational health and safety, hygiene and creating a good working environment, and continuously manage and develop talent and skills for personnel, customer health and safety, evaluating social partners and providing clear product label information, respect privacy of information, promote youth in education and contribute to creating value and improving the quality of life of the community and society to grow sustainably.

4. Corporate Governance Dimension: Adhering to the principles of accuracy and compliance with applicable laws and regulations under business ethics with an operating framework based on good corporate governance principles with transparent disclosure of information and performance with versatile risk management and flexibility in management. Anti-corruption, have a transparent and fair procurement system, do not use inside information to seek benefits, and have the security of date and information systems.

Respecting Human Rights The foundation for human rights implementation

The Company places great emphasis on human rights operations and operates its business with a balanced responsibility to its stakeholders under good governance policies and respect for human rights as a guideline for a business management approach that focuses on sustainable development to be in line with the government's policy to promote the BCG Model and comprehensively improve the quality of life of communities and society in the country, diversifying opportunities and effectively reducing inequality.

The Company will implement human rights actions against stakeholders throughout the value chain, including employees, suppliers, customers, and local communities and complying with the provisions set forth in international human rights principles and international labor standards, including the United Nations Universal Declaration of Human Rights and the International Declaration of Fundamental and Working Rights of the International Labour Organization. Thai Labour Protection Act B.E. 2560 (2017) and respect for the International Labour Organization (ILO)

Management Approach The Company attaches great importance to respecting the rights of employees.

Labor management is based on respect for human rights in various areas such as gender, religion, beliefs disability, race etc. The Company provides equal and fair opportunities for work and career advancement without discrimination, promoting Diversity, Equity, and Inclusion (DEI) and practices in alignment with international standards, giving freedom of association and collective bargaining in

accordance with fundamental rights. Employee personal information is secured, combating illegal child labor. There is no use of conscripted labor (labor that is conscripted to work illegally) and there is no forced labor (forced labor to work beyond the legal limit without compensation).

The Company has treated its employees fairly in accordance with human rights principles. A welfare committee has been set up with employee representatives who are responsible for negotiating with the company about agreements affecting employees. The Company evaluates the performance of all employees with clear criteria and uses the results of employee performance evaluation to determine fair remuneration. Various training courses are provided to employees as appropriate according to their job positions and job responsibilities to help promote progress and develop the potential of employees. The Company also measures the level of satisfaction and engagement of employees with the Company annually and takes the results of the satisfaction assessment into consideration for the project, policies and procedures to improve the care and empowerment of employees. In addition, the Company has provided an occupational health and safety system for employees as well.

The Company attaches great importance to respecting the rights of business partners.

The Company treats business partners equally and fairly and provide transparent procurement process and fair competition without discrimination. The security of personal information of partners is maintained and encourage suppliers to comply with human rights principles through the use of child labour. The Company requires and encourages suppliers in establishing Diversity, Equity, and Inclusion (DEI) policies and practices that align with international standards. The Company has incorporated human rights and occupational health and safety issues into its Code of Conduct for Procurement Partners. The Company assesses the environmental, social and corporate governance risks (ESG Risk) of its suppliers annually to ensure that the Company's suppliers conduct business with respect for human rights and has also provided occupational health and safety systems to its partners and contractors appropriately as well.

The Company attaches great importance to respecting the rights of its customers.

The Company treats customers fairly and is committed to providing users with benefits and services, and has the highest satisfaction with products, strives to develop quality and safe products continuously, as well as securing customers' personal information. The Company has also provided customers with seminars to strengthen relationships, offering in-depth knowledge about the industry, market trends, and optimal product usage. These seminars give customers the opportunity to express their opinions, which can be used to improve products and services to better meet market demands. Additionally, the Company conducts monthly customer satisfaction surveys and assessments.

The Company attaches great importance to respecting the rights of local communities.

The Company recognizes the importance of the local community by providing care, support, and good relations with surrounding communities. In addition, the Company has prepared a report on the performance of CSR-DIW Continuous Entrepreneurs' Social Responsibility Standards, a report on the results of the Community Economic and Social Monitoring Survey, and a summary report of the results of the Community Satisfaction Survey annually to survey the concerns of communities and society that may be affected by the Company's operations, and to apply the concerns found to improve to reduce the impact that may cause damage to

the community and society as a whole, The Company has implemented strategies to build relationships and continuously support the community as follows:-

- Promoting the hiring of employees from surrounding communities and employing local labor to support sustainable livelihoods alongside the company's business operations.
- Supporting social and cultural activities in the community, such as preserving and protecting cultural heritage, particularly in areas affected by the Company's operations. The Company also supports a chemical-free agriculture project for school lunches every year at Ban Sap Bon School in Saraburi province, providing a learning resource on chemical-free farming practices. Additionally, the Company provides mobile health clinics for the local community.
- Contributing to the development of infrastructure or public utilities in the area, such as supporting housing renovation projects in collaboration with the Kaeng Khoi District Quality of Life Development Fund, helping repair and build homes for disadvantaged individuals, the disabled, and those with chronic illnesses lacking housing in the Kaeng Khoi District of Saraburi.
- Providing channels for the community to communicate and offer feedback to the Company. The Company ensures transparency by disclosing information and performance reports through Poly News and promoting human rights education in the community through collaboration with the community committee.

Human Rights Due Diligence (HRDD)

The Company has conducted due diligence on human rights as a risk management process associated with its ongoing business operation. The purpose is to identify prevention, mitigation and consider how the company Addressing human rights impacts throughout business activities by referring to the human rights due diligence process, which consists of five steps of the UN Guiding Principles on Business and Human Rights (UNGPs) as follows:-



1. Policy Commitment

The Company has established the Company's human rights policy to cover the entire value chain of the Company, including employees, suppliers, customers, and local communities, including the Code of Conduct, the Code of Conduct for purchasing partners. Supplier Code of Conduct Announcement on the Company's Global Human Rights Policy no. 006/2559 and Announcement Personal Data Protection Policy no. BorKor 0017/2564 (For more information, please visit <https://www.tpiolene.co.th/en/aboutus-en/personal-data-protection-policy-en>)

2. Cultivation through corporate

The Company is committed to the implementation of human rights policies to foster a culture of respect for human rights principles throughout the organization. Training and dissemination of knowledge on respect for human rights have been organized for employees at all levels within the organization and human rights risks are continuously assessed.

3. Human right risk assessment

The Company conducts human rights risk assessment annually for a consecutive three year and reviews human rights risks related to business operations throughout the value chain to ensure that the Company's plans and measures to mitigate, correct, and remedy human rights impacts are appropriate. The results of the risk assessment will enable the Company to effectively conduct business in accordance with human rights principles in risky operating areas. It helps to prepare for and prevent possible damage from human rights violations.

3.1 Determination of Audit Scope

The Company has conducted an assessment of human rights risks in key operating areas, encompassing the Bangkok Office and Saraburi Factory, where business or activities involve employees, suppliers, customers, and nearby local communities. A total of 10 issues have been identified, spanning areas including: (1) Non-discrimination; (2) Promotion of diversity and equal opportunities, and Diversity, Equity & Inclusion (DEI) ; (3) Freedom and collective bargaining; (4) Occupational health and safety; (5) Personal data protection; (6) Child labor; (7) Conscripted and forced labor; (8) Security practices; (9) Efficiency, readiness, and reliability of the electrical system; and (10) Continuous care for the community and society. These human rights risk issues are meticulously classified in detail by relevant stakeholder groups as follows:

Employees	Suppliers	Customers	Local Communities
<ul style="list-style-type: none">- Non-discrimination- Diversity, Equity & Inclusion (DEI)- Freedom and collective bargaining- Occupational health and safety- Personal data protection- Child labor- Conscripted and forced labor	<ul style="list-style-type: none">- Non-discrimination- Occupational health and safety- Personal data protection- Child labor- Conscripted and forced labor- Security practices	<ul style="list-style-type: none">- Efficiency, readiness, and reliability of the electrical system- Personal data protection	<ul style="list-style-type: none">- Continuous care for the community and society

3.2 Human Rights Risk Assessment

The Company utilizes the criteria of The Committee of Sponsoring Organizations of the Treadway Commission - Enterprise Risk Management (COSO-ERM) to assess human rights risks based on the severity of impacts and the potential opportunities associated with all 10 human rights-related issues.

3.3 Prioritization of Human Right Risks

The result of the human rights risk assessment found that there is one human rights issue with high risk, which is the risk of occupational health and safety of employees, while other human rights issues in the value chain are of medium to low risks as follows:

Result of Human Rights Risk Assessment

Risk level of human rights issues		
High Risk	Medium Risk	Low Risk
1. Occupational health and safety	1. Non-discrimination 2. Diversity and equal opportunities 3. Freedom and collective bargaining 4. Child labor 5. Conscripted and forced labor 6. Continuous care for the community and society 7. Personal data protection	1. Security practices

The Company manages risks in accordance with the guidelines for human rights operations by strictly implementing preventive measures and mitigating the risk of various human rights violations throughout its operations. This involves closely monitoring implementation as outlined in the guidelines for managing human rights complaints and remedies. These measures include continuous monitoring and reporting of performance results, aiming to comply with the target of ensuring no instances of human rights violations occur throughout the value chain.

4. Remediation and Mitigation

In addition, the Company is aware of the need to take corrective actions in the event of any violations that may occur in the future. It will establish a process for receiving complaints, conducting thorough examinations and investigations, and determining measures to mitigate and rectify the impacts that have occurred, including fair remedial measures. This is to ensure that those affected receive appropriate remedies for the damages caused, as well as timely protection or guarantees that such infringements will not occur again.

In 2024, the Company did not receive any reports or complaints regarding human rights violations.

Preventive Measures and Impact Mitigation

Related Stakeholder	Impacts	Mitigation and Remediation
Supplier	<ul style="list-style-type: none"> Illegal labor hiring Discrimination against suppliers 	<ul style="list-style-type: none"> Signing for acknowledging the Code of Conduct of manufacturer supplying products, raw materials and services Complying with the supply chain management system Monitoring the performance of suppliers through supplier's self-assessment Supplier Survey Auditing suppliers' performance according to the sustainability potential assessment form Explaining guidelines to traders at their operational level, ensuring their understanding and compliance, aligning operations consistently with the requirements, the Company's standards and the labor laws established by the International Labor Organization (ILO) concerning labor rights

Related Stakeholder	Impacts	Mitigation and Remediation
Employee	<ul style="list-style-type: none"> Discrimination against employees based on gender (female, male, LGBTQ+), race, age, religion, ethnicity, culture, or socioeconomic class Employee health and safety Employment conditions Personal data of employees may be at risk of leaking outside the organization 	<ul style="list-style-type: none"> Related policies include the Company's human rights policy, its policy to prevent sexual harassment, the personal data protection policy, as well as guidelines for good corporate governance, and the Code of Conduct and ethics for manufacturers supplying products, raw materials, and services Promoting the health and safety of employees through system standards (i.e. ISO 45001, OHSAS 18001) Establishing measures to deal with the COVID-19 crisis, such as Work From Home and conducting online meetings Establishing a welfare committee that promotes the bargaining power of employees Conducting annual employee satisfaction surveys and employee engagement surveys Adjusting the area surrounding the pond to accommodate more motorcycle parking has improved convenience for employees, reducing congestion and parking time. Employee satisfaction with the increased motorcycle parking space was the highest, averaging 94.21%.
Community	<ul style="list-style-type: none"> Standard of living and quality of life for people in the community Occupational health and community safety Community access to clean water sources 	<ul style="list-style-type: none"> Related policies, such as the Human Rights Policy, Sustainable Water Management Policy and Plan, and the policy of refraining from obstructing access to clean water sources, include measures such as avoiding blocking water sources or depleting community water until it causes drought Establishing Environmental Management System Strictly adhering to the preventive and corrective measures outlined in the environmental impact assessment report for environmental impacts Conducting community engagement through social projects / Conducting community satisfaction surveys such as project preparation, annual community participation and development (Public Relations Department plan with policy setting, monitoring, inspection and evaluation of the results from the process of dialogue with the community (CSR-DIW Continuous Report 2024)
Environment	<ul style="list-style-type: none"> Negative impacts on the environment, such as air pollution emissions, improper waste management, and the occurrence of unexpected events. 	<ul style="list-style-type: none"> Establishing Environmental Management System Monitoring and reporting all types of emissions resulting from the Company's operations Preventive and corrective measures in the short and long term Continuously developing environmental innovations Conserving and protecting cultural heritage, especially in the area surrounding the organization's operations, includes maintaining and caring for the Red Paduak tree planted by Her Royal Highness Princess Maha Chakri Sirindhorn on August 19, 1992, during her visit to inaugurate TPI Polene's factory. The organization also preserves the landscape around "Pha Sadet," an important site in the history of land transportation during the reign of King Rama V. His Majesty graciously ordered the State Railway of Thailand to construct the railway from Ayutthaya to Nakhon Ratchasima provinces.

Related Stakeholder	Impacts	Mitigation and Remediation
Customer	<ul style="list-style-type: none"> Health and safety Discrimination against customers Data privacy Customer satisfaction in various services. 	<ul style="list-style-type: none"> Developing and promoting product manufacturing, promoting the Bio Economy, and ensuring hygiene Labelling products indicating health and safety for customers Assessing the risk of hazardous substances in products, implementing a health risk assessment system, establishing guidelines for risk assessment criteria, chemical risk control guidelines, and conducting environmental risk assessments Establishing Customer relationship management system (CRM) Conducting an assessment of customer satisfaction in various services using Systematic Sampling Considering customer complaints for improvement and resolution, then inform customers the progress and ask for their feedback regarding the solutions and also give opportunity for customers to provide additional comments and analyze the complaints to prevent the recurrence and train employees to manage complaint efficiently.

Remedies and Complaints Channels

TPI Polene Public Company Limited

No. 26/56 TPI Tower, Chantaimai Road, Thungmahamek, Sathorn, Bangkok 10120

Tel. 02 2131039

EMAIL: orapin@tpipolene.co.th

5. Monitoring and Reviewing of the Human Rights Performance

The Company has followed up on compliance with the human rights impact mitigation clauses, focusing on mitigating and mitigating negative impacts. However, agencies that have implemented mitigation measures must monitor and review the action plans to improve efficiency and should be re-evaluated to know the remaining impacts. The department that have implemented mitigation measures must monitor and review their action plans to achieve effective development and re-evaluate to ensure that impacts are addressed correctly and appropriately. In addition, the Company requires suppliers to conduct their own human rights audits. Environment, Social, Governance (ESG) of suppliers covering comprehensive labor impact assessment, environment, human rights, and social community. The Company has also provided channels to listen to opinions and suggestions from employees and external parties. To review and revise comments As a result, the Company can prevent and reduce risks that may lead to human rights violations.

Human Rights Operations in 2024

In 2024, the Company worked on human rights with various stakeholders, as follows:

Respecting Employees' Rights

- The election for a new Welfare Committee for the year 2024 was conducted. This committee serves as the representative of employees and plays a role in negotiating with the Company regarding agreements that affect employees.
- All employees are provided with equal employment opportunities. In 2024, the Company hired 605 new employees, including 76 elderly employees and 1 disabled employee.
- The average number of training hours for employees in each course is 26.14 hours per person per year. The Company has set a goal to enhance knowledge and develop employee potential, aiming for an average of no fewer than 20 training hours per person per year for each course.
- The overall level of employee satisfaction and engagement with the Company was at 84.05 %, with the Company's target level of employee satisfaction and engagement towards the Company was at 75%. The company has used the results of such employee surveys to continuously develop activities to create good relationships with employees to keep satisfaction levels at the highest level.
- Employee supervision in terms of occupational health and safety at work. It was found that the number of work-related injuries and deaths was zero. Zero rates of high-impact work-related injuries and zero rates of occupational illnesses, which meet the Company's occupational health and safety targets.

Respect for customer rights

- Produce and deliver quality and safe products for customers.
- Customer satisfaction assessment results of TPIPL's cement and mortar cement on various products and services customers in 2024 was scored an average of 87.80%, with the Company's target of satisfaction of TPI cement customers was at least 80% .

Respect for the rights of local communities

- The 2024 Chemical-Free Agriculture Project for School Lunches at Ban Sap Bon School, Saraburi Province, aims to provide a learning resource for growing vegetables using chemical-free agricultural methods in the community's schools. In addition, the project ensures that students receive nutritious meals and generates income for the students at Ban Sap Bon School.
- Promoting and supporting the conservation of natural resources and the environment with a budget of over Baht 750,000, the Company planted approximately 9,000 trees across an area of 125 rai through various activities. These included the Muak Lek River Conservation Day, the Tree Planting Project to Restore Forests and Increase CO₂ Absorption in collaboration with the Thap Kwang Research Station, and the Tree Planting Project to Honor His Majesty the King in areas such as the Khao Man Community Forest, the Thap Kwang National Reserve Forest, and the Navaminda Kasatriyadhiraj Royal Air Force Academy. The Company also supported the Saraburi Sapling Nursery Station with organic fertilizers for cultivating and distributing saplings to the public and various agencies, aiming to increase green spaces and restore the ecosystem in the community.



ESG in Supply Chain Risk Management

The Company gives priority on risk management within the supply chain, focusing on environmental, social, and governance (ESG) issues to support sustainable development and ensure the confidence of all stakeholders. The Company has conducted proactive risk assessments in various areas to identify and manage potential risk factors that may impact business operations and corporate image.

1. ESG Risk Assessment Process

1.1 Risk Analysis and Identification

- **Human Rights Risk Assessment:** The Company monitors and assesses its supply chain to ensure fair labor practices, respect for human rights, and freedom from child or forced labor. We conduct comprehensive due diligence to verify that our suppliers uphold fair labor practices, prioritize worker safety, and respect human rights. Additionally, we promote diversity and inclusion in the workplace.
- **Assessment of Employee and Labor Welfare Risks:** The Company examines working conditions in its supply chain to ensure compliance with labor laws, prioritizes employee safety, does not employ forced labor, and embraces diversity, equity, and inclusion (DEI) across all dimensions, including race, gender, age, and experience. This approach ensures that everyone can participate and grow equally within the organization, creating a diverse culture and a focus on workplace safety.
- **Code of Conduct Risk Assessment:** The Company analyzes the risk that manufacturers or distributors in the supply chain may engage in unethical behaviors, such as fraud or intellectual property infringement.
- **Environmental Risk Assessment:** The Company considers the risks associated with non-compliance with environmental laws to ensure that its business partners share a commitment to environmental stewardship, including waste management, natural resource conservation, and reducing greenhouse gas emissions. The Company seeks to do business with partners who are committed to sustainable practices and environmental stewardship, from resource management and energy efficiency to minimizing emissions.
- **Economic Risk Assessment from Business Partners:** The assessment of economic risks arising from business partners is a key component of the company's risk

management process, aimed at preventing potential impacts on operations. Evaluating the financial stability of business partners is a critical aspect of risk assessment.

1. Risk of Dependency on a Limited Number of Suppliers The Company has analyzed the risks associated with relying on a small number of business partners, with the following assessment results:

Impact: Delays or issues in product deliveries from key suppliers may disrupt production processes and affect the company's ability to fulfill customer orders.

Risk Management Measures:

- Expanding the number of suppliers in critical product and service categories.
- Establishing backup suppliers to mitigate emergency situations.
- Entering into long-term contracts with provisions for unforeseen circumstances.
- Conducting regular financial assessments of key suppliers.
- Monitoring news and events that could affect supplier stability.
- Reducing risk by diversifying procurement across multiple suppliers.

2. Risk of Substandard Product / Services The Company has assessed the risks associated with receiving products or services that do not meet quality standards, with the following findings:

Impact: Substandard products could damage the company's reputation and increase production costs.

Risk Management Measures:

- Implementing stringent quality control processes for products and services from suppliers.
- Defining quality requirements in contracts and evaluating suppliers based on established standards.
- Strengthening relationships with suppliers to encourage continuous quality improvement.

1.2 Risk Assessment Tools and Methods

- On-site Audit to assess risks and operations.
- Supplier Questionnaire and Document Review: the Company conducts a formal assessment of its suppliers' progress with the REACH (Registration, Evaluation, Authorization, and Restriction of

Chemicals) Regulation. This is a process to verify that suppliers are complying with the EU Chemicals Directive in accordance with REACH legislation using the Supplier Questionnaire & Self-Assessment. Questionnaires are sent to suppliers to assess their compliance with REACH requirements to reduce legal and commercial risks for the Company, promote consumer and environmental safety, and increase transparency and accountability in the supply chain.

- A Risk Scoring System is applied to prioritize risks.
- Verification of sustainability report and information published by central organizations such as EcoVadis or CDP

2. Risk Management Guidelines

2.1 Risk Reduction and Prevention

- The ESG policy is developed and communicated to suppliers, with clear requirements.
- Suppliers are provided with training on practices that align with ESG standards.
- The Company collaborates with suppliers to improve practices, such as reducing greenhouse gas emissions and managing waste.

2.2 Monitoring and Follow-up

- An annual audit report on ESG risks is prepared.
- Corrective actions are monitored for suppliers identified as high-risk.
- Technology systems are utilized to track suppliers' data and behavior in real time.

2.3 Actions in the Event of a Violation

- Action steps include notifications, setting time frames for remediation, and terminating business relationships in the event of repeated or serious violations.

3. Results and Performance

- Reducing the number of high-risk suppliers in the supply chain and Increasing the number of suppliers certified for sustainability in line with ESG standards.
- Creating transparency in the supply chain through ESG disclosure and reporting.
- Economic risks arising from the Company's suppliers and environmental, social and corporate governance risks (ESG Risk) were assessed by 13 out of 1,641 Critical Tier 1 suppliers with an order value greater than or equal to Baht 50 million per year, representing 54.82% of the total order amount.

Supplier Performance in 2024

	2022	2023	2024
Percentage of suppliers that have signed a Sustainable Procurement Charter or Supplier Code of Conduct.	92.04%	96%	97.50%
Percentage of suppliers that have signed contracts covering environmental, labor, and human rights requirements.	92.04%	96 %	97.50%
Percentage of target suppliers that have passed the Self-Assessment (ESG Risk).	100%	100%	100%
Percentage of target suppliers that have been audited on-site for ESG. (Onsite Audit)	0	100%	100%
Percentage of all buyers across all locations trained on sustainable procurement. The company has provided training courses on supply chain management and sustainable procurement for executives, employees, and relevant stakeholders in the procurement process.	100%	100%	100%
Percentage or number of verified or assessed suppliers who have taken corrective action or capacity building.	100%	100%	100%
Percentage of the Company's total new business partners screened using social criteria [414-1]	100%	100%	100%

	2022	2023	2024
Number of business partners assessed for social impact [414-2]	21 cases	15 cases	13 cases
Number of business partners identified as having actual and potential negative social impacts [414-2]	0 case	0 case	0 case
Percentage of the Company's business partners identified as having actual or potential material negative social impacts, for which improvements were approved as a result of the assessment [414-2]	0%	0%	0%
Percentage of the Company's business partners identified as having actual or potential material negative social impacts, whose relationships were terminated as a result of the assessment [414-2]	0%	0%	0%

Note: * Self-Declaration Assessment: The Company will conduct an on-site ESG audit after its direct business partners (Critical Tier 1) complete a self-declaration. Additionally, the Company has a plan to monitor and conduct audits in the operating area at least once every two years.

Collaboration and Continuous Development

ESG risk management in the supply chain is a key strategy for building sustainability and strengthening stakeholder trust. The Company has worked with its business partners by providing advice and support to enable continuous improvement in operational collaboration. The Company remains committed to developing processes and practices that ensure our supply chain meets the highest environmental, social, and governance standards

Support and Promotion of Sustainable Business Operations for Trade Creditors

The Company has a policy to treat all creditors equally, ensuring compliance with legal requirements and business standards by strictly adhering to terms and conditions and contracts, as well as the principles of honesty, transparency, and fairness in the payment process to business partners, creating trust and sustainable cooperation.

The Company's Requirements and Practices towards Creditors are as follows:

1. The payment terms will be specified in the agreement or contract signed between the Company and its business partner. Payment is due 30-60 days after the goods or services are delivered, depending on the agreement made with each creditor (which may be more or less than 30 days). The Company does not have a policy of late payments to creditors. Payments via money transfer or cheque are made on the 1st and 4th Fridays of each month, in accordance with the specified payment period. The cheque payment date, as outlined in the billing-cheque payment table, is generally adhered to.

2. The Company will comply with legal requirements and international business standards, such as fair payment requirements.
3. The Accounting Department will review and follow up on payments to ensure they are made on time, maintaining strong relationships with business partners.
4. The Company does not use fraudulent methods or conceal any important information or facts that may harm creditors, nor does it seek unfair benefits from them.
5. Negotiations will be conducted to resolve issues reasonably and fairly in the event of conflicts or disputes.
6. The confidentiality of creditor information will be maintained, and any information that may cause damage will not be disclosed.

Biodiversity Management

The Company places importance on conducting business responsibly toward the environment and society in a sustainable manner, ensuring no negative impact on the ecosystem and biodiversity, which serves as a habitat for a variety of organisms, diverse in races, species, and ecosystems. The Company is committed to protecting biodiversity and has defined the values, goals, guidelines, and methods for measuring the effectiveness of its biodiversity management operations in the Announcement on the Statement of Intent on Biodiversity Management, No. BK 087/2565 (for more details, please visit <https://tpipolene.co.th/en/sustainability/biodiversity-management-en>)

Biodiversity Management Operations in 2024

1. Risk Assessment & Risk Areas

The Company has conducted a risk assessment of potential impacts on biodiversity in the areas where we operate, including plant construction, resource acquisition and use, and waste management. This assessment uses an Environmental Impact Assessment (EIA) method along with GIS mapping to identify high-risk areas, such as those near protected wildlife habitats, wetlands, or nature reserves. Additionally, the company monitors and assesses economic, social, and public satisfaction aspects in areas surrounding the plant by engaging an external firm to conduct an annual survey. This aims to identify impacts, provide recommendations for impact mitigation, and address community concerns.

2. Reduction of Impacts on Biodiversity

TPI Polene has set guidelines to reduce the impacts of its operations through various measures such as:

- Development of production processes that minimize the use of natural resources.
- Restoration of areas after project implementation to enhance biodiversity and maintain ecological balance.
- Utilization of environmentally friendly technologies and processes, such as wastewater treatment systems and reduction of greenhouse gas emissions.
- Sustainable use of resources: Efficient and sustainable use of natural resources is promoted to reduce biodiversity loss.
- Community Engagement: The Company collaborates with local communities to conserve and restore biodiversity through various activities and projects.

3. Promotion of Biodiversity and Future Plans

TPI Polene has developed a long-term biodiversity plan aimed at balancing business development with nature conservation, including:

- Reforestation and Degraded Area Restoration Project: Planting trees and restoring areas affected by operations to help absorb greenhouse gases released into the atmosphere. TPI Polene Group has been operating continuously since 1992 until now and will continue to do so to ensure the country has more forests to absorb greenhouse gases and create habitats for a variety of living organisms.
- Wastewater and waste management: Environmentally friendly technologies are used to treat wastewater and manage waste, reducing their impact on the ecosystem and biodiversity.

- Promotion of Organic Farming: The Company supports organic farming in the community to maintain soil quality and biodiversity in agricultural areas. This includes the use of organic fertilizers, soil conditioners, and innovative wood vinegar products, all of which are environmentally friendly and not harm the soil. In addition, TPIPL Group sells products related to livestock and fisheries, such as Synbiotic, which help build immunity and break down food scraps that cause foul odors, converting them into methane gas and reducing the breeding grounds for germs.
- Carbon Capture & Utilization/Storage (CCUS): The Company studies the technology of carbon capture, utilization, and storage by capturing carbon dioxide from tall smokestacks in power plants and storing it underground or beneath the ocean, preventing CO₂ from being released into the atmosphere. This is a plan for future investment if the current processes to reduce greenhouse gas emissions are insufficient and if the technology proves to be a worthwhile investment.
- The Environmental Improvement Project for Lines 1-3 aims to increase the efficiency of dust capture by using a Bag Filter or Dust Collector system to separate dust and small particles from the air or gas flowing through. It is highly efficient in capturing particles smaller than 2.5 microns, achieving an efficiency rate of more than 99.99%, compared to Electrostatic Precipitators, which capture particles smaller than 2.5 microns with an efficiency rate of more than 99.5%. This can reduce energy costs by Baht 11,400,974.11 per year, through a reduction in electricity usage of approximately 30,597,120 kWh annually.
- The Company collaborates with stakeholders in the supply chain to promote sourcing and using sustainable resource.

4. Collaboration with Local Communities

The organization has collaborated with local communities such as:

- Collaboration with nature conservation organizations to restore community forests.
- Supporting budgets and resources for implementing local conservation projects.
- Organizing activities to raise awareness in communities about the importance of biodiversity, such as organizing trainings, reforestation, and cleaning water sources.

5. Past Performance

- Reduced greenhouse gas emissions from operations by up to 17.74% from 2023.
- Restored degraded forest areas by planting 2,000 trees in key areas.
- Engaged over 2,300 households in nature conservation projects.
- Increasing Green Space: Forest and green areas were expanded in the operating area as part of the Tree Planting Project to Reduce Global Warming, enhancing biodiversity and maintaining ecological balance. In 2024, a total of 2,000 trees were planted at the TPI Cement Plant in Saraburi Province, creating habitats for various wildlife and plant species.
- Pollution Reduction: Through effective wastewater and waste management, pollution affecting biodiversity can be significantly reduced. In addition, promoting organic farming, encouraging the use of biotechnology, and reducing the use of chemicals in agriculture that cause soil erosion, as well as reducing the use of chemicals in livestock, contribute to the health and quality of life of both animals and humans as consumers.

- Awareness-Raising: Through various activities and projects, the Company raises awareness among communities and employees about the importance of conserving biodiversity.

6. Alignment with ESG principles

All of these operations are in line with ESG principles as follow: -

- Environment: Reduce impact on nature and promote biodiversity restoration
- Social: Build strong partnerships with communities surrounding the factory
- Governance: Have clear policies and measures for risk management and transparency



Statement of Intent on Biodiversity [2-23]

<https://tpipolene.co.th/en/sustainability/biodiversity-management-en>

Prioritizing and engaging with stakeholders [2-29]

The Company recognizes the importance of stakeholder engagement by analyzing stakeholders both inside and outside the organization, and which are associated with the value chain of the business, with the belief that good relationships are based on trust. The Company also recognizes that the opinions and feedback of stakeholders towards the organization are extremely valuable, and help us achieve our goals and become a sustainability developed and growing organization. Stakeholder management also help organizations respond effectively to the needs of stakeholders. This includes reducing the risk of damaging the image and the likelihood of business disruption.

TPI Polene Group has adhered to the principle of value creation, cooperation between the Company and its stakeholders, as well as improving channels and continuously sending stakeholder feedback to responsible departments. TPI Polene Group has divided the group of stakeholders to cover all dimensions inside and outside the organization as follows:

- | | |
|------------------------------|-----------------------------|
| 1) Shareholders / investors | 6) Governmental authorities |
| 2) Employees | 7) Community and society |
| 3) Suppliers and contractors | 8) Business competitors |
| 4) Customers and agents | 9) Mass media |
| 5) Creditors | |



Corporate Social Responsibility [2-23]

<https://www.tpipolene.co.th/en/sustainability/social-responsibility>

The communication and engagement patterns of stakeholders are different, which can be summarized as follows:

Stakeholders	Guidelines for engaging with stakeholders	Stakeholder needs/ expectations	The Company's response guidelines
1. Shareholders/ Investors	<ul style="list-style-type: none"> - Annual General Meeting of Shareholders - Giving shareholders the opportunity to have equal rights to attend the shareholders' meeting, such as questioning and voting. - Presentation of investment information through investor relations activities at least 4 times a year - Annual Report (56-1 One Report) - Provide channels for communication through media including websites, letters, emails, phones or others - Analyst meetings: 3 times a year - Annual Sustainability Report - Financial report 4 times per year - The Company's Whistleblowing Channel 	<ul style="list-style-type: none"> - Good Performance, share price and dividends are at an appropriate level. - Consistent business expansion - Disclose important information of the Company in a timely basis, transparent and reliable way through channels that are easily accessible to shareholders. - Provide shareholders equal rights to attend annual shareholders' meetings. - Organize activities to create and to keep relationship with shareholders - Conduct business with environmental, Society and Corporate Governance considerations, or ESG - Financial stability - Transparency - Risk management system - Enhancing business competitiveness and defining business direction. - Organizational risk management, both short-term and long-term 	<ul style="list-style-type: none"> - Sustainability Report - Proper risk mitigation - All shareholders are entitled and treated equally. - Manage the organization in accordance with the Company's vision and corporate governance principles with integrity, caution, free from personal conflicts of interest. - Clarify details about the shareholders' meeting as well as all information related to matters that require shareholders to make decisions at the meeting in advance. - Business Ethics - Innovation and technology management - Research and development to further top up the business operation - Have a strong policy of maintaining liquidity and financial stability - Reviewing and enhancing business efficiency to effectively address ever-changing situations. - Analyzing, monitoring, and preparing measures to manage organizational risks in the short term, as well as emerging risks expected to occur over the next 3-5 years. - Disclosing information in a transparent and consistent manner according to international standards - Providing shareholders with the opportunity to directly express their opinions and complaints to the Company.

Stakeholders	Guidelines for engaging with stakeholders	Stakeholder needs/ expectations	The Company's response guidelines
2. Employee	<ul style="list-style-type: none"> - Collect information from all channels, including complaints - In-house communication through channels such as Line Group, allowing senior executives to communicate with all employees via Line groups specific to related management, internal memo circulated to employees in each department, announcement in posters - Committee in the establishment - Committee on Safety, Occupational Health, and Working Environment - Sustainability Report/Annual Report (56-1 One Report) - Executives meet employees at the plant once a week. - The level of satisfaction and engagement of employees towards the organization is measured once a year. - Provide clear in-house communications through various channels such as notices to various agencies within the Company and Application Line. - Comment box on Website, e-mail, Facebook - Performance assessment 3 times a year - Providing various benefits and compensation, including fair working conditions - Ensuring occupational health and safety - Communication through various channels and online systems within the Company - Meetings between CEO and employees have been held weekly - Satisfaction and engagement survey is conducted annually - Whistleblowing channel is provided through the Company's website 	<ul style="list-style-type: none"> - Compensation Industry-aligned welfare - The organization has stability and progress in its work. - Developed potential - The organization has a good image. - Fair Evaluation System - Safety and quality of life at work - Allow comment - Equal Practice - Respect personal information - Respect human rights - Employees receive training appropriate to their positions, averaging 26.14 hours per person per year. - Statistics on accidents and illnesses in the organization have decreased. - Attracting and retaining the abilities of employees 	<ul style="list-style-type: none"> - Strict employment regulations and strict practices, including career progress without limiting gender, age, social sources class Ethnicity, religion, educational institutions, by policy on employment and working conditions are standard. - There is a fair evaluation system. - Provide feedback and feedback channels - Provide returns comment and opinions - Offer welfare and benefits comparable to other companies in the same industry. - Occupational health and safety system - The Company shall not hire expatriates, which include contractors and sub-contractors. - Comply with human rights requirements and respect personal information - Provide opportunities and support the further education of employees. - Provide training to develop potential and career path - Savings cooperative. - Respect human rights and personal information - Establishing channels for employees to directly express their opinions and complaints to management - Developing the potential of employees by using indicators that are clear and consistent with international assessment standards. - Improvements could include upgrading shuttle buses to air-conditioned ones, enhancing parking spaces for cars or motorcycles, upgrading residential areas, expanding and enhancing restroom facilities, installing additional lighting, and more.

Stakeholders	Guidelines for engaging with stakeholders	Stakeholder needs/ expectations	The Company's response guidelines
3. Suppliers and Contractors	<ul style="list-style-type: none"> - Complaints and communication channels such as websites, e-mails, phones, letters, etc. - Annual Supplier Meeting: once a year - Monthly meeting with suppliers - Supplier registration - The Company's media such as newsletters, magazines and social media - The Company's whistleblowing channels - Contact through the Company's website - Various relationship activities with suppliers are conducted to facilitate participation at least twice a year, enabling the exchange of opinions and the listening to suggestions. Contact channels include: Telephone: 02-285-5090, Webiste: www.tpipolene.co.th 	<ul style="list-style-type: none"> - Transparent, fair, non-discriminatory, corruption-free purchasing system - Creating long term relationships to grow together - Comply with the established agreements and do not exploit customers, pay on timely basis. - Respect human rights - Respect personal information - Payment on schedule - Occupational health and work safety - Conducting business with suppliers in compliance with the Code of Conduct of manufacturers supplying products, raw materials, and services. - Suppliers receive knowledge to develop technology and innovation of environmentally friendly products - Confidence and stability in doing business together 	<ul style="list-style-type: none"> - Comply with Supplier Code of Conduct - The Company will not engage with trade suppliers who deal with businesses that act against the law. - Support ESG knowledge to enhance trade partner operations to mitigate risk associated from operation and reputation. - Establish measures to operate suppliers, including the use of digital and online technologies for safety during the COVID-19 pandemic crisis. - There is a procurement system that is transparent, verifiable, strictly complies with trade terms and contracts made with suppliers. - Take into account the mutual benefits of trade suppliers and business equity. - Employees in the group must not claim benefits in the procurement. - Establishing Supplier Code of Conduct for supplying products, raw materials, and services - Conducting business responsibly in accordance with good corporate governance principles and policy, and Code of Conduct - Delivering products and services according to customer expectations, and providing channels for listening to customers' voices. - Implementing projects that support the development of suppliers' potential, such as building cooperation with suppliers to jointly develop new products and services, and organizing training to provide knowledge and practice skills on safety for suppliers, etc.

Stakeholders	Guidelines for engaging with stakeholders	Stakeholder needs/ expectations	The Company's response guidelines
4. Customers/ Agents	<ul style="list-style-type: none"> - Complaints through communication channels such as websites, e-mails, phones, letters, etc. - Visit Customers /sales representatives at the customers office at least 12 times a year - Customers participate in suggesting the use of the product. - Customer Service Center - Customer satisfaction survey once a year 	<ul style="list-style-type: none"> - Quality/safe products and services - Fair price. - Easy and convenient to purchase - Promotional campaigns. - Choose from a wide range of products - Customers receive products according to the standard and on time. - In case of problems which are not caused by the customer's fault, the damage can be claimed immediately. - Providing good before- and after-sales service - Delivery on time - Respect personal information - Respect human rights - Customers receive products with features that meet their needs. 	<ul style="list-style-type: none"> - Satisfy the needs of customers - Must not act in any way that is deceptive or oblivious to the quality of goods and services by producing safe products and services that are harmless for the health of consumers. - Create brand loyalty to products - Contains product information and application. - Systematic and secure storage of customer data and not misuse data - Set prices for products and services fairly - Provide representatives to be responsible for providing feedback, knowledge, products specification and services, as well as solutions and receive customer complaints. - Hold customer seminars to regularly educate information about products. - Respect human rights and personal information - Organize stucco art contests and social service events - The information that the customer suggests will be sent to the relevant departments to further develop the Company's products. - Delivering products and services according to customer expectations, and providing channels for listening to customers' voices. - Implementing projects that support the development of customers' potential, such as building cooperation with customers to jointly develop new products and services, etc.

Stakeholders	Guidelines for engaging with stakeholders	Stakeholder needs/ expectations	The Company's response guidelines
5. Creditor/ Bondholder/ Analysts/ Credit Rating Institute/ Insurance Companies	<ul style="list-style-type: none"> - Submit a quarterly financial statement report. - Annual Report/ Sustainability Report - Recommendations and complaints 	<ul style="list-style-type: none"> - Good Corporate Governance - Business Administration with transparency - Careful risk mitigation - Full and on-time payment - Good performance and the potential to pay off debts - Comply with terms and conditions in the loan agreements 	<ul style="list-style-type: none"> - Conduct business with transparency, auditable, under good corporate governance - Fully comply with the terms and conditions in loan agreements - Complete payment on timely basis - Provide complete financial information - Effective management, ensure confidence and maximum return on investment
6. Government Agencies	<ul style="list-style-type: none"> - Report business performance and operating performance to government authorities according to the period specified by the government, such as: <ol style="list-style-type: none"> 1. Report on the performance of professional work safety officers every 3 months 2. Report on compliance with the Company's EIA measures every 6 months - Monitoring of policies, regulations, government requirements at least once a month - Supporting activities and responding to government policies according to the government's period of time, such as providing vaccines and vaccinations to employees and contractors within the Company. - Connecting to the government sector's network. - Appropriately establishing and assigning a unit responsible for contacting and coordinating with government agencies 	<ul style="list-style-type: none"> - Conducting business with caution and strict adherence to the law. Additionally, actively participating in addressing and mitigating the impacts of climate change, targeting both international and national levels - Compliance with legal regulations, rules and policies of Supervisory Divisions - Social and environmental responsibility - Sustainable Coexistence - Having a good environmental management and safety system - Providing support and cooperation to government authorities - Concrete action to reduce climate change - Payment of taxes and other related fees - Enhance operational measures to achieve the Sustainable Development Goals (SDGs). 	<ul style="list-style-type: none"> - The use of waste as a renewable fuel for coal in cement production process to reduce greenhouse gases to comply with the government's environmental policy. - Conduct transparent business - Preparation of Sustainability Reports - Social and environmental responsibility - Sustainable community coexistence - Compliance and cooperation, supporting projects of government authorities - Appropriately coordinating with government agencies - Cooperating with government, private and non-profit organizations

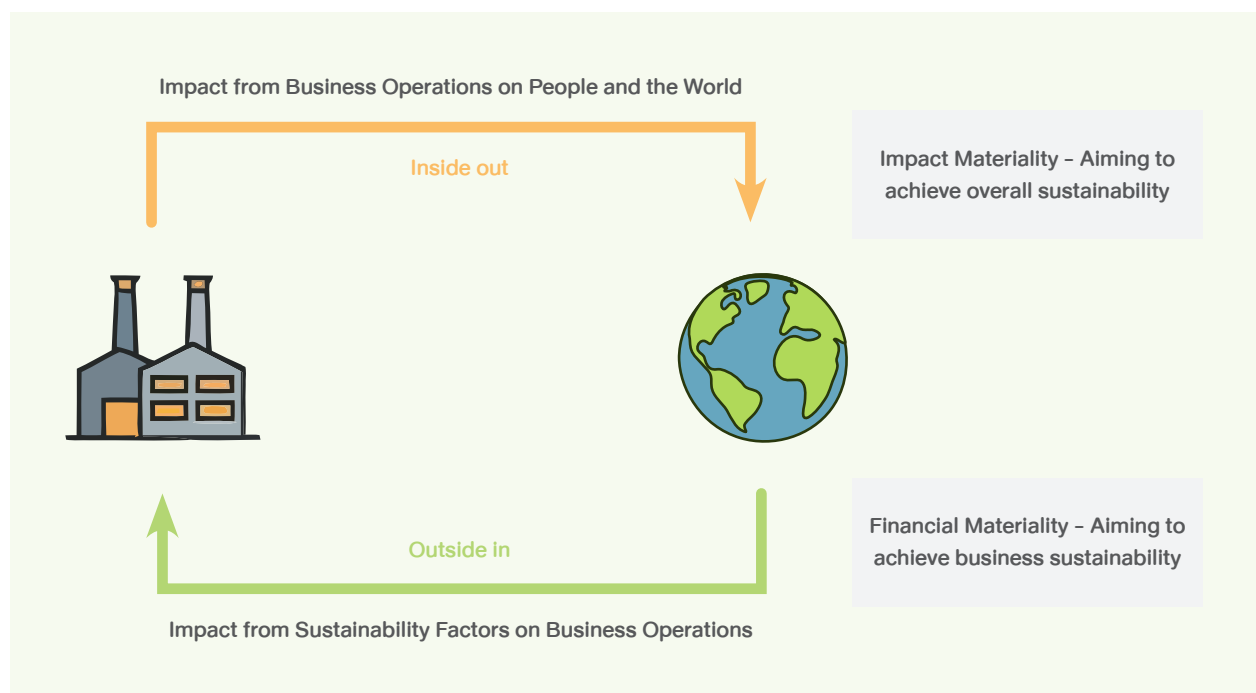
Stakeholders	Guidelines for engaging with stakeholders	Stakeholder needs/ expectations	The Company's response guidelines
7. Community & Society	<ul style="list-style-type: none"> - Complaints through communication channels such as websites, e-mails, phones, letters, etc. - Join community relations activities at least 28 times a month - Organize community relations at least twice a month - Mitigating environmental and social impacts that may arise from the Company's business operations - No violation of environmental laws - Generating income and career opportunities for local residents - Fostering good relationships between organizations - Conducting a community satisfaction survey once per year - The Company provides Whistleblowing channels. - The Company provides contact channel through its website : www.tpipolene.co.th 	<ul style="list-style-type: none"> - Develop surrounding communities - Preserving the surrounding environment - Create work and strengthen the economy for the community. - Operation of the establishment to ensure environmental safety and livelihoods - Support for community activities and ongoing participation - Educational Assistance - Focus on community feedback - Ensure clear, accurate, and prompt disclosure of company operations information, while actively listening to feedback, opinions, and complaints from communities, society, and non-profit organizations. 	<ul style="list-style-type: none"> - Community Visit and create acceptance - Support public activities that benefit the community - Educate and train employees at all levels as appropriate to create employees' awareness of the environment and community issues - Explore community needs and feedback - Organize mobile medical units to serve the community continuously for better quality of life. - Prepare a replacement forest plantation and rehabilitation project after mining - Promoting traditions in the community - Develop communities and encourage employment to improve the economy in the community - Provide budget for community development including education, career /job creation for the community - Consideration of impacts on communities, society, and the environment due to the Company's operations. - Disclosing news and information including the Company's operating results correctly and in a timely manner. - Transparent and verifiable operations and operation to for respond. - Communicating and disclosing complete, accurate, and timely information about the Company's operations, as well as listening to opinions and complaints from communities, society, non-profit organizations and mass media

Stakeholders	Guidelines for engaging with stakeholders	Stakeholder needs/ expectations	The Company's response guidelines
8. Business competitors	<ul style="list-style-type: none"> - Collect information from all channels such as websites, mail, phones, etc. - Become a member of the Thai Cement Producers Association (TCMA) and attend at least 4 meetings per year. 	<ul style="list-style-type: none"> - Create fair competition conditions together - Maintain market share 	<ul style="list-style-type: none"> - Conduct business within the rules of free and fair competition. - Do not slander to damage the reputation of the competitors. - Do not infringe intellectual property and copyrighted work of the competitors. - Not to violate identifiable information of the competitors - Behave in accordance with a good trade framework - Innovation and Technology Management
9. Mass Media	<ul style="list-style-type: none"> - Occasional business visits and activities for the community and society - Supporting media activities that align with the Company's policy, which involves communicating with mass media through various communication tools. - Supporting and participating in mass media activities. - Regularly disseminate information and news that is beneficial to the Company. - Regularly disseminating business information through a variety of channels, such as the Company's quarterly earnings announcement, business press conferences, etc. Participating in the Opportunity Day of the Stock Exchange of Thailand 	<ul style="list-style-type: none"> - To be a company that conducts business with a focus on sustainable ESG. 	<ul style="list-style-type: none"> - Conduct business with a focus on community, society, and environment by appropriately and consistently disclosing and disseminating information that is beneficial to society. - Monitoring news and information from the media as part of the strategic decision-making

Defining material issues

To determine the material issues and content of the Company's Sustainability Report 2024, the Company's top management conducted a study of key factors and impacts of the business and identified relevant material issues in the economic, environmental and social dimensions. In this regard, the Sustainability Report is prepared in accordance with the GRI Standards Global Reporting Initiative (GRI) to obtain material topics and boundaries and significant impacts that the Company should implement. The Company has a process for determining material issues with significant and impactful areas, which consists of the four key steps as follows: [3-1]

- (1) **Understand the organization's context:** The Sustainable Development Committee (ESG Committee) has conducted a review of relevant business activities and business relationships by considering the context of the Company in economic dimensions, environmental dimensions, people dimensions, and human rights dimensions which considers important information, including information from internal factors such as vision, mission, goals, policies, and directions of the Company's operations, as well as external factors such as the overall picture in the industry both nationally and internationally, interests and expectations of stakeholders in order to analyze those key data in the Sustainability Context.
- (2) **Identify actual and potential impacts Risks and Opportunities:** The Sustainable Development Committee (ESG Committee) and executives from pertinent departments who receive information, communicate with, or interact directly with stakeholders jointly consider and identify actual or potential impacts, the positive and negative impacts associated with operations, products, and services, as well as business relationships span economic, environmental, human rights, and people dimensions throughout the supply chain. Based on the principles of due diligence and the double materiality perspective, in accordance with the European Sustainability Reporting Standards (ESRS), the Company will search for and identify material sustainability issues it needs to address. This will involve combining the analysis of financial materiality resulting from economic, social, and environmental factors (Outside-in) with the analysis of impact materiality arising from the organization's effects on economic, social, and environmental aspects (Inside-out).



This raises sustainability issues that are most pertinent to the Company's business environment and takes into account all stakeholder groups when evaluating material issues to make sure the Company considers all concerns of all stakeholder groups in all aspects. The issues related to the Sustainability Context have been identified of the company in the amount of 28 issues to lead to the process of assessing significant impacts and prioritizing significant impacts for reporting in the next step.

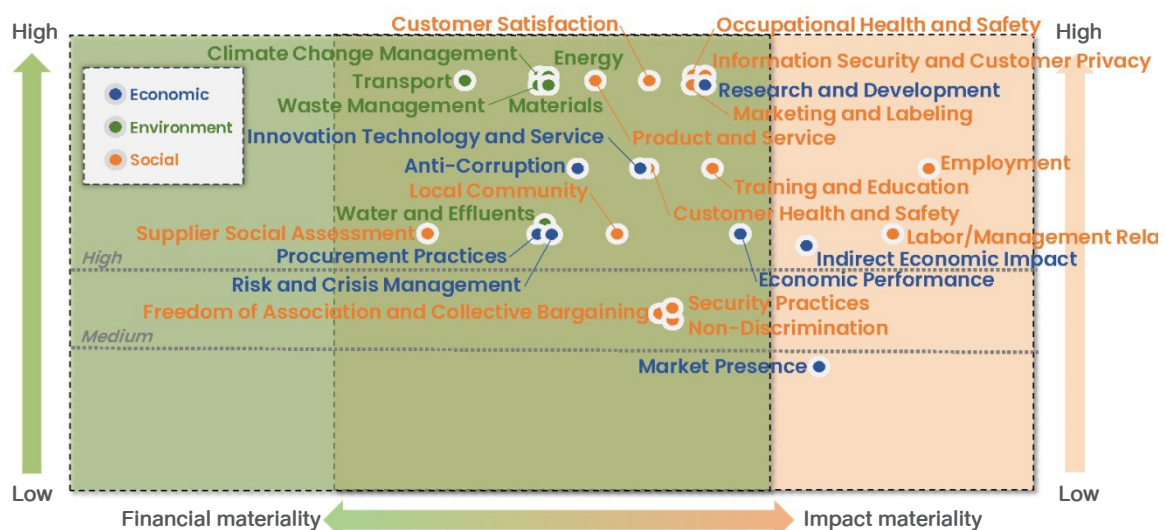
- (3) **Assess the significance of the impacts:** The Sustainable Development Committee (ESG Committee) and executives from relevant departments have jointly assessed the significant impacts of business operations on all stakeholders through a prioritization process (Prioritization). The criteria for assessing Impacts, Risks, and Opportunities (IROs) include the severity of the impact, likelihood, human rights considerations, the scale and scope of the impact, and the magnitude and likelihood of opportunities and risks. This assessment also takes into account the operational policy framework, and commitment to the Company's operations in that issue which brings about Material Topics for reporting.
- (4) **Prioritize the most significant impacts for reporting and conduct validation:** The Sustainable Development Committee (ESG Committee) brings important sustainability issues before senior management for their consideration and verification of the accuracy of Material Topics identified for reporting that are consistent with the business context, significant impacts resulting from the Company's business processes across the supply chain, as well as in line with the significant impacts on all groups of stakeholders.













Prioritize the most significant impacts





















High Significant Impact	Moderate Significant Impact	Low Significant Impact
<ul style="list-style-type: none"> Economic Performance Risk and Crisis Management Anti-Corruption Procurement Practices Indirect Economic Impacts Technology, Innovation and Service Research & Development Materials Energy Climate Change Management Waste Management Water and effluent Transportation Occupational Health and Safety Products & Services Local Communities Customer health and safety Customer satisfaction Training and education Employment Data security and customer privacy Labour Management and Labor Relations Social Supplier Assessment Product and service labeling 	<ul style="list-style-type: none"> Non-discrimination Freedom and collective bargaining Security Practices (Providing proper security knowledge to security guards) 	<ul style="list-style-type: none"> Role in the market (hiring local workers)

TPIPL Double Materiality Matrix










The Executive Board resolved to determine the Company's sustainability issues for the year 2024 with 24 issues, divided into 6 environmental aspects, 11 social aspects, and 7 economic and corporate aspects with details as follows [3-2]

Environmental aspect (6 issues)		The Company's sustainability issues	SDGs	Responsive Strategies
	Climate Change Management		     	<ol style="list-style-type: none"> 1. Developing towards a low-carbon society by setting carbon neutrality goals by using waste fuel to replace coal in all 4 cement plants to reduce cement production costs and increase competitiveness 2. Improve production efficiency to be highly efficient to save energy 3. Manage the organization according to the BCG policy at every stage of the value chain to achieve efficient use of resources and increase competitiveness in terms of production costs 4. Green manufacturing technology and innovation 5. Using process automation system to control production and loading and unloading of goods for efficiency with the emphasis on automatic operating systems, closely controlling production process from the control room to ensure standard product quality for production cost reduction
	Material Usage		 	
	Energy		   	
	Water and Effluents		 	
	Waste Management		     	<ol style="list-style-type: none"> 6. Efficient distribution process with strong distribution channels covering all areas throughout Thailand. There is a coordination to manage inventory efficiently, reduce management costs, including a fuel consumption management system by replacing fossil fuel trucks with 100% electric trucks to reduce greenhouse gas emissions and use electric trucks instead of fossil fuels to transport rocks on the mine front
	Logistics System			<ol style="list-style-type: none"> 7. with the emphasis on automatic operating systems, closely controlling production process from the control room to ensure standard product quality for production cost reduction 8. Construct rainwater collecting ponds to replace natural water sources, including recycling effluents for reuse and continuously monitoring water quality according to plans and EIA measures 9. Conserve concession areas by planting forests to improve scenery 10. Developing ready-mix concrete that can reduce greenhouse gas emissions by up to 5 - 10%

The Company's sustainability issues	SDGs	Responsive Strategies
Employment	   	<ol style="list-style-type: none"> 1. Comply with labor laws and labor relations and provide employment opportunities for people with disabilities to create a sustainable society 2. Respect human rights principles and personal information for employees, business partners, contractors as well as not support child labor in work that is hazardous to health or in an environment that is hazardous to health and safety or is a job that prohibited by law 3. Review and check cyber threat protection system regularly, including the development and improvement of the cyber protection system to keep up with the ever-evolving cyber threats, methods and severity of threats to information systems continuously 4. Create a good working environment with appropriate occupational health and safety. 5. Train and develop skills for employee to provide opportunities for advancement non-discrimination 6. Conduct is a survey of employees' satisfaction and commitment to the organization, a measure for receiving complaints, as well as conducting inspections, corrective outcomes, monitoring corrective actions, setting appropriate guidelines 7. Provide scholarships to employees' children 8. Evaluate customer satisfaction with the Company's products/services by using the information obtained from the assessment to develop and improve the Company's products/services/operating processes 9. Implementing Customer Relationship Management (CRM) software to facilitate managing relationships between the Company and its customers. This system aids in streamlining workflows and innovating new products according to systematic assessments of customer needs. It also enables the collection of various complaints, ensuring that every issue is tracked and addressed for improvement. This approach allows for swift responses to customer needs while also enhancing work efficiency across various departments of the Company. 10. Integration of CFP (Carbon Footprint of Products) applications for 21 products in 2024 11. Deliver standard quality products with complete label display 12. Conduct business with business partners in accordance with the Supplier Code of Conduct.
Labor/Management Relations		
Training and Education	   	
Occupational Health and Safety	  	
Customer Health and Safety		
Customer satisfaction		
Products & Services		
Data security and customer privacy		
Local Communities	 	
Product and service labeling		
Social Assessment of Business Partners	  	

Social aspect (11 issues)

Economic and Corporate Governance aspect (7 issues)

The Company's sustainability issues	SDGs	Responsive Strategies
Economic Performance	 	1. To comply with the related legal regulations. 2. Transparency with anti- corruption policy.
Risk and Crisis Management		3. Research and development to create innovations and technologies to develop products that meet customer needs and are environmentally friendly by emphasizing on the development of high value added products to meet customer needs.
Indirect Economic Impact	  	4. Seek investments that create high return on investment 5. All-round risk management, including risk associated with climate change 6. To enhance the product into a Specialty Polymer, the Company aims to refine production technology and machinery for increased flexibility. This specialized product boasts superior properties and command premium prices, with production limited to a select few manufacturers in Europe and America. Nevertheless, unlike other basic petrochemical products, there's no avenue for selling these production technologies. Hence, it's imperative for the Company to undertake research and development efforts, utilizing a specialized pilot reactor capable of operating at pressures up to 3,000 bar. This will facilitate the production of product samples for testing and market exploration before integrating the technology into production for future distribution.
Technology, Innovation and Service		
Anti-Corruption Policy		
Research & Development		
Procurement Practices		7. Collaboration with the Global Cement and Concrete Association (GCCA) to support the use of hydraulic cement as a substitute for Portland cement and promotes the production of green products through the use of alternative raw materials and fuels. This initiative aims to facilitate the transition of the cement and concrete industry toward carbon neutrality.

Note: There are a total of 24 issues that appear in the 2024 Sustainability Report, including 22 sustainability issues that are listed in the Company's Sustainability Issues for the 2024 report, and 2 additional issues, namely product and service labeling and social partner assessment.

05 Environmental Impact Management

Environmental Performance in 2024

In 2024, cement plants used 2.91 million tons of waste fuel to replace coal in cement production processes or 12% of the total fuel.

In 2024, TPIPL reduced greenhouse gas emissions both directly and indirectly, of 1.59 million tons CO₂e or decreased by 17.96% over 2023

In 2024, TPIPL sourced 9,548,906 cubic meters of external water, representing a 2.61% decrease compared to 2023

In 2024, Recycled and reused aggregate scrap 766,505 tons, accounting for 100%.

Investment projects for reducing environmental impact valued at Baht 1,638 million

Proportion of recycled water TPIPL 1,110,051 million cubic meters or 46.82% of total water consumption

Investment in EV Mining Trucks and EV Wheel Loaders to replace Combustion Engine Vehicles, aiming to reduce greenhouse gases emissions and PM 2.5 dust generation

TPIPL recycled waste 2,876.46 tons from production process, or 99.70% of total industrial waste.

Installation of Bag Filter dust collector to replace Electrostatic Precipitator (ESP) for enhanced PM 2.5 Filtration efficiency up to 99.99%

Manufacture of Green Products/ development of hydraulic mortar production technology 4.18 million tons to reduce carbon emissions (scope1) 0.34259 million tons CO₂e

Remark: (1) Only for TPI Polene Public Company Limited

Environmental Management [3-3]

TPI Polene Group places great importance on the efficient use of resources, given the limitations of natural resources and the impacts of climate change. We are committed to conducting business in alignment with the Circular Economy principles by focusing on research and development, the use of renewable energy, and systematic waste management to maximize resource utilization and minimize environmental impacts.

In addition, TPI Polene Group emphasizes environmental management through measures to reduce pollution, promote sustainable water management, cut greenhouse gas emissions, and develop green technologies. These efforts aim to minimize the impact on the ecosystem and create a balance between business, society, and the environment, ensuring long-term sustainability.

Management Approach

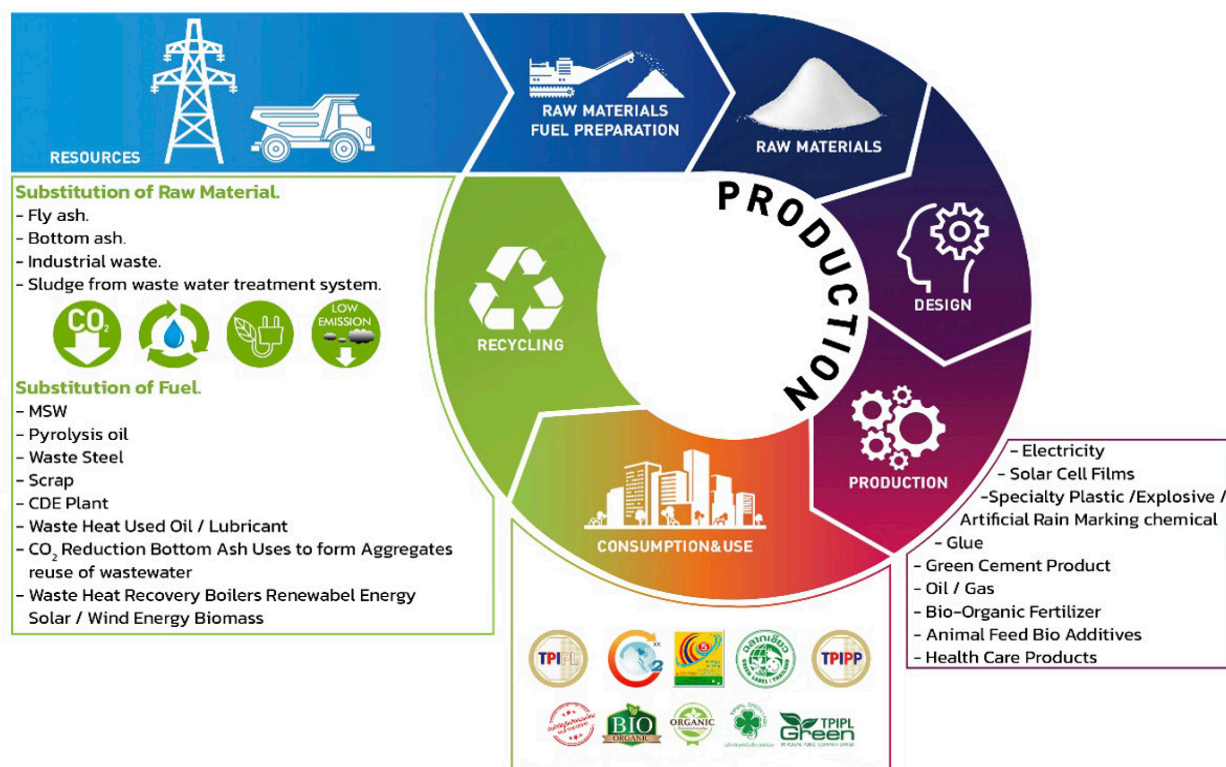
TPI Polene Group aims for sustainable development in order to create a balance in terms of economy, environment, and society under good corporate governance. The terms “Circular Economy,” “Green Economy,” and “Bio Economy” are used interchangeably to refer to the Bio-Circular-Green Economy (BCG), which is used at every stage of the value chain by using waste fuel instead of coal for cement production and power generation and aiming to run a clean renewable energy power plant by completely eliminating the use of coal. replacing the use of coal 100% in order to move towards a clean green industrial business to be Net Zero Greenhouse Gas Emission Producers and environmentally friendly.

Driving the Economy towards Sustainable Development (BCG)

<https://www.tpipolene.co.th/en/sustainability/bio-circular-green-economy-bcg>



TPI Polene Group Conducting its Business based on BCG and ESG Guidelines



TPI Polene Group has prioritized sustainability policies and business operations based on BCG and ESG guidelines, including carbon neutrality campaign, saving the world campaign and ZERO WASTE campaign throughout the Group's production processes. The use of hydraulic cement instead of Portland cement is actively encouraged and supported due to its lower proportion of clinker, resulting in reduced carbon dioxide emissions. Consequently, when hydraulic cement is utilized as a raw material for constructing green buildings according to LEED and TREES standards, it contributes to a decrease in greenhouse gases and mitigates global warming. Additionally, starting from 1 June 2023, TPI Polene Group has implemented a policy to manufacture products aimed at reducing greenhouse gas emissions. This involves increasing the production of Green Products such as Green Clinker, Green Cement, Green Fiber Cement, and Green Concrete Roof Tiles (Green CRT). These products utilize alternative raw materials, alternative fuels, and electricity sourced from renewable energy, thereby further reducing greenhouse gas emissions.

TPI Polene Group has taken every step in our business operations, from research and development, procurement of resources, raw materials and energy, and put them under circular systems by recycling and employing reuse methods and technologies to reduce environmental pollution. Our goal is to use highly efficient production processes in both resource consumption and environmental protection, with the key objective to manufacture green products that are environmentally friendly.

Consumers of such products, including sales, logistics systems and after sales services, under the circular economy, are part of our aim to create a green world.

Six material issues that are highly important in the Company's environment dimension in 2024 are as follows:

1. Climate Change Management
2. Materials
3. Logistics System
4. Energy
5. Water and effluent management
6. Waste Management

Climate Change Management [3-3]

Since cement production is the main business of the Company, in the production process, coal is used as fuel. As well as burning limestone into clinker, which is a major contributor to greenhouse gas emissions, the Company is committed to conducting business with a focus on reducing greenhouse gas emissions, which are major causes of climate change and global warming.

In 2024, TPI Polene Group has implemented a waste fuel production by using municipal waste to sort into alternative fuel instead of landfills 2.91 million tons of municipal waste, enable to reduce greenhouse gas emissions from landfills into the atmosphere. The amount reached 6.77 million tons of CO₂ equivalents.

The Company has a policy and vision to be an environmentally friendly cement producer with a focus on using energy and renewable fuels to replace fossil fuels. The Company also uses energy and resources to produce efficiently, as well as research and development of its products to reduce greenhouse gas emissions, which is in line with the government's policy to tackle climate change. This includes adapting to environmental measures. Climate change is likely to be more intense.

In addition, the Company has focused on driving climate change solutions and the transition to a low-carbon economy and society by integrating climate change management into the organizational structure from the Board of Directors level to the operator level. Climate risk management, as well as monitoring performance to meet set goals. The Board of Directors has assigned the Sustainability Development Committee and the Corporate Risk Management Committee to be responsible for climate change governance and to designate the performance of climate change targets as a measure of success at the organizational level to drive serious and concrete solutions to climate change.

Participation as a member of the Thailand Carbon Neutral Network (TCNN), the Low Carbon Industry Development Project and Commitment towards Carbon Neutrality

TPI Polene has become a member of the Thailand Carbon Neutral Network (TCNN), a collaborative platform that fosters partnerships among government agencies, the private sector, and local communities to enhance efforts in reducing greenhouse gas emissions in alignment with the global commitment under the Paris Agreement on climate change. Through its engagement with the TCNN, TPI Polene has declared its commitment to advancing toward a low-carbon society and achieving carbon neutrality by 2043 (B.E. 2586).

Since 2023 (B.E. 2566), TPI Polene has prepared its Carbon Footprint for Organization (CFO) report, which quantifies the organization's greenhouse gas emissions and removals. The organization underwent third-party verification and received "Reasonable Assurance" for ISO 14064-1 (Carbon Footprint Verification or CFV) from BSI Group (Thailand) Co., Ltd. for the year 2023 and initiating systematic emissions reduction efforts.

In 2024 (B.E. 2567), TPI Polene successfully completed the ISO 14064-1 verification once again, receiving "Reasonable Assurance" from the Management System Certification Institute (MASCI). The verification covers GHG quantification, reporting, and reduction, including requirements for the design, development, implementation, reporting, and verification of organizational GHG inventories and emission reductions.

In addition, the Company has participated in the Low Carbon Industry Development Project under the strategic BCG Model initiative toward Net Zero, driven by Kasetsart University and the Thailand Greenhouse Gas Management Organization (Public Organization). The company has established a policy to promote employee understanding of the carbon footprint concept, including organizing training sessions, collecting data for carbon footprint calculations, monitoring and evaluation, reporting, verification, and tracking both emissions and removals of greenhouse gases. These efforts aim to support continuous planning and implementation of greenhouse gas reduction initiatives within the organization, in alignment with international standards.

TPI Polene has developed a roadmap to achieve its organizational goals by assessing its capacity to reduce greenhouse gas emissions. This enables the Company to drive and formulate policies and strategic directions aimed at becoming a low-carbon society organization, with the ultimate goal of achieving carbon neutrality by 2043. This commitment reflects TPI Polene's determination to continuously improve operational efficiency across its group of businesses. The Company has outlined development plans in production structure, research and product development to foster innovation. Investments have been made to enhance production efficiency and adopt more environmentally friendly technologies as the followings:-

- Replacing coal with waste-derived fuel in cement production;
- Utilizing renewable energy sources such as solar and wind power;
- Transitioning to electric-powered machinery and transportation;
- Implementing ZERO WASTE strategies, especially within core manufacturing processes;
- Reducing greenhouse gas emissions through the use of hydraulic cement in place of ordinary Portland cement, effectively decreasing clinker use and CO² emissions;
- Upgrading air pollution control systems, particularly dust collection systems in cement plant stacks to improve emission performance.

Through these initiatives, TPI Polene is pursuing a low-carbon strategy to address climate-related risks and which contributes to the achievement of long-term greenhouse gas emission reduction goals.

Task Force on Climate-Related Financial Disclosures (TCFD/ IFRS S2) 2024



TPI Polene Group recognizes climate risk management as a significant sustainability concern for the organization and has announced the goal of achieving carbon neutrality by 2043. This ambition hinges on leveraging climate management data following the Task Force on Climate-related Financial Disclosures (TCFD/ IFRS S2) framework to formulate strategies and set goals for greenhouse gas reduction in both the short and long terms. Moreover, this data will guide investment and financial planning, reinforcing the organization's commitment to sustainability and environmental stewardship.

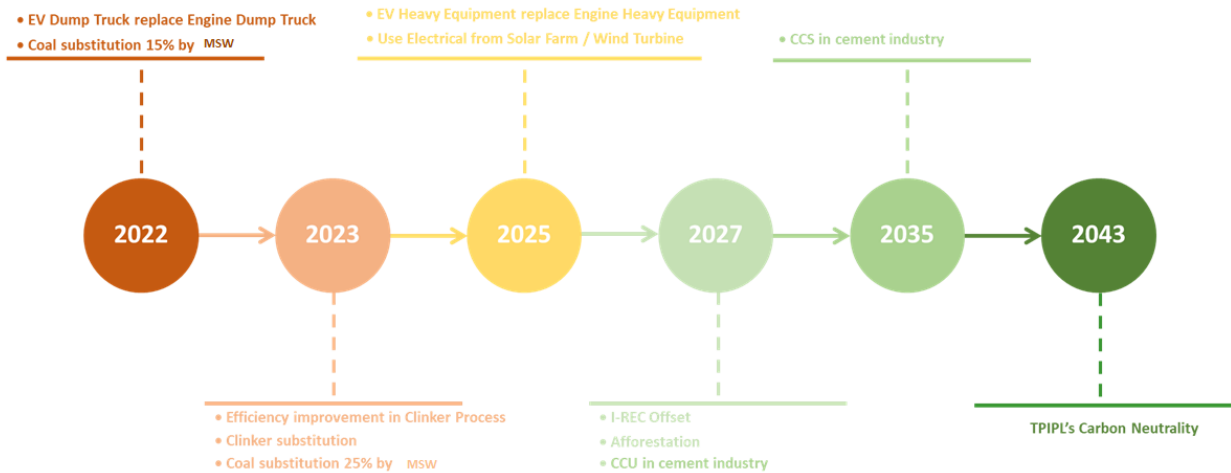
In 2024, the Company managed climate change, dividing it into four main components: Governance, Risk Management, Strategy, and Metrics and Targets, as a framework for disclosing climate management data.

The risk assessment revealed that physical risks, such as water shortages and floods, are classified as medium and low level, respectively. These risks do not pose significant troubles to the Company, as it can continuously assess the situation and implement appropriate measures to mitigate them.

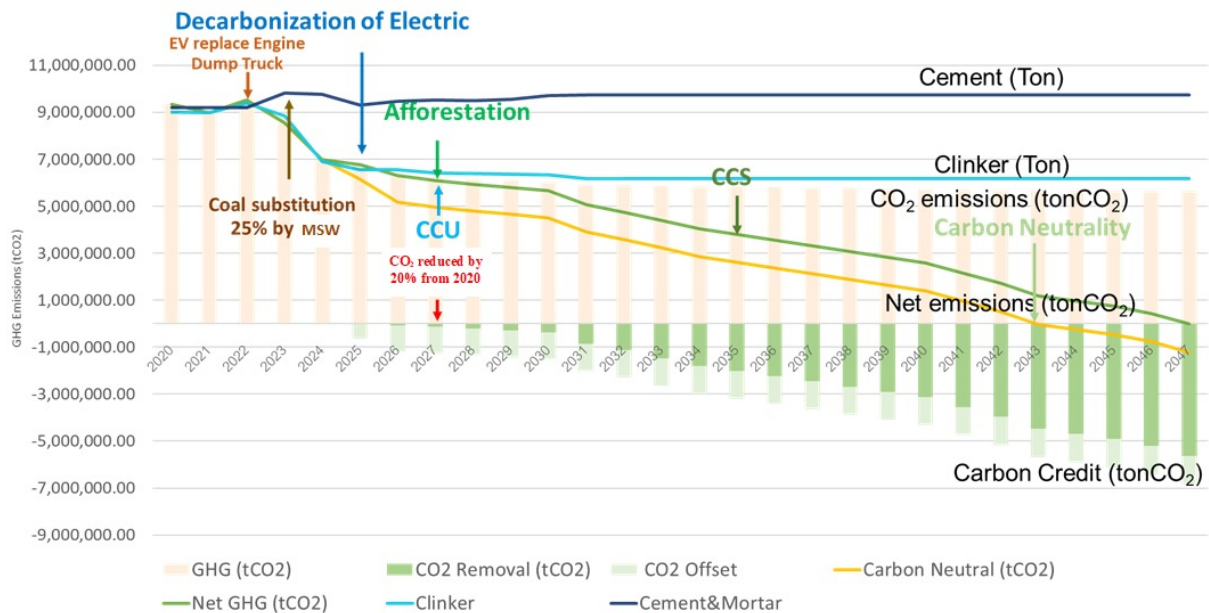
Risks related to legal factors or regulations for controlling greenhouse gas emissions will be addressed through mechanisms such as carbon tax collection and the use of a carbon tax as a tool to prevent trade through the Carbon Border Adjustment Mechanism (CBAM). The Company has supported the use of electric vehicles and clean energy, among other initiatives. All of these pose high risks to the business of producing cement from fossil fuels and cause low to moderate risk to the supply chain; however, they are considered opportunities for the business of producing cement from low-carbon energy sources.

The Company has assessed such risks, resulting in the utilization of capital to enhance production efficiency and improve technology to be more environmentally friendly. The improvements include using waste as fuel instead of coal in the cement production process and utilizing electricity from solar energy, wind energy, etc. Utilization of heavy machinery and electric-based trucks reduces the proportion of clinker used in cement production, favoring the production of Hydraulic Cement over Portland cement, Type 1. The Company employs a low-carbon strategy to address climate change risks, enabling it to achieve the goal of long-term reduction in greenhouse gas emissions.

TPIPL's (Cement) GHG Reduction Strategies



TPIPL's (Cement) 2043 Carbon Neutrality Pathway



Climate Change Goals

Strategy	Performance in 2024	Short-term Goals in 2027	Longt-term Goals in 2043
1. To establish the proportion of clean electricity usage	<ul style="list-style-type: none"> Electricity generated from renewable energy 3.96% 	<ul style="list-style-type: none"> To use electricity generated from 100% renewable energy. 	<ul style="list-style-type: none"> To use electricity generated from 100% renewable energy.
2. To Determine the proportion of fuel used in cement production.	<ul style="list-style-type: none"> Proportion of fossil fuel = 88.31% Proportion of renewable fuel = 11.69 % 	<ul style="list-style-type: none"> Proportion of fossil fuel = 75% Proportion of renewable fuel = 25% 	<ul style="list-style-type: none"> Proportion of fossil fuel = 75% Proportion of renewable fuel = 25%
3. To reduce the amount of greenhouse gases	<ul style="list-style-type: none"> Greenhouse gases for the amount of 7,263,478 tons of CO₂e The amount of greenhouse gas per ton of cement decreased by 6.11% compared to the base year of 2020. 	<ul style="list-style-type: none"> Greenhouse gases amount of 7,476,814.64 tons of CO₂e The amount of greenhouse gas per ton of cement decreased by 20% compared with the base year of 2020. 	<ul style="list-style-type: none"> Greenhouse gas content = 0 tons of CO₂e (carbon neutrality)
4. Manufacture of hydraulic cement to replace Portland cement	<ul style="list-style-type: none"> Proportion of hydraulic cement = 66.32 % Proportion of Portland cement = 33.68 % 	<ul style="list-style-type: none"> Proportion of hydraulic cement = 70 % Proportion of Portland cement = 30 % 	<ul style="list-style-type: none"> Proportion of hydraulic cement = 100 % (in 2040) Proportion of Portland cement = 0 %
5. Reduce the proportion of clinker used in cement production	<ul style="list-style-type: none"> To use 85% of clinker in cement production. 	<ul style="list-style-type: none"> Proportion of clinker use in cement production is less than 76%. 	<ul style="list-style-type: none"> Production of clinker used in cement production is less than 50 %
6. To increase greenhouse gas storage by planting forests and applying CCUS	<ul style="list-style-type: none"> The amount of greenhouse gas stored = 0 ton of CO₂e 	<ul style="list-style-type: none"> The amount of greenhouse gas stored is 429,864.65 tons of CO₂e 	<ul style="list-style-type: none"> The amount of greenhouse gas stored is 7,070,513.12 tons of CO₂e
7. To disclose information	<ul style="list-style-type: none"> Sustainability Report according to GRI Standards 56-1 One Report 	<ul style="list-style-type: none"> Sustainability Report according to GRI Standard 56-1 One Report Participating in the sustainability assessment of organization both domestically and internationally 	<ul style="list-style-type: none"> Sustainability Report according to GRI Standards or other related standards 56-1 One Report Carbon Disclosure Project (CDP) Participating in the sustainability assessment of organization both domestically and internationally

Task Force on Climate-Related Financial Disclosures (TCFD)

<https://www.tpipolene.co.th/en/sustainability/tcfd-report-en>

TPI Polene Group's Carbon Neutrality Road Map

TPI Polene Group has laid out a road map towards carbon neutrality by 2043 through various businesses within the group as follows:-

1. Saving in cement & binders: Developing new innovations to reduce the use of clinker, increase the use of substitute materials, promote the use of low carbon cement (Low Carbon Cement) such as the development of hydraulic cement to be used as a replacement for portland cement type 1. The increased use of hydraulic cement can significantly reduce greenhouse conditions and contribute to sustainable development in the cement industry and the construction industry in the future. The Company aims to reduce the proportion of clinker used in cement production to below 76% by 2027.
2. Savings in clinker production: By reducing the use of fossil fuels in burning clinker, increasing the use of biomass fuel from industrial waste or municipal waste. It has been in operation since 2021 and will be completed in 2023. In 2025, the Company aims to utilize 500,000 tons of fuel derived from industrial waste as alternative energy.
3. RE100 — Electricity Energy use Renewable Energy 100%: TPI Polene Group has planned and implemented 100% renewable fuel power generation as follows:
 - a. Using of Waste heat recovery to generate electricity
 - b. Using biomass fuel, fuel from industrial waste or municipal waste instead of using coal fuel (Coal Replacement by Renewable Fuel of Power Plant) with the following projects:
 - i. Converting to use municipal waste-based fuel to replace coal-fired fuel in Boiler B6, which produces steam for power plants utilizing steam pressure at the level of 55 bars, using alternative fuel derived from municipal waste. This initiative has been in operation since 2023 and is currently constructing a boiler with a pressure of 132 bars to produce steam for a 150 megawatt power plant, with waste fuel replacing coal. The project is scheduled for gradual completion, transitioning to exclusively using waste fuel instead of coal by 2025.
 - ii. A plan to convert the use of coal to biomass fuel in 6 MW power plants by 2023.
- c. A power plant with solar panels installed on the ground (Solar Farm) is a power plant that uses solar energy without raw material costs as the main energy and uses durable and long-life solar panels to generate electricity. In 2024, it began producing 61.8 MW of electricity.
- d. Solar Roof Installation Project is a solar power generation system installed on the roof using Solar Module installed on the roof of the building in the factory to absorb solar energy to generate moving electric charges in response to the electric field inside the cell and generate direct current before sending it to the Inverter to change from direct current to alternating current and then use the electrical energy to be used further. In 2024, it began producing 5.1 MW of electricity.
- e. The use of electricity from completely renewable clean energy (RE100 — Electricity Energy use Renewable Energy 100%) by producing electricity for use within TPI Polene Group in the production process of cement and the purchase of REC (Renewable Energy Certificate) to enable cement production to use 100% renewable energy.
4. EV Green Mining: TPI Polene Group has switched from limestone trucks that use gasoline engines and various types of heavy machinery for mining, totaling 113 vehicles, to electric-powered alternatives for transporting limestone to the cement factory. By 2024, 70% of the units have been converted to electric power, with plans for full conversion to 100% electric by 2025.
5. Energy efficiency program : Projects to reduce total energy consumption are as follows:
 - a. Regenerative Downhill Conveyor is a project to generate electricity from raw material conveyor belts by changing the transportation method from using trucks to conveying by belt instead, thus saving energy and reducing transportation and maintenance costs. At the same time, the energy from the conveyor belt that transports limestone down from the quarry at the top is characteristic of the Downhill Conveyor to generate electricity back to use. This allows the Company to reduce

- energy costs from using diesel fuel to transport raw materials and can generate electricity back to the electricity supply at the same time.
- b. Polytrack Grate is a new aeration technology with reduced pressure that provides consistent aeration with low energy consumption (Reduce at least 1 kWh/ton of clinker). This results in energy savings and can also reduce wear and tear on the machine due to the reduced air velocity through the vents, thus reducing maintenance costs. Currently, the Company can reduce energy costs from using coal and can also save electricity.
 - c. The project to implement artificial intelligence (AI) technology in the kiln control system, starting with KILN 3, aims to enhance production efficiency. Previously, operators manually input the amount of fuel used in production, linking fuel input to the number of raw materials used. This change has led to a reduction in heat energy consumption by 23.16 kcal per 1 kg of clinker production. The project is expected to be completed by mid-2025.
 - d. The Environmental Improvement Project for Lines 1-3 aims to increase the efficiency of dust capture by using a Bag Filter or Dust Collector system to separate dust and small particles from the air or gas flowing through. It is highly efficient in capturing particles smaller than 2.5 microns, achieving an efficiency rate of more than 99.99%, compared to Electrostatic Precipitators, which capture particles smaller than 2.5 microns with an efficiency rate of more than 99.5%. This can reduce energy costs by Baht 11,400,974.11 per year, through a reduction in electricity usage of approximately 30,597,120 kWh annually.
6. **Recycle Raw Materials:** CDE Plant is installed as a washing recycle plant by taking dirt and stone fragments from mining to be washed until it becomes a stone that can be used as a raw material for cement production. This enables the Company to reduce the amount of mining waste and reduce the cost of raw material production. It is a cycle to bring the remaining resources from production to be useful.
 7. **Afforestation:** To help absorb greenhouse gases released into the atmosphere. TPI Polene Group has been operating continuously since 1992 until now and will continue to do so that the country has more forests to absorb greenhouse gases.
 8. **Carbon capture & utilization/ storage (CCUS):** By studying the technology of capture, utilization, and storage of carbon dioxide by capturing carbon dioxide from high-pitched smokestacks at power plants and storing it underground or under the ocean without releasing CO₂ into the atmosphere. It is a plan to make further investments in the future if existing greenhouse gas emissions reduction processes are insufficient and the technology is worth investing in in the future.
 9. 400-meter shale conveyor belt from compound mixing bed line 4 linked to shale mixing bed line 1 to reduce transportation costs, transported by trucks and can also reduce PM2.5 dust and greenhouse gases, and installation of 1,000 meters shale conveyor belt between shale crusher and mixing bed to help increase the amount of shale conveying into the factory more efficiently, which reduces the cost of transportation by truck from the mine, reduces PM2.5 dust and reduces greenhouse gases.
 10. Electric locomotive modification project 2 heads to transport merchandises by rail from Saraburi plant to Chiang Rak Noi station. This reduces the use of fossil fuels and reduces greenhouse gas emissions. It is expected to be completed in 2025.
- In 2024, TPI Polene Group implemented a waste fuel production project for the general benefit of the country. The project involves segregating community waste to create alternative fuel instead of sending it to landfills. The project processed more than 2.91 million tons of waste, enabling the country to reduce greenhouse gas emissions from landfills by up to 6.77 million tons of CO₂ equivalent.

Target	Action Plan	Key Performance in 2024	Guidelines for improving future operations
<ul style="list-style-type: none"> - Operate the business under the concept of zero waste by utilizing waste products from consumption and utilizing the use of renewable waste products for efficient use of resources at the highest minimize waste generated using the principle of 3R (Reduce, Reuse, Recycle) without discharge of waste, wastewater. used oil, chemicals, and waste into the ground. - Reuse waste fuel to replace coal by 25% in clinker production by 2024. 	<ul style="list-style-type: none"> - Implement Zero Waste to Landfill policy by disposal of waste without harmful the environment with the method of co-fired together with the main fuel at the rotary kiln at temperatures above 1,800 degrees Celsius in the closed system, it is considered a modern and technological advancement and environmentally friendly compared to the conventional landfill waste that causes problems for communities and the environment. - Climate change risk and opportunity management are one Key issue are identified, assessed, and managed climate change risks and opportunities in accordance with the procedures set out in the "Risk Management Handbook". - Participate in projects/activities to reduce greenhouse gases, such as attaining registration and receiving carbon credits (T-VER), participating in the Low Emission Support Scheme (LESS), the registration of carbon footprint labels to demonstrate that the product has passed the carbon footprint assessment and can reduce greenhouse gas emissions according to the specified criteria, etc. 	<ul style="list-style-type: none"> - The amount of waste fuel used to replace the use of coal in the clinker production process is waste fuel 12% in 2024, resulting in a reduction of greenhouse gas emissions by 0.156 million tons of carbon dioxide or equivalent. - Production of hydraulic cement of 4.18 mil.tons can help reduce greenhouse gas emissions (scope1) by 0.34259 million tons of carbon dioxide equivalent - Since in 2024, cement plants have gradually installed to increase dust capture efficiency, which will be completed in June 2025, the average rate of using waste fuel instead of coal in 2024 has not yet reached the target of 25%. - In 2024, customers have used 3,023,613.64 tons of hydraulic cement, reducing carbon emissions (scope 3) by 0.2479 million tons of carbon dioxide equivalent. - In 2024, the Company used 3.96% of its electricity from renewable energy, an increase compared to 2023. 	<ul style="list-style-type: none"> - A plan to apply for CFP (Carbon Footprint of Product) of 10 products in 2025. - Use clean electricity from TPIPP which will be RE100 in June 2025. - Use electric-powered trucks instead of fossil fuel-powered trucks for limestone transportation in the quarry. - Cement Production Efficiency Enhancement Project, which involves separate limestone grinding to reduce clinker usage in cement production, is expected to be completed in May 2025 and will enable the Company to reduce greenhouse gas emissions by 516,815 tCO₂ e/year.

Target	Action Plan	Key Performance in 2024	Guidelines for improving future operations
	<ul style="list-style-type: none"> - Increase energy efficiency with tree planting and forest restoration, such as the installation of raw material conveyor belts from the site-A (Regenerative downhill conveyor) to the cement plant's shale crushers, and the installation of raw material conveyor belts and mobile crusher at the mine, which crush limestone and shale from the front of the mine, delivered directly into the plant through a replacement conveyor belt instead of transport by truck, reducing the use of diesel fuel. It can also generate electricity, and fiber cement plants that do not use asbestos are environmentally friendly, wood substitutes and reduce deforestation. - Cost-effective use of natural resources, continuously create new innovations both production and products, such as the classification plant project, by removing scraps from aggregate production process, which cannot be utilized through the recycle process to be used as raw materials for the production of cement. The development of TPI 299 (hydraulic cement) production technology to replace Portland cement, reducing greenhouse gas emissions by 10-15%. - Improves the efficiency of Electrostatic Precipitators systems at the Clinker Cooler - The measurement of atmospheric dust up to 2.5 microns is scheduled for 8 stations around the project area for a period of 6 years consecutive (2019-2024) by external environmental consulting firm (Third Party) - Install 5 permanent air quality monitoring stations to monitor air quality in the atmosphere around the plant stations and conduct additional 2 stations for atmospheric air quality monitoring at Mauk Lek Wittaya School Station and Mittraphap District Administrative Station, which has continuously implemented every year.- 	<ul style="list-style-type: none"> - Air quality measurements showed that the air quality, noise and lighting were within the normal range as required by law and there were no cases of chemical spills from business operations. - Received CFP (Carbon Footprint of Product) registration of 21 cement products in 2024 - Improving the efficiency of Grate Cooler lines 1 and 2 by designing and installing a new horse shoe from the original static grate plate. Clogging the air holes blown from the underside of the grate plate by adjusting the inclination to 14 degrees, creating a more uniform movement of the clinker. There is no clinker residue, adding air vents to better heat transfer and can be effectively circulated in the furnace, reducing heat consumption in clinker production, reducing carbon emissions (scope 1) by 40,010 tons of CO₂ e per year. - The Company has been certified with the Carbon Footprint of Circular Economy Product (CE-CFP) and the Carbon Footprint Reduction (CFR) label for 197 mixed cement products. 	

Unit: Tons of carbon dioxide equivalents

greenhouse gas emissions	Cement Business				LDPE/EVA Plants				FCB Plants	
	2022	2023*	2024*		2022	2023*	2024*		2023*	2024*
Significant greenhouse gas emissions within the scope of operational control.										
Direct Greenhouse gas emissions Scope 1	8,092,914.00	7,063,432.14	5,489,725.37		3,942.92	3,038.57	2,292.77		138,159.92	137,268.12
Indirect Greenhouse gas emissions Scope 2	1,206,472.00	857,249.70	887,955.98		103,577.43	85,933.23	83,619.49		9,328.93	13,867.63
Total GHG emissions (Scope 1 + 2)	9,299,386.00	7,920,681.84	6,377,681.35		107,520.35	88,971.80	85,912.26		147,488.85	151,135.75
Other indirect greenhouse gas emissions (Scope 3) :										
Category 1: Purchased goods and services	40.24	42.51	N/A		303,137.36	261,752.64	258,729.43		38,825.49	30,347.83
Category 2: Capital goods	N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A
Category 3: Fuel- and energy-related activities (not included in Scopes 1 or 2)	154,695.07	139,528.07	111,424.53		N/A	50.25	37.99		8,947.71	9,295.44
Category 4: Upstream transportation and distribution	68,727.84	33,392.77	26,794.64		322.52	N/A	N/A		3,224.45	3,008.61
Category 5: Waste generated in operations	N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A
Category 6: Business travel	N/A	N/A	N/A		302.52	N/A	N/A		N/A	N/A
Category 7: Employee commuting	N/A	4.45	55.06		N/A	N/A	N/A		N/A	N/A
Category 8: Upstream leased assets	N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A
Category 9: Downstream transportation and distribution	N/A	210,770.11	209,053.39		1,175.99	N/A	N/A		N/A	N/A
Category 10: Processing of sold products	N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A
Category 11: Use of sold products	N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A
Category 12: End-of-life treatment of sold products	N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A

Unit: Tons of carbon dioxide equivalents

greenhouse gas emissions	Cement Business			LDPE/EVA Plants			FCB Plants	
	2022	2023*	2024*	2022	2023*	2024*	2023*	2024*
Significant greenhouse gas emissions within the scope of operational control.								
Category 13: Downstream leased assets	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Category 14: Franchises	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Category 15: Investments	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	9,522,849.15	8,304,377.24	6,725,008.97	412,435.44	350,774.69	344,679.68	198,486.50	193,787.63
Concentration of greenhouse gas emissions per unit (per ton of output) (tCO ₂ /ton)	1.0112	0.9374	0.9743	2.6850	2.443036	2.513309	0.6074627	0.57261251

Remark: * Greenhouse Gas Emissions Report of TPI Polene Public Company Limited was prepared in accordance with the CFO-TGO standard and ISO 14064-1:2018. The report was verified at a reasonable level of assurance by Management System Certification Institute (Thailand).

Apart from this, the Company has also given importance to compliance with environmental laws, especially air pollution management. The Company continuously monitors waste emissions and monitors the surrounding air quality of several areas in the vicinity of the plant, monitoring and controlling nitrogen dioxide (NO₂) and sulfur dioxide (SO₂) levels in each combustion process, and controlling the temperature and fuel to air ratio during the combustion process to maintain the emission level within the specified limits.

Table of emission levels of Sulfur dioxide (SO₂) and Nitrogen oxide (NO₂) of the Company compared with World Bank's emission standards and requirements under Thai legal regulations [305-7]

(Unit: mg/m³ normal)

	Sulfur dioxide (SO ₂)	Nitrogen oxide (NO ₂)
TPI Polene	30.0	120.0
World Bank Emissions Standards	< 230.0	< 510.0
Requirements under Thai legal regulations	< 320.0	< 350.0

The Company's Significant Air Emissions [305-7]

(Unit: ton)

Significant Air Emissions (By Type)	2022	2023	2024
NO ₂	9,095	3,658	1,210
SO ₂	91	91	45
Persistent Organic Pollutants (POP)	-	-	-
Volatile Organic Compounds (VOC)	-	-	-
Hazardous Air Pollutants (HAP)	-	-	-
Particulate Matter (PM)	708	233	112

Note :

Dust Measurement Method : Isokinetic (method5) — Emission calculations are based on the Pollution Emission Calculation Manual using measurement data from the Pollution Control Department.

SO₂ Measurement Method : Isokinetic (method6) — Emission calculations are based on the Pollution Emission Calculation Manual using measurement data from the Pollution Control Department.

NO₂ Measurement Method : Isokinetic (Method 7) — Emission calculations are based on the Pollution Emission Calculation Manual using measurement data from the Pollution Control Department.

Target to Reduce Non-greenhouse Gas Air Pollutants (SO_x and NO_x) Emissions per Unit of Production

Short-term Goals within 1-5 years	Long-term Goals, not less than 5 years
<ul style="list-style-type: none"> Reduce air pollution emissions per production unit to no more than 0.00112 ton/ton Clinker in 2024 and 0.00100 Ton/Ton Clinker in 2025 Reduce non-greenhouse gas air pollution emissions per production unit to no more than 0.00040 Ton/Ton Clinker in 2024 and 0.00020 ton/ton Clinker in 2025 	<ul style="list-style-type: none"> Reduce air pollution emissions per production unit to no more than 0.00090 ton/ton Clinker by 2030 Reduce non-greenhouse gas air pollution emissions per production unit to no more than 0.00015 ton/ton Clinker by 2030

Table: GHG emission intensity of Cement Plant [305-4]

Activity	Unit	2022	2023	2024
GHG (1)*	TonCO ₂ e	9,522,849.15	8,304,377.24	6,725,008.97
Non greenhouse gases pollution (2)**	Ton	9,894	134.64	51.36
Cement Production Lines (3)	Ton	9,417,186	8,858,875.22	6,902,654.32
Proportion (1)/(3)	TonCO ₂ / Ton Clinker	1.0112	0.9374	0.9743
Proportion (2)/(3)	Ton/ Ton Clinker	0.00105	0.000015198	0.00000744

Note: * Calculated according to “Requirements for Calculating and Reporting Carbon Footprint of Organizations” by Thailand Greenhouse Gas Management Organization (TGO) and Carbon footprint is verified by Management System Certification Institute (Thailand), Foundation for Industrial Development in compliance with ISO14064-1: 2018 and CFO-TGO

** Non-greenhouse gases contain SO_x and NO_x.

Under the above-mentioned environmental management guidelines, the Company strictly follows environmental legal regulations; the Environmental Impact Assessment (EIA) and Environmental Health Impact Assessment (EHIA) are prepared for the complete implementation of the Company’s projects. The results of environmental compliance are reported in compliance with EIA and EHIA reports to related government authorities and communities. Environmental measurements and assessments are carried out in accordance with the plan, as well as delivering environmental compliance reports to related government authorities and communities in full in accordance with the specified time.

In addition, the Company does not discharge waste, wastewater, used oil, chemicals and other contaminants are not released into the ground, which will cause land degradation, according to the announcement of the Ministry of Industry regarding Control of soil and groundwater contamination within the factory premises, B.E. 2559 (2016) that the Company is required to install observation wells to monitor soil quality every three years. In this regard, the Company monitoring contaminants TPH (C5-C8), TPH(C8-C16), TPH(C16-C35). The results of the analysis passed the specified benchmarks. In the past up to present (2024), and the Company has had no violations of environmental laws and regulations. [2-27]

Environmentally Friendly Products



The Company has a policy to support green products that are environmentally friendly by creating goods and services that meet consumer needs, including minimizing the use of natural resources and emissions over the course of their life cycles to lessen the impact on future generations.

The Company has brought new technologies or innovations into the process of developing products and services for the group of green products that are friendly to the environment. In addition, the production process of the Company's products and services must be controlled in every process to meet standards such as Quality Management System Standards (ISO 9001:2015), Environmental Management System Standards (ISO 14001:2015), Occupational Health and Safety Management System (ISO 45001:2018), and Energy Management System Standards (ISO50001:2011), etc. in order to provide the Company's products and services with quality, safety, environmental friendliness, and to meet consumer needs as follows:

1. Hydraulic cement, global warming cement, TPI 299, which is environmentally friendly and reduces greenhouse gases. The use of hydraulic cement as a raw material in the production of ready-mixed concrete or low-heat concrete helps reduce heat accumulation in large concrete structures and increases the durability of the concrete to be able to

withstand various environmental conditions well. It is also a product for green building construction according to LEED and TREES standards. In 2024, the Company launched a project to enhance the efficiency of cement production by separating the grinding process of limestone to reduce the proportion of clinker used. The project, which began in December 2024 with an investment budget of Baht 64 million, is expected to be completed by May 2025. It will enable the Company to reduce greenhouse gas emissions by 516,815 tCO₂e per year.

2. Plant-related products such as bio-organic fertilizers and soil conditioners, etc., are non-toxic and free of heavy metals that are harmful to humans and the environment, allowing vegetables to be grown without the use of pesticides and sell products related to livestock and fisheries such as yellow powder and Bio-San etc.

3. Products for occupational health like Bio Knox, Microme Knox Solution, mouthwash, vegetable washing liquid, Provita drink, liquid soap, TPIPL drinking water, dishwashing liquid, stain remover, and Bio-San, among others, for which the company was recognized as the "Outstanding Product of the Year 2022" in the category of goods promoting bio economy and hygiene care by the Foundation for Thai Society.

4. Animal products, including biological enhancers for livestock and fisheries, etc., are useful and safe for animals. It can be applied to all kinds of poultry, terrestrial animals, and aquatic animals including pigs, shrimps, fish, chickens, and ducks. Animals' digestion and absorption are aided, and their immunity is strengthened, resulting in healthier, faster-growing animals that gain weight and use less antibiotics.

5. Products that reduce the environmental impact caused during use and are green industries, such as low emissions during use, reducing the use of consumables, reducing energy consumption and reduce the use of unnecessary parts, environmentally friendly, and help reduce deforestation, including fiber cement (ceiling boards, walls, floors, wood substitute materials and digital boards, door products, and roof tiles, etc.)

6. Solar panel production using technologies in various processes, linked from start to finish in order to increase growth and profitability, while aiming to develop a green society for the future and the use of Ethylene released from the EVA resin production process to produce water glue, etc.

Implementing each stage of product development reduces environmental impacts while benefitting businesses, communities, and the environment, leading to sustainable development. In 2024, the revenue from the sale of green products that are environmentally friendly was Baht 23,711 million, accounting for 66.29% of total sales revenue. Over the past 3 years, revenue from sales of biological products and green products has been increasing steadily. This illustrates that the more the benefits is added to the environment, making the market for bio-organic products worthwhile to grow because they can meet the needs of consumers in terms of safety and savings. Sales revenue of biological products and green products can be summarized as follows:-

Unit: million Baht

Product Type	2022	2023	2024
Biological Products	117.46	95.21	71.03
Green Products	11,722.60	28,289	23,711

Material Usage [3-3]

Cement plants are considered to be an industry where raw materials such as limestone, and fuel such as coal and residual fuel are consumed in large quantities and these raw materials are from natural resources which are being depleted. In addition, the acquisition of such raw materials and fuels contributes to the direct and indirect impact on forest areas, communities, ecosystems, and other environments. Therefore, the efficient and cost-effective use of materials and raw materials in the production process is important to reduce environmental impacts as well as support the use of sustainable natural resources.

Operational Goals

Short-term Goals within 1-5 years	Long-term Goals more than 5 years
<ul style="list-style-type: none"> Use waste fuel to replace coal by 25% in the clinker production process by 2025. Reuse leftover crushed stone from the construction stone production process to 100%. Use 2,300,000 tons/year of recycled and renewable materials by 2024 and 2,900,000 tons/year by 2025. 	<ul style="list-style-type: none"> Replace fossil fuels with renewable fuels by more than 30% by 2030. Use more than 3,000,000 tons/year of recycled and renewable materials by 2030.

Target	Action Plan	Key Performance in 2024	Guidelines for improving future operations
<ul style="list-style-type: none"> - Reuse waste fuel to replace coal by 25% in clinker production by 2024. - Bringing the leftover crushed stone from the construction stone production process to 100%. - 2,300,000 tons of recycled and renewable materials per year by 2024 	<ul style="list-style-type: none"> - Implementing measures to achieve "Zero Waste," by applying the principles of 1A3R (Avoid, Reduce, Reuse, Recycle) to promote. To take measures to reduce waste to zero or "Zero Waste" by utilizing waste products from consumption and utilizing the use of renewable waste products in accordance with the BCG criteria to drive business operation of TPI Polene Group as the followings:- <ul style="list-style-type: none"> - Utilize the great benefit of raw materials, for example, waste/by-product will be reused or recycled as raw material to other product production processes. - Reduce the use of non-renewable energy fuels and use renewable energy fuels such as waste-to—energy, Pyrolysis oil and used oil - Reduce the use of water from Pa Sak River by using water from reserve ponds (surface water) and factory effluence. - Maximize the use of electricity generated from renewable energy, including biomass from by-products of the production process. <p>This includes investments in environmentally friendly innovations and technologies, as well as supporting farmers to reduce the use of chemical fertilizers in farming.</p>	<ul style="list-style-type: none"> - The remaining amount of aggregate scrap from recycle process is 766,505.00 tons, representing 100% of the total remaining scrap soil. - The amount of waste fuel used to replace coal in the clinker production process (with machinery shutdown to improve the electrostatic precipitator efficiency from 99.5% to 99.99%), accounting for 12 % of total fuel. - 2,873,985.30 tons of recycled and renewable materials, increased by 17.07% over the year 2023 	<ul style="list-style-type: none"> - The Company has a daily follow-up meeting on the use of renewable materials/raw materials and renewable fuels in cement production and recorded the results in Production Report

The use of materials in the manufacture and packaging of products and services [301-1]

List of materials used in the manufacture and packaging of products and services	The total weight (or volume) of the material.	Material type (✓)				Specify the source of the material (Purchased from an external supplier or obtain from In-house Supply)
		Raw material	Materials involved in the process	Components	Package	
Non-renewable materials used						
Limestone used to produce cement	8,286,160.97 tons	✓				In-house supply
Recycled Limestone	1,870,487.30 tons	✓				In-house supply
Shale	2,246,436.89 tons	✓				In-house supply
Coal	910,178.84 tons		✓			Purchased from an external suppliers
Fuel oil	0 litres		✓			Purchased from an external suppliers
Aggregate scrap	766,505.00 tons	✓				In-house supply
Used oil	545,693.00 litres		✓			In-house supply
Pyrolysis oil	3,085,585.00 litres		✓			In-house supply
Renewable material used						
Waste Fuel	233,728.42 tons		✓			Purchased from an external suppliers

Imported materials in recycled form to be used in the production of products and services [301-2]

List of Imported materials in recycled form to be used in the manufacture of products and services	Total weight (or volume) of recycled materials	Percentage of recycling used
Non-renewable material		
Recycled Limestone (substitute for limestone used to produce mortar)	1,479,444.57 tons	82.90
Recycled Limestone (substitute for limestone used to produce cement)	391,042.73 tons	4.72
Aggregate scrap (substitute for limestone used to produce cement)	147,212.00 tons	1.78 ⁽¹⁾
Aggregate scrap (substitute for limestone used to produce mortar)	305,074.00 tons	17.10 ⁽²⁾
Aggregate scrap (substitute for shale)	133,855.00 tons	5.96 ⁽³⁾
Aggregate scrap (substitute for river sand)	180,364.00 tons	100.00 ⁽⁴⁾
Used oil (substitute for fuel oil)	545,693.00 litres (518.41 tons)	15.03 ⁽⁵⁾
Pyrolysis oil (substitute for fuel oil)	3,085,585.00 litres (2,746.17 tons)	84.97 ⁽⁶⁾
Total Non-renewable material	2,640,256.88 tons	
Renewable material		
Waste-based fuel (substitute for coal)	233,728.42 tons	11.689 ⁽⁷⁾
Total Renewable material	233,728.42 tons	
Non-renewable material and Renewable material	2,873,985.30 tons	

- Note:**
- ⁽¹⁾ Calculated based on the weight of aggregate scrap (substitute for limestone used to produce cement) compared with total weight of aggregate scrap and limestone used to produce cement
 - ⁽²⁾ Calculated based on the weight of aggregate scrap (substitute for limestone used to produce mortar) compared to the total weight of the aggregate scrap and limestone used to produce mortar.
 - ⁽³⁾ Calculated based on the weight of aggregate scrap (substitute for shale stone) versus the total weight of aggregate scrap and shale.
 - ⁽⁴⁾ Calculated based on the weight of aggregate scrap (substitute for river sand) compared with the total weight of aggregate scrap and river sand.
 - ⁽⁵⁾ Calculated based on used oil volume (fuel oil replacement) versus total volume of used oil, fuel oil and Pyrolysis oil.
 - ⁽⁶⁾ Calculated based on Pyrolysis oil volume (fuel oil replacement) versus the total volume of used oil, fuel oil and Pyrolysis oil.
 - ⁽⁷⁾ Calculated based on the weight of waste fuel (coal substitute) versus the total weight of waste fuel and coal; consider the waste fuel ratio: coal is 1.94.

Linkage to Sustainable Development Goals (SDGs)

The Company recognizes the importance of using materials efficiently to reduce environmental impact and support long-term sustainable development. As a result, material usage has been identified as one of the key business priorities, with the Company focusing on the following areas:

1. Reducing the use of new materials through product design that minimizes resource use, selecting materials that can be recycled, and using renewable materials, such as leftover crushed stone from the construction stone production process. This crushed stone undergoes a recycling process and has been reused in the amount of 766,505.00 tons, accounting for 100% of the total leftover crushed stone.
2. Focusing on waste reduction and recycling by using waste fuel to replace coal in the clinker production process (with machines stopped to improve the efficiency of the dust collector from 99.5% to 99.99%), which accounts for 12% of all fuels.
3. Waste material management to support the Circular Economy by using 2,873,985.30 tons of recycled and renewable materials, marking an increase of 17.07% from 2023.

4. Promoting a sustainable supply chain by collaborating with responsible suppliers who meet environmental standards, in accordance with the Supplier's Code of Conduct, which upholds ethical, labor, and environmental standards.

Linkage to the Sustainable Development Goals: The Company's material use issues are linked with the following Sustainable Development Goals (SDGs):

- SDG 12: Responsible Consumption and Production
 - o Promote efficient material management throughout the product lifecycle, reduce waste, and support recycling.
- SDG 13: Climate Action
 - o Reduce resource and energy consumption by using sustainable materials, which helps lower greenhouse gas emissions.
- SDG 15: Life on Land
 - o Reduce the environmental impact of material sourcing and promote the conservation of biodiversity.

The Company will continuously monitor and evaluate its performance to ensure that its material use practices support the United Nations Sustainable Development Goals.



Logistics System [3-3]

The Company recognizes that its logistics system is an important factor in the Company's business operations, in terms of delivery of goods to customers, transportation of raw materials and Spare parts, as well as the travel of employees to their workplaces. However, it's important to take into account the duration and continuity of the delivery of goods to the destination for a specified period of time in accordance with the purpose of the recipients; and the delivery of goods or raw materials on the return trip without running empty vehicles to reduce transportation costs and reduce pollution that might occur.

In addition, the Company also focuses on the development of efficient transportation systems in terms of human resource development, machinery in logistic system, including transportation vehicles such as trucks and trains for the distribution of goods or raw materials to various destination by the company. the Company has a management team with extensive experience in transportation management and planning. They primarily focus on aligning plans with customer needs and will establish guidelines to ensure consistency in various aspects, such as the required transportation volume and punctuality in transportation and delivery times aiming to create and develop a logistics system to deliver products and services to customers on timely basis and accurately with safety standards. Distribution terminals for goods and raw materials are strategically located in key strategic locations throughout the country with a network of links in inventory management. There are retail stores to support sales to customers to make it easier to access the products, as well as transportation systems that cause minimal environmental impact. In addition to focusing on the efficient use of such resources, it is necessary to take into account cost-effectiveness and reasonable expense costs in the management of transportation to achieve continuity, maximum efficiency with low costs, and minimal environmental impact.

Operational Goals

Short-term Goals within 1-5 years	Long-term Goals more than 5 years
<ul style="list-style-type: none">Quickly distribute products to customers and reduce complaints, with a target of fewer than 0.25% of delivery trips resulting in complaints in 2024, and fewer than 0.05% in 2025.Replace fossil fuel-powered limestone trucks with electric-powered limestone trucks to achieve 100% conversion and reduce greenhouse gas emissions by 2024.Convert 70% of fossil fuel-powered heavy machinery to electric power by 2027 to reduce greenhouse gas emissions.	<ul style="list-style-type: none">Quickly distribute products to customers and reduce complaints, with a target of fewer than 0.01% of delivery trips resulting in complaints per year by 2030.Replace fossil fuel-powered heavy machinery with electric-powered machinery by 2030 to achieve 100% conversion and reduce greenhouse gas emissions.

Target	Action Plan	Key Performance in 2024	Guidelines for Improving future operations
<ul style="list-style-type: none"> - The Company ensures efficient and timely distribution of products to customers, with a strong focus on minimizing complaints. The target is to maintain the complaint rate at below 0.25% of total annual deliveries. - Replace fossil fuel trucks with 100% electric trucks to reduce greenhouse gas emissions by 2024. - Switch from heavy machinery that uses fossil fuels to electricity to reduce greenhouse gas emissions by 70% by 2027. - Switching small delivery trucks from diesel fuel to electric trucks aims to achieve a 100% reduction in greenhouse gas emissions by 2024. 	<ul style="list-style-type: none"> - Manage distribution costs to be efficient in time manner to achieve the objectives of distribution to customers at reasonable transportation expense. - Implement measures to manage the transportation of goods with minimal impact on communities and the environment. These include requiring customers to cover products with tarpaulins before leaving the premises, coordinating with customers and contractors to ensure vehicles are in proper condition, and advising drivers to plan and familiarize themselves with delivery routes in advance. - The quality of management standards has been developed to meet the ISO 9001:2000 quality management standard since 2003 and continues to the present, during which the Company originally received the ISO 9001:2015 standard. Additionally, the Company has received OHSAS 18001 occupational health and safety management system standard since 2003 until the present, which has now been updated to ISO 45001:2018. The Company has also obtained a license from the Department of Land Transport for international freight transport. Various technologies have been introduced, including a GPS vehicle tracking system, real-time transportation management system, delivery staff driving evaluation system, and an online vehicle maintenance data storage system. These technologies support operations by tracking the movement of goods, planning work, and enhancing transportation efficiency, enabling the full and efficient management of vehicle resources. - Provide rail transport that can increase the volume of goods for each trip to be delivered to distribution terminals and warehouses in strategic location for stock reserve and facilitate the distribution of more products to customers and in faster times. 	<ul style="list-style-type: none"> - The number of customer complaints regarding product delivery in 2024 averaged at 0.054%, showing a 53.04% decrease compared with 2023. - Conveyor system Site A mine-front raw materials can generate electricity (Regenerative Downhill Conveyor) can generate electricity of 690,286 kWh/year of, reducing greenhouse gas emissions by 3,025.68 tons of carbon dioxide equivalent per year - Site C mine raw material conveyor system can generate 928,097 kWh of regenerative downhill conveyor/year, reducing greenhouse gas emissions by 4,129.51 tons of carbon dioxide equivalent per year. - In 2024, the Company transported cement more than 0.9 million tons by railways from cement plants, Saraburi province to the Company's distribution terminals, located all regions of the country. This reduces the number of trucks transport to provinces where the distribution terminals are located by more than 28,000 trips. 	<ul style="list-style-type: none"> - Organize driver training to help them understand how to deliver products efficiently and reduce delivery issues. - By 2027, the Company aims to transition heavy machinery used in the quarry, such as loaders, backhoes, and drilling machines, from gasoline-powered engines to approximately 100 electric vehicles. This transition will transform the Company's quarry operations into ones powered solely by clean energy, thereby reducing greenhouse gas emissions, conserving natural resources, and mitigating the generation of PM 2.5 dust from diesel engine combustion. - The project to modify two electric locomotives for rail transport, aimed at reducing fossil fuel consumption, began installation in 2024 and is expected to be completed by June 2025, reducing greenhouse gas emissions in Scope 1 by 1,378 tCO₂e per annum.

Target	Action Plan	Key Performance in 2024	Guidelines for Improving future operations
<ul style="list-style-type: none"> - Set up a network of transportation systems to prevent traffic disruption by arranging the mode of transport by truck, vessel and train transport. - Place utmost importance on road safety and responsible driving. All company drivers receive rigorous training and are continually instilled with awareness of sharing the road with others. The Company remains committed to continuously enhancing road safety practices.. - Plan outbound and return trips to ensure vehicles are not operated empty, optimizing load efficiency and reducing unnecessary fuel consumption. - Has invested in 12 locomotives, operated by the State Railway of Thailand, along with 577 freight containers to transport products from the Saraburi plant to 8 distribution centers nationwide, covering all regions, including Chiang Rak Distribution Center in Pathum Thani Province, Chachoengsao Provincial Distribution Center, Khuan Nang Distribution Center in Songkhla Province, Lam Chi Distribution Center in Surin Province, Huai Khayung Distribution Center in Ubon Ratchathani Province, Ubon Ratchathani Distribution Center, Udon Thani Distribution Center, and Bueng Phra Distribution Center in Phitsanulok Province. This investment in rail transportation can save more energy compared to truck transportation. Additionally, the company has initiated a project to modify electric locomotives for use in rail transportation. This modification will reduce fossil fuel usage and greenhouse gas emissions. The company has proceeded to request permission from the State Railway of Thailand for this project. 	<ul style="list-style-type: none"> - Set up a network of transportation systems to prevent traffic disruption by arranging the mode of transport by truck, vessel and train transport. - Place utmost importance on road safety and responsible driving. All company drivers receive rigorous training and are continually instilled with awareness of sharing the road with others. The Company remains committed to continuously enhancing road safety practices.. - Plan outbound and return trips to ensure vehicles are not operated empty, optimizing load efficiency and reducing unnecessary fuel consumption. - Has invested in 12 locomotives, operated by the State Railway of Thailand, along with 577 freight containers to transport products from the Saraburi plant to 8 distribution centers nationwide, covering all regions, including Chiang Rak Distribution Center in Pathum Thani Province, Chachoengsao Provincial Distribution Center, Khuan Nang Distribution Center in Songkhla Province, Lam Chi Distribution Center in Surin Province, Huai Khayung Distribution Center in Ubon Ratchathani Province, Ubon Ratchathani Distribution Center, Udon Thani Distribution Center, and Bueng Phra Distribution Center in Phitsanulok Province. This investment in rail transportation can save more energy compared to truck transportation. Additionally, the company has initiated a project to modify electric locomotives for use in rail transportation. This modification will reduce fossil fuel usage and greenhouse gas emissions. The company has proceeded to request permission from the State Railway of Thailand for this project. 	<ul style="list-style-type: none"> - In 2024, the Company invested in a 60-ton EV Ming Trucks to replace 100% the motorized rock truck. As a result, when transporting limestone by truck, it is powered by electricity instead of diesel. This helps reduce greenhouse gas emissions, saving on the use of natural resources and decreasing the generation of PM 2.5 dusts from diesel engine combustion. The Company can reduce Scope 1 greenhouse gas emissions by 6,614 tCO₂ e/year. - In 2024, the Company converted 38 heavy mining machines and 30 concrete and cement trucks from combustion engines to electric power, accounting for 28.21%. This investment will reduce transportation costs, PM 2.5 dust, and Scope 1 greenhouse gas emissions by 7,362 tCO₂ e per year. - In 2024, goods/materials/equipment of the Company and its subsidiaries were transported back to the factory on approximately 100 trips per month. - A raw material conveyor belt system was installed at CDE Plant 2, reducing transportation costs, PM 2.5 dust, and Scope 1 greenhouse gas emissions by 2,711 tCO₂ e per year. 	<p>Guidelines for Improving future operations</p>

Target	Action Plan	Key Performance in 2024	Guidelines for improving future operations
	<ul style="list-style-type: none"> - Install conveyor belts to transport raw materials instead of by truck, which reduces diesel consumption, reduce transportation cost and reduce greenhouse gas emissions. Installation has covered the front of site A mine for a round trip distance of 12 kilometers. The conveyor belt system can generate electricity from transportation of raw material (This project was awarded the Thailand Energy Award in 2016 in the category of outstanding award for creative energy from the Department of Alternative Energy Development and Energy Conservation, the Ministry of Energy) and at Site C, the replacement truck transport is 19 kilometers round trip, with a 10-kilometer round-trip conveyor belt capable of generating electricity as well. - The Company is initiating a gradual transition from using pickup trucks in its small delivery operations, which currently rely on rental contracts utilizing diesel fuel, to electric trucks. The Company began gradually replacing 14 trucks. - The Company prioritizes environmentally friendly transportation management by collaborating with transport contractors to implement measures that reduce environmental impact and improve efficiency, as follows: 	<ul style="list-style-type: none"> - A 400-meter shale conveyor belt was installed from the compound mixing bed line 4 to the shale mixing bed line 1 to reduce transportation costs by trucks, as well as to reduce PM2.5 dust and Scope 1 greenhouse gas emissions by 1,051 tCO₂e per year. The installation was completed in August 2024. - The project to relocate shale crusher line 1 to the front of mine site C aims to reduce the stone transportation distance by replacing truck transport with a 2.7-kilometer conveyor belt. This will lower transportation costs, reduce PM2.5 dust, and decrease Scope 1 greenhouse gas emissions by 674 tCO₂e per year. The project was completed in November 2024. - A 1,000-meter shale conveyor belt system was installed between the shale crusher and the mixing bed to efficiently increase the volume of shale transported into the plant. This reduces truck transportation costs from the mine, PM2.5 dust, and Scope 1 greenhouse gas emissions by 1,401 tCO₂e per year. The project is expected to be completed by February 2025. 	

Target	Action Plan	Key Performance in 2024	Guidelines for Improving future operations
	<ul style="list-style-type: none"> Backhauling Management The Company coordinates with contractors to optimize backhauling by ensuring that, after product delivery, contractors transport raw materials and used big bags back to the plant. This reduces empty trips, lowers fuel consumption and transportation costs, and decreases greenhouse gas emissions. Use of Eco-Friendly Vehicles The Company encourages contractors to transition to clean energy vehicles, such as NGV trucks, which provide complete combustion, reduce carbon emissions, and help lower PM2.5 particulate matter. Additionally, electric pickup trucks are used for small-scale deliveries within Bangkok, its vicinity, and central provinces to minimize carbon footprint and environmental impact. Participation in the Green List Program The Company works with transport contractors to maintain trucks in good condition and participate in Bangkok's Green List Program. This allows continuous operation within low emission zones during air pollution crises, supporting air quality improvement and promoting sustainable transportation. 		

Energy Management [3-3]

The cement manufacturing business is considered the Company’s core business, which uses energy consumption of both electricity and thermal energy in amounts of up to 65% of the cost of production. The Company therefore focuses on resource transformation with the greatest use of energy resources, starting from product design to production resources, designing and controlling production processes and machinery in a highly efficient manner to reduce energy consumption, including waste of energy such as waste heat recovery from the cement production process, Calorific Values, fuel energy, as well as promoting Renewable Energy such as waste fuel, pyrolysis oil. The Company supervises and manages business procedures to be in line with TPI Polene Group’s policy of requiring cost-effective and efficient use of energy resources.

Operational Goals

Short-term Goals within 5 years	Long-term Goals for more than 5 years
<ul style="list-style-type: none"> The consumption of all types of energy for clinker production must not exceed 3,639.48 megajoules per ton in 2024 and 3,410 megajoules per ton in 2025. The consumption of all types of energy for cement production must not exceed 175 megajoules per ton in 2024 and 160 megajoules per ton in 2025. The consumption of all types of energy for ready-mixed concrete production must not exceed 60 megajoules per ton in 2024 and 57 megajoules per ton in 2025. The consumption of fossil fuel energy in clinker production must be reduced by 500 megajoules per ton by 2027. 	<ul style="list-style-type: none"> The consumption of all types of energy for clinker production must not exceed 3,350 megajoules/ton in 2030. The consumption of all types of energy for cement production of must not exceed 155 megajoules/ton in 2030. The consumption of all types of energy for ready-mixed concrete production must not exceed 55 megajoules/ton in 2030. The overall energy consumption shall be reduced by 40% compared to 2020 levels by 2030. The consumption of fossil fuel energy in clinker production must be reduced by 600 megajoules per ton by 2030.

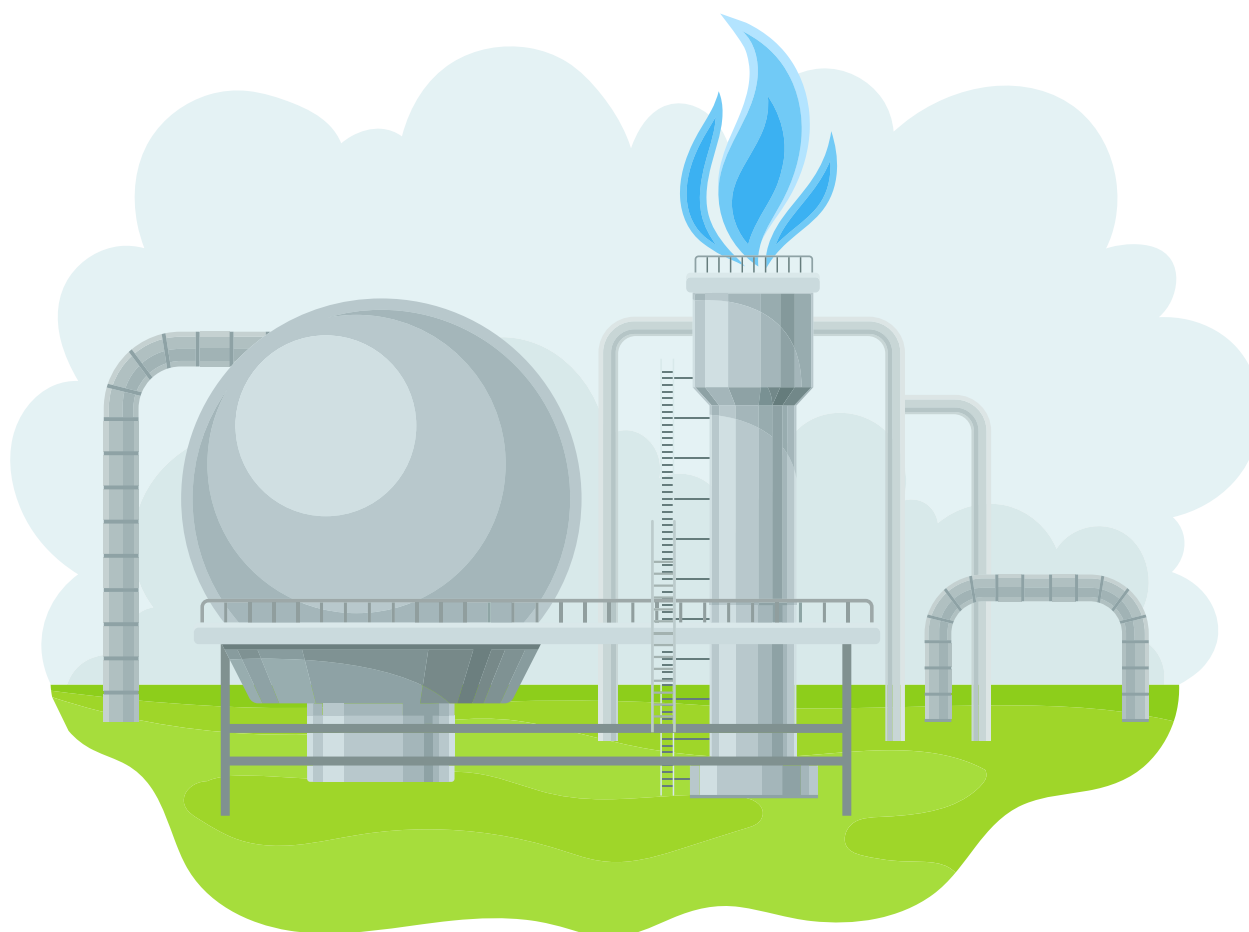


Target	Action Plan	Key Performance in 2024	Guidelines for Improving future operations
Cement Plant - All types of energy consumption per clinker production not more than 3,639.48 megajoules/ton (base year 2012) - All types of energy consumption per cement production not exceeding 175 megajoules /ton (base year 2012) - All kinds of energy consumption per mortar production not more than 60 megajoules/ton (base year 2012) - Reduce energy consumption from using fossil fuels in clinker production by 500 megajoules /ton in 2027 LDPE/EVA Plants - Energy consumption of all kinds per production of specialty grade not exceeding 4,770 MJ/ton - All energy consumption per production of water adhesives, powder adhesives not exceeding 1,162 MJ/ton	- To implement energy management policy and adopt ISO 50001 energy management system under international standards as the management policy. - The senior personnel in charge of electrical and calorific values has been appointed as well senior personnel in electrical to be responsible for power energy, including at the operational level, with the use of focus improvement pillar to search for the point of energy, loss control costs and then improve them by establishing a group to collaborate as a project team - Green Research and Development has been designed products to reduce energy consumption during the production process, such as super mixed cement (40 kg. container), which can be used in equivalent to mixed cement (50 kg. container) and hydraulic cement - Cost-effective use of all the ingredients by reuse and recycle, such as used lubricants is used as fuel. - Community waste is used as renewable fuels in power plants and cement plants. Adoption of lubricants tires or used tires or scraps from the production processes are used as fuel. - Renewable energy by generating electricity from alternative energy plants or waste fuel power plants and producing Pyrolysis oil from used tires from Pyrolysis plants. - Waste Heat Recovery by reusing heat from the production process to heat raw materials in raw meal grinding mills and coal grinding mills and waste heat from the steam production process is used to generate electricity and produce light weight concrete. - High-efficiency manufacturing processes and machinery using high energy-efficient machines such as inverters, modification of Clinker Cooler machines in clinker production and factory crater design by using vertex design to reduce energy consumption and the use of a belt conveyor to transport limestone from the quarry and being able to generate electricity back to the system instead of using trucks and the use of a mobile Crusher to reduce stone transportation, etc.	<ul style="list-style-type: none"> • Total energy consumption measurement (only cement plant, LDPE/EVA plants, and concrete roof tile and fiber cement plants) amounted to 26,796,599.91 gigajoules ^[302-1], accounting for 20.27% of decreasing compared to 2023, the details are as follows: Cement Plant <ul style="list-style-type: none"> • Total energy consumption amounted to 25,653,626.53 gigajoules, representing a decrease of 21.04% compared to 2023, thus reducing the amount of greenhouse gas emissions originating from coal. Therefore, waste fuel, which emits fewer greenhouse gas emissions than coal, was utilized. When compared with the target, it was found that • Energy consumption per ton of clinker production, across all energy types, stands at 3,418.07 megajoules, meeting the established target. • The use of all types of energy per cement production is 162.98 megajoules/ton, which is in line with the target. • The use of all types of energy per production of ready-made cement is equal to 58.72 megajoules/ton, which is in line with the target. • The reduction in energy consumption from using fossil fuels in clinker production by 360.90 megajoules/ton, The machinery was temporarily shut down to improve the dust collection system, transitioning from an Electrostatic Precipitator (ESP) to a Bag Filter, which achieves a dust collection efficiency of 99.99% for PM 2.5. 	1. Carry out energy management in accordance with ISO 50001 for energy management system under international standards. 2. Comply with energy legal regulations. 3. Apply artificial intelligence (AI) technology to the kiln control system of KILN 3 to increase production efficiency, resulting in a reduction of 23.16 kcal of heat energy consumption per kilogram of clinker produced.

Target	Action Plan	Key Performance in 2024	Guidelines for improving future operations
CRT and FCB plants Total energy consumption per board production (FB)/ Tile (FR) /Tile cover (FR)/ Synthetic wood (FW) not exceeding 1,645 MJ/ton	<ul style="list-style-type: none"> - The use of a production control system that is an automatic process for precision in the production process by using a combustion control program to reduce fuel consumption, electric energy and also resulting in high quality clinker. - Polytrack Grate is a new low pressure aeration technology that provides consistent aeration with low energy consumption (at least 1 kWh/ton of clinker) resulting in energy savings and reduced wear and tear on the machine due to reduced air velocity through the vents, thus reducing maintenance costs. Currently, the Company can reduce energy costs from using coal and can also save electricity. - Afforestation helps absorb greenhouse gases released into the atmosphere. TPI Polene Group has been operating continuously since 1992 until now and will continue to do so that the country has more forests to absorb greenhouse gases. - Carbon capture & utilization/ storage (CCUS) by studying the technology of capture, utilization, and storage of carbon dioxide by capturing carbon dioxide from high-pitched smokestacks at power plants and storing it underground or under the ocean without releasing CO₂ into the atmosphere. It is a plan to make further investments in the future if existing greenhouse gas emissions reduction processes are insufficient and the technology is worth investing in the future. - Ethylene discharged from the EVA production process is reused for the production of EVA emulsion, etc., thus reducing costs and reducing pollution to the community and the environment. In addition, the Company continues to explore ways to improve machinery to reduce energy consumption and minimize certain waste from production. Any waste generated is further processed and used as fuel for electricity generation at the Saraburi plant. The Company has also received EVA emulsion production technology transfer from Japan and is committed to continuous research and development. 	<ul style="list-style-type: none"> • The project to increase production efficiency and reduce heat energy at Kilns 1, 2, 3, and 4 (Circulate Cooler Grate Plate) involves improving the Cooler Grate by designing and installing a new House Shoe, which can reduce heat usage in clinker production by at least 5 kcal per kilogram of clinker. This will help save energy in production and reduce greenhouse gas emissions in Scope 1 by 40,010 tCO₂e per year. • The project to improve the efficiency of clinker production in Prepol SC, by changing the feed from Poldos to a bucket elevator and performing kiln maintenance, resulted in a reduction of 40 kcal per kilogram of clinker in heat consumption and a reduction of 40,597 tCO₂e per year in Scope 1 greenhouse gas emissions. <p>LDPE/EVA Plants</p> <ul style="list-style-type: none"> • Total energy consumption of 621,583.31 gigajoules decreased by 3.06% compared with the same in 2023. • All energy consumption per production of LDPE & EVA resins was 4,705.45 MJ/ton. • Total energy consumption per production of water-based adhesives, powdered adhesives was 1,227.94 MJ/ton. <p>CRT and FCB plants</p> <ul style="list-style-type: none"> • Total energy consumption of 521,390.07 gigajoules, increased by 8.70% compared to 2023 and all kinds of total energy per board production (FB)/ Tile (FR) / Tile Cover (FR)/ Synthetic Wood (FW) is equal to 1,540.63 MJ/Ton 	

Oil and fuel consumption of TPI Polene
(only cement plant, LDPE/EVA plants, CRT and FCB plants)

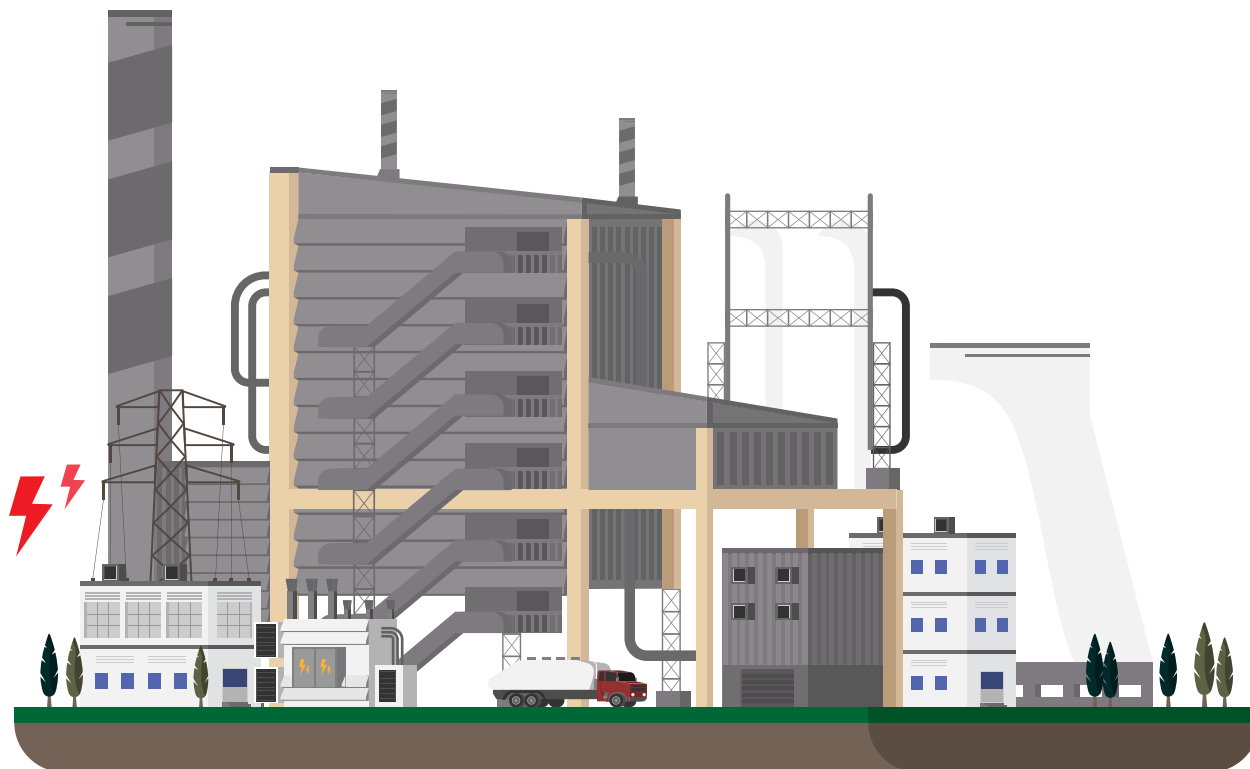
On-premises energy consumption	Fuel Oil and Energy consumption		
	2022	2023	2024
Cement plant			
Coal (Ton)	1,262,956.48	1,134,308.75	910,178.84
Fuel oil (Litre)	4,004,492.00	3,759,985.00	3,631,278.00
Diesel oil (Litre)	13,387,484.00	12,739,267.00	8,560,142.00
Natural Gas (Cubic feet)	14,973,932.25	14,376,871.21	6,732,952.61
Steam (Ton)	53,805.70	57,674.70	55,691.28
Waste Fuel (Ton)	360,675.09	361,826.72	233,728.42
LDPE and EVA Plants Steam (Ton)	35,324.75	37,269.99	33,895.34
CRT and FCB Plants Steam (Ton)	125,523.00	95,223	104,977



Electricity Consumption Information of TPI (only at Cement Plants, LDPE plant, CRT and FCB Plants)

Electricity Consumption	2022	2023	2024
Target of Electricity Consumption (kWh)	1,224,234,235 kWh (130 kWh/Ton)	1,170,000,000 kWh (130 kWh/Ton)	1,051,708,285.62 kWh (130 kWh/ Ton Cement)
Electricity Consumption (kWh)			
- Cement Plant	1,197,794,950.00	1,159,512,336.04	1,043,783,687.75
- LDPE and EVA Plants	154,341,103.00	150,047,981	147,136,267.00
- CRT and FCB Plants	61,717,642.01	61,933,113.30	65,708,844.34
Total Electricity Consumption	1,413,853,695.01	1,371,493,430.34	1,256,628,799.09
Electricity Cost (Baht)			
- Cement Plant	4,194,468,135.08	4,760,367,341.66	4,054,972,883.50
- LDPE and EVA Plants	564,591,008.24	625,358,466.57	541,443,142.39
- CRT and FCB Plants	227,367,915.01	252,979,586.68	237,624,456.31
Total Cost of Electricity Usage	4,986,427,058.33	5,638,705,394.91	4,834,040,482.20

Note: Electricity usage expenses are collected from the actual electricity bill payment during each annual period.



Energy Consumption of TPIPL (only at Cement Plant, LDPE/EVA plants, CRT and FCB Plants) [302-1]

Unit: Gigajoules

Energy Consumption	Energy Consumption					
	2022		2023		2024	
Cement plant						
Heat Energy (Non-Renewable Energy)	27,151,237.32	(77.21%)	24,420,109.82	(75.18%)	19,404,855.37	(75.64%)
Coal	26,416,602.82	(75.12%)	23,738,588.24	(73.08%)	18,821,510.76	(73.37%)
Fuel Oil	126,608.77	(0.36%)	133,603.93	(0.41%)	131,226.22	(0.51%)
Diesel Oil	528,111.31	(1.50%)	463,964.10	(1.43%)	375,906.70	(1.47%)
Natural Gas	15,273.41	(0.04%)	14,664.41	(0.05%)	9,305.38	(0.04%)
Steam	64,641.01	(0.18%)	69,289.14	(0.21%)	66,906.31	(0.26%)
Heat Energy (Renewable Energy)	3,704,291.69	(10.53%)	3,893,921.48	(11.99%)	2,491,149.89	(9.71%)
Waste Fuel	3,704,291.69	(10.53%)	3,893,921.48	(11.99%)	2,491,149.89	(9.71%)
Electric Energy	4,312,061.82	(12.26%)	4,174,244.41	(12.85%)	3,757,621.27	(14.65%)
Total	35,167,590.83	(100%)	32,488,275.71	(100%)	25,653,626.53	(100%)
LDPE and EVA						
Heat Energy (Non-Renewable Energy)	95,765.00	(14.70%)	101,041.67	(15.76%)	91,892.75	(14.78%)
Steam	95,765.00	(14.70%)	101,041.67	(15.76%)	91,892.75	(14.78%)
Electric Energy	555,627.97	(85.30%)	540,172.73	(84.24%)	529,690.56	(85.22%)
Total	651,392.97	(100%)	641,214.40	(100%)	621,583.31	(100%)
CRT and FCB Plants						
Heat Energy (Non-Renewable Energy)	340,302.02	(60.18%)	258,156.50	(53.82%)	284,600.31	(54.58%)
Steam	340,302.02	(60.18%)	258,156.50	(53.82%)	284,600.31	(54.58%)
Electric Energy	225,183.51	(39.82%)	221,515.20	(46.18%)	236,789.76	(45.42%)
Total	565,485.53	(100%)	479,671.70	(100%)	521,390.07	(100%)
Total Energy Consumption	36,384,469.33		33,609,161.81		26,796,599.91	

- Note:**
- Calorific Values of 1 kWh is equal to 0.00360 gigajoules, 1 kg of coal is equal to 0.0218 gigajoules, 1 litre of furnace oil is equals to 0.03977 gigajoules, 1 litre of fuel (diesel) is equal 0.03642, gigajoules, natural gas (dry) 1 cubic feet is equal to 0.0367 gigajoules, 1 kg of waste is equal to 0.00486 gigajoules based on information from The Department of Alternative Energy Development and Conservation, Ministry of Energy
 - 1 ton of Calorific Values from steam is calculated based on the amount of heat passing in or out of the system in the process of constant pressure (Enthalpy) at 25 bar of pressure steam, which is equal to 2.711073 gigajoules.

Energy Concentration

(only at Cement Plants, LDPE/EVA plants and CRT and FCB Plants) [302-3]

Unit: Megajoule per ton

Energy consumption	Types of energy used		Energy consumption		
	Electricity	Heat	2022	2023	2024
Cement plant					
SEC of Clinker	•	•	3,567.79	3,450.07	3,418.07
SEC of Cement	•		153.30	153.34	162.98
SEC of Mortar	•		57.28	57.10	58.72
LDPE and EVA plants					
SEC of LDPE & EVA Plastic Resins	•	•	4,571.26	4,743.99	4,705.45
SEC of EVA Emulsion and EVA Powder	•	•	1,162.06	1,081.86	1,277.94
CRT and FCB plants					
SEC of Board (FCB)/Tile (FR)/Roof Tile	•	•	1,644.78	1,468.02	1,540.63
(FR)/Fiber Wood (FW)					

Note: SEC (Specific Energy Consumption) refers to energy consumption per unit of production.



Energy Reduction Initiatives [302-4]

Energy Reduction Initiatives	Operation details	Decreased energy supply
Project to apply Artificial Intelligence (AI) technology to the kiln control system of KILN 3.	- Artificial Intelligence (AI) technology is applied to the kiln control system of KILN 3, which previously relied on manual input of fuel quantities for production. The AI system now adjusts fuel input based on the amount of raw materials used, helping to increase production efficiency and resulting in a reduction of heat energy usage by 23.16 kcal per kilogram of clinker produced. The project is expected to be completed by mid-2025.	207,915,640.29 MJ/year
The project of using electric powered stone trucks (EV mining truck) size 60 tons instead of diesel trucks that use engines	- The 60-ton electric-powered (EV mining truck) replaces the engine-powered quarries in transporting limestone by trucks using electricity instead of diesel fuel to reduce greenhouse gas emissions, saving the use of natural resources as well as helping to reduce the occurrence of PM 2.5 dust from the combustion of diesel engines.	105,300,682.24 MJ/year
The Prepol-SC project is the installation of additional machinery for cement kilns of production line 1, 2, 3 and 4.	- Install machinery to use waste as fuel to replace coal by up to 25% and change the thermal energy from coal to heat from waste fuel (renewable energy), which will reduce fuel costs.	8,334,038,916.51 MJ/year
Project: Increasing the efficiency of thermal energy production at Kiln 1,2,3 4 (Circulate Cooler Grate Plate)	- The original static grate plate style causes clinker residue, blocking airflow from the underside of the grate plate; therefore, a new shoe has been designed and installed, adjusting the tilt to 14 degrees. This adjustment results in more uniform movement of the clinker without residue. Additionally, air spray holes have been added to enhance heat transfer and improve circulation in the kiln, thereby reducing heat usage in clinker production.	380,580,120.00 MJ/year
Modify heavy mining machinery project from engine power to electric power.	- Heavy mining machinery is being converted from engine power to electricity, transforming limestone mining into a clean energy operation. This helps reduce greenhouse gas emissions, conserve natural resources, and decrease PM 2.5 dust from diesel engine combustion.	108,036,680.01 MJ/year

Water and Effluents Management [3-3]

Water resources are an important resource to be used in the Company’s production processes and are essential for all living beings. It is important for humans for consumption as well as being a resource that provides benefits and is an important factor in driving economic and social activities, including natural ecosystems. The Company is highly aware of the need for the efficient use of water resources for the greatest value and benefit for its business operations, as well as the need to focus on the management of water and effluents to reduce the impact of water resources from the Company’s activities on society and the environment and to embrace Bio-Circular-Green Economy (BCG) policy to contribute to sustainable development.

Operational Goals

Short-term Goals within 5 years	Long-term Goals more than 5 years
<ul style="list-style-type: none"> Control the amount of water drawn from the Pa Sak River to not exceed 11,000,000 cubic meters per year. Reduce the amount of water drawn from the Pa Sak River by 1 million cubic meters per year in 2025. Reduce the use of water resources from the Pa Sak River by reusing surface water and used water, with water usage not exceeding 275 liters per ton of cement in 2022, 225 liters per ton of cement in 2023, 200 liters per ton of cement in 2024, and 180 liters per ton of cement in 2025. 	<ul style="list-style-type: none"> Control the amount of water drawn from the Pa Sak River to not exceed 10,000,000 cubic meters per year. Reduce water consumption from the Pa Sak River by reusing surface and used water, with a limit of no more than 160 liters per ton of cement by 2030.





Measures and Guidelines for Water Conservation and Loss Reduction

1. Cement Factory (Saraburi)

1.1 Increase the Efficiency of Water Consumption in Production Process

- Reuse water from the treatment system in the cooling and dust control process.
- Reduce the amount of water used in mixing raw materials by using modern techniques.
- Install automatic water control sensors.

1.2 Rainwater and Wastewater Management

- Collect rainwater for cleaning and dust control.
- Separate wastewater and clean water to reuse in production processes.

1.3 Infrastructure Improvement

- Conduct maintenance and inspections of the water pipe system to reduce leakage.
- Use water circulation system for cleaning factory area.

2. Plastic Resins Manufacturing Plant (Rayong)

2.1 Increase the Efficiency of Water Consumption in Production Process

- Use water circulation system in the process of cooling and washing plastic resins.
- Install water treatment system for reuse.
- Inspect and reduce water leakage in pipe system and machinery.

2.2 Wastewater Management

- Separate wastewater that can be reused, such as water from cooling processes.
- Use water treatment technology to reuse it in the production process.

2.3 Promotion of Water Conservation Awareness

- Train employees on efficient water use.
- Post PR signs to encourage employees to conserve water.
- Establish policies for employees and personnel to follow, such as turning off the faucet after each use.
- Plan and monitor water usage to improve measures for greater efficiency.
- Promote the use of 3R (Reduce, Reuse, Recycle) approach in water management.

3. Head Office

3.1 Water Conservation Measures in Office Building

- Install water-saving faucets and sanitary ware.
- Encourage reporting of water leaks for prompt repair.
- Promote the use of 3R (Reduce, Reuse, Recycle) approach in water management.

3.2 Promotion of Water-saving Behavior in the Organization

- Encourage employees to turn off the faucets after use.
- Set a goal to reduce water usage and regularly track the results.
- Organize training or seminars on water conservation and environmental impacts
- Post posters or infographics in common areas, such as toilets, kitchens, and cafeterias, to remind employees to use water efficiently.
- Promote via internal emails or communication platforms such as Intranet or Line Group.

Target	Action Plan	Key Performance in 2024	Guidelines for improving future operations
<ul style="list-style-type: none"> - Reduce water consumption from the Pa Sak River by reusing surface and used water, with limits of no more than 275 liters per ton of cement in 2022, 225 liters per ton in 2023, and 200 liters per ton in 2024. - Control the amount of water drawn from the Pa Sak River to ensure it does not exceed 12,000,000 cubic meters per year. - Reduce the amount of water drawn from the Pa Sak River by 1 million cubic meters per year by 2025, through the storage of rainwater in reserve ponds for use in the production process. - Control the quality of wastewater discharged into drainage channels in industrial areas to meet the value of the standards set by the Department of Industrial Works regulations. 	<ul style="list-style-type: none"> - The Company has two main sources of water: <ol style="list-style-type: none"> (1) Pa Sak River, where water is pumped to the water quality adjustment plant of cement plant, which is a water supply system, to be used in cement plants and power plants. (2) Surface water reservoir and effluence reservoirs within the plant total of 3 ponds, consisting of 180,000 cubic meter well, which reserve rainwater in the factory area. The 1,5000,000 cubic meter well, which reserve rainwater that falls in mines and neighborhoods, and a 1,000,000 cubic meter well to provide the Company's reserves as well as to prevent the impact on community's water use in nearby areas. Water from these surface ponds will be pumped together with water from the Pa Sak River to improve quality before being used in cement plant and power plants, and also as a reservoir for use in drought period if the amount of water from the Pa Sak River is not sufficient for industrial use. ^[303-1] - Pumping water from Pa Sak River of the Company is under control of the Irrigation Project Office, Saraburi province. The office will issue a license for the Company to pump water of not more than 1,000,000 cubic meters per month. The Company must prepare a summary report on the volume of pumping from Pa Sak River and send it to the Irrigation Project Office in Saraburi province on monthly basis. The Bureau will also provide staff to inspect the meter to check the volume of water pumping from Pa Sak River on a monthly basis. ^[303-1] 	<ul style="list-style-type: none"> - The use of water resources from significant sources affects the environment (only for cement plants, LDPE and EVA plants, CRT and FCB plants). <ul style="list-style-type: none"> • In 2024, 5,152,734 cubic meters of water from the Pa Sak River decreased by 6.15% compared with the same in 2023. • In 2024, water consumption at cement part was 185.45 litres/ton decreased by 10.44% compared with the same in 2023. • Total amount of water to be used of 9,548,906 cubic meters, classified as water with a total amount of solids dissolved in water \leq 1,000 mg/litre of 9,548,906 cubic meters decreased by 2.61% compared with the same in 2023 and total amounts of soluble solids > 1,000 mg/l of 331,624 cubic meters, representing an increase of 4.76% compared with the same in 2023. ^[303-3] • Total sewage volume of 7,452 cubic meters, classified as water with a total amount of solids dissolved in water \leq 1,000 mg/litre of 7,452 cubic meters of water and total amount of soluble solids > 1,000 mg/litre of 0 cubic meters, a decrease 51.42% compared with the same in 2023. ^[303-4] • Total water consumption of 2,371,070 cubic meters represents a decrease of 3.37% compared with the same in 2023. • Total reusable water content of 1,110,051 cubic meters, a decrease of 18.51% compared with the same in 2023 and accounted for 46.82% of total water consumption. 	<ul style="list-style-type: none"> - The Company plans to manage the water by developing additional surface water reservoirs and under the process of the excavation of a well of 1,000,000 cubic meters for use as a water reserve to prevent and reduce the impact on the use of water in the community. - LDPE/EVA plants in Rayong province continuously monitor water situation in the Eastern Basin, including quality, in accordance with plans and EIA measures to ensure that there is enough water to operate the business and not affect the surrounding communities.

Target	Action Plan	Key Performance in 2024	Guidelines for improving future operations
	<ul style="list-style-type: none"> - Since water source from Pa Sak River is used by many sectors, such as agriculture, industrial sector commercial sector and household, etc. Therefore, water use must be controlled and allocated by the Saraburi Irrigation Project Office to control and allocate water consumption so that all sectors are properly and fairly allocated. ^[303-1] - Cement plant has implemented the TPM management system across all processes to reduce water loss by inspecting and maintaining machines for maximum efficiency, thereby minimizing water usage in the production process. ^[303-1] - The Company does not drain the effluents outside the plants but have a sewage ponds to reuse effluents within the plants. ^[303-2] - LDPE/EVA plants, where an effluent from production process is drained into the effluents treatment system and water quality is analyzed to meet the benchmark before drainage via drainage trough of the plants. Water quality is tracked to meet the benchmark before draining into the sewerage of the operating zone according to the EIA standards of Rayong plant, and the results of the EIA follow-up are reported to the relevant government authority continuously. For the operating area, water quality is monitored according to the EHIA standard of the IRPC operator zone before drainage out of the plants. ^[303-2] 	<ul style="list-style-type: none"> • The Company has drained effluent outside the plant, where the results of the analysis of the quality of the drainage effluences in 2024 are all under standards. ^[303-4] 	

Volume of Water Utilization (only for Cement plant, LDPE/EVA plants, CRT plant, and FCB plant) [303-3]

Unit: Cubic meters

Water sources	Volume of water in particular areas		Water content in areas with water stress		
	2022	2023	2024	2022	2023
Cement plant					
Surface water (Pa Sak River and rainwater)					
Water with a total volume of soluble solids ≤1,000 mg/litre	9,068,317	8,162,450	7,921,372	-	-
Water with a total volume of soluble solids >1,000 mg/litre	0	0	0	-	-
Underground water					
Water with a total volume of soluble solids ≤1,000 mg/litre	361,236	403,740	376,156	-	-
Water with a total volume of soluble solids >1,000 mg/litre	0	0	0	-	-
Seawater					
Water with a total volume of soluble solids ≤1,000 mg/litre	0	0	0	-	-
Water with a total volume of soluble solids >1,000 mg/litre	0	0	0	-	-
Water from the production process					
Water with a total volume of soluble solids ≤1,000 mg/litre	396,322	383,461	380,648	-	-
Water with a total volume of soluble solids >1,000 mg/litre	0	0	0	-	-
Water from external sources					
Water with a total volume of soluble solids ≤1,000 mg/litre	0	0	0	-	-
Water with a total volume of soluble solids >1,000 mg/litre	0	0	0	-	-
LDPE/EVA plants					

Water sources	Volume of water in particular areas			Water content in areas with water stress		
	2022	2023	2024	2022	2023	2024
Surface Water						
Water with a total volume of soluble solids $\leq 1,000$ mg/litre	0	0	0	-	-	-
Water with a total volume of soluble solids $> 1,000$ mg/litre	0	0	0	-	-	-
Underground water						
Water with a total volume of soluble solids $\leq 1,000$ mg/litre	0	0	0	-	-	-
Water with a total volume of soluble solids $> 1,000$ mg/litre	0	0	0	-	-	-
Seawater						
Water with a total volume of soluble solids $\leq 1,000$ mg/litre	0	0	0	-	-	-
Water with a total volume of soluble solids $> 1,000$ mg/litre	0	0	0	-	-	-
Water from the production process						
Water with a total volume of soluble solids $\leq 1,000$ mg/litre	95,141	86,809	82,057	-	-	-
Water with a total volume of soluble solids $> 1,000$ mg/litre	0	0	0	-	-	-
External water (tap water)						
Water with a total volume of soluble solids $\leq 1,000$ mg/litre	568,721	451,505	457,049	-	-	-
Water with a total volume of soluble solids $> 1,000$ mg/litre	0	0	0	-	-	-
CRT and FCB plants						
Surface water						
Water with a total volume of soluble solids $\leq 1,000$ mg/litre	0	0	0	-	-	-
Water with a total volume of soluble solids $> 1,000$ mg/litre	0	0	0	-	-	-
Underground water						
Water with a total volume of soluble solids $\leq 1,000$ mg/litre	0	0	0	-	-	-
Water with a total volume of soluble solids $> 1,000$ mg/litre	247,744	316,562	331,624	-	-	-

Water sources	Volume of water in particular areas			Water content in areas with water stress		
	2022	2023	2024	2022	2023	2024
Seawater						
Water with a total volume of soluble solids ≤1,000 mg/litre	0	0	0	-	-	-
Water with a total volume of soluble solids >1,000 mg/litre	0	0	0	-	-	-
Water from the production process						
Water with a total volume of soluble solids ≤1,000 mg/litre	0	0	0	-	-	-
Water with a total volume of soluble solids >1,000 mg/litre	0	0	0	-	-	-
External water (tap water)						
Water with a total volume of soluble solids ≤1,000 mg/litre	0	0	0	-	-	-
Water with a total volume of soluble solids >1,000 mg/litre	0	0	0	-	-	-
Water with a total volume of soluble solids ≤1,000 mg/l	10,489,737	9,487,965	9,217,282	-	-	-
Water with a total volume of soluble solids >1,000 mg/l	247,744	316,562	331,624	-	-	-
Total Volume of Water Utilization	10,737,481	9,804,527	9,548,906	-	-	-

Note: No water is drawn from areas experiencing water stress.

Volume of sewage water (only for Cement plant, LDPE/EVA plants, CRT plant, and FCB plants) [303-4]

Unit: Cubic meters

Drainage of sewage water to the discharged sources.	Volume of water in the area			Water content in areas with water stress		
	2022	2023	2024	2022	2023	2024
Cement plant						
Surface water						
Water with a total volume of soluble solids ≤1,000 mg/l	0	0	0	-	-	-
Water with a total volume of soluble solids >1,000 mg/l	0	0	0	-	-	-
Underground water						
Water with a total volume of soluble solids ≤1,000 mg/l	0	0	0	-	-	-
Water with a total volume of soluble solids >1,000 mg/l	0	0	0	-	-	-
Seawater						
Water with a total volume of soluble solids ≤1,000 mg/l	0	0	0	-	-	-
Water with a total volume of soluble solids >1,000 mg/l	0	0	0	-	-	-
Transferred to another external organizations						
Water with a total volume of soluble solids ≤1,000 mg/l	0	0	0	-	-	-
Water with a total volume of soluble solids >1,000 mg/l	0	0	0	-	-	-
LDPE plant						
Surface Water						
Water with a total volume of soluble solids ≤1,000 mg/l	0	0	0	-	-	-
Water with a total volume of soluble solids >1,000 mg/l	0	0	0	-	-	-
Groundwater						
Water with a total volume of soluble solids ≤1,000 mg/l	0	0	0	-	-	-
Water with a total volume of soluble solids >1,000 mg/l	0	0	0	-	-	-

Drainage of sewage water to the discharged sources.	Volume of water in the area			Water content in areas with water stress		
	2022	2023	2024	2022	2023	2024
Seawater						
Water with a total volume of soluble solids ≤1,000 mg/l	0	0	0	-	-	-
Water with a total volume of soluble solids >1,000 mg/l	0	0	0	-	-	-
Send to another external organization						
Water with a total volume of soluble solids ≤1,000 mg/l	12,884	15,343	7,452	-	-	-
Water with a total volume of soluble solids >1,000 mg/l	0	0	0	-	-	-
CRT and FCB plants						
Surface water						
Water with a total volume of soluble solids ≤1,000 mg/l	0	0	0	-	-	-
Water with a total volume of soluble solids >1,000 mg/l	0	0	0	-	-	-
Underground water						
Water with a total volume of soluble solids ≤1,000 mg/l	0	0	0	-	-	-
Water with a total volume of soluble solids >1,000 mg/l	0	0	0	-	-	-
Seawater						
Water with a total volume of soluble solids ≤1,000 mg/l	0	0	0	-	-	-
Water with a total volume of soluble solids >1,000 mg/l	0	0	0	-	-	-
Send to external organization						
Water with a total volume of soluble solids ≤1,000 mg/l	0	0	0	-	-	-
Water with a total volume of soluble solids >1,000 mg/l	0	0	0	-	-	-
Total sewage volume						
Water with a total volume of soluble solids ≤1,000 mg/l	12,884	15,343	7,452	-	-	-
Water with a total volume of soluble solids >1,000 mg/l	0	0	0	-	-	-

Note: No water is drawn from areas experiencing water stress

Substances classified as having an environmental impact that require treatment of discharged water [303-4]

Substances assessed were rated as having an impact on the environment, which requires the water treatment.	Measured values		
	2022	2023	2024
Cement Plant (No substances to be treated in the effluent)			
pH	8.2	8.7	7.6
TDS	516	508	759
SS	22.4	12.8	9.7
BOD	3.7	<2	4
COD	ND	<25	<25
Oil and Grease	ND	<3	<3
LDPE/EVA plants			
pH	7.03	6.99	7.37
BOD	4.93	9.691	5.26
COD	51.98	65.98	69.71
TKN	1.11	3.92	1.67
Oil and Grease	2.72	3.30	2.15
CRT and FCB plants			
pH	-	-	-
TDS	-	-	-
SS	-	-	-
BOD	-	-	-
COD	-	-	-
Oil and Grease	-	-	-

Remark: Standard measurement rate based on the Ministry of Industry Announcement on determining standards for Controlling Factory Drainage 2017

* ND : No Detected means unable to detect.

** The dash - signifies that no water is discharged into water bodies

Water consumption (only for Cement plant, LDPE/EVA plants, CRT plant, and FCB plants) [303-5]

Unit: Cubic meters

Water usage by key operational sources	Volume of water in particular areas			Water volume in water-stressed areas		
	2022	2023	2024	2022	2023	2024
Cement Plant						
Water consumption	1,905,097	1,683,872	1,500,340	-	-	-
Water reserved in the reservoirs	2,680,000	2,680,000	2,680,000	-	-	-
Recycle Water	960,495	1,355,300	1,103,151	-	-	-
The use of water per production (Litre per cement ton)	254.15	207.06	185.45	-	-	-
LDPE/EVA Plants						
Water consumption	663,549	538,314	539,106	-	-	-
Water contained in the reservoirs	0	0	0	-	-	-
Recycle water	0	0	0	-	-	-
The use of water per production (Litre per ton)	4,430	3,804	3,931	-	-	-
CRT and FCB Plants						
Water consumption	247,744	316,562	331,624	-	-	-
Water contained in the reservoirs	290,369	261,805	336,110	-	-	-
Recycle Water	6,900	6,900	6,900	-	-	-
The use of water per production (Litres per Ton of Finished Goods)	845	743	682	-	-	-
Total Water consumption	2,645,155	2,453,710	2,371,070	-	-	-
Total volume of water contained in the reservoirs	2,970,369	2,941,805	3,016,110	-	-	-
Total volume of recycle water	967,395	1,362,200	1,110,051	-	-	-

Note: No water is drawn from areas of water stress.

TPI Polene's tap water consumption (only for Cement plant, LDPE/EVA plants, CRT and FCB plants)

Tap Water Consumption	2022	2023	2024
Target of tap water consumption (cubic meter)	580,000	470,000	470,000
Tap water consumption (cubic meters)			
- Cement Plant	0	0	0
- LDPE/EVA Plants	568,408	451,505	457,049
- CRT and FCB Plants	0	0	0
Total tap water consumption	568,408	451,505	457,049
Cost of tap water consumption (Baht)			
- Cement Plant	0	0	0
- LDPE/EVA Plants	11,094,156.00	9,030,100	9,140,980
- CRT and FCB Plants	0	0	0
Total cost of tap water consumption	11,094,156.00	9,030,100	9,140,980

Note: The cost of water consumption is collected based on the actual water bill payments made during each annual period.

Scrap and Waste Management [3-3]

The Company prioritizes solid waste, waste and industrial waste management in line with sustainable development principles, implementing measures that address environmental, social, and governance dimensions to ensure our production processes have minimal impact on the environment and communities.

- **Environmental Dimension:** The Company focuses on reducing waste generated from the production process by improving raw material efficiency and applying the 1A3R (Avoid, Reduce, Reuse, Recycle) approach to minimize waste disposal. Additionally, the Company utilizes environmentally friendly technology, including safe hazardous waste management in accordance with international standards.
- **Social Dimension:** The Company prioritizes the health and safety of its employees and surrounding communities by providing safe waste collection and disposal systems, monitoring and reducing pollution that may impact the community's quality of life, and educating employees and business partners on environmentally friendly practices.
- **Governance Dimension:** The Company has been granted a Factory Type 101 license by the Department of Industrial Works to manage industrial waste in strict accordance with laws, standards and related standards. Waste management results are transparently monitored and reported to ensure compliance with good governance principles and achievement of sustainability goals.

Target	Action Plan	Key Performance in 2024	Guidelines for Improving future operations
<p>1. Utilize the greatest benefit of industrial waste \geq 95% of the amount of industrial waste generated each year.</p> <p>2. Operate the business under the concept of zero waste by adhering to the circular economy principle, take measures to reduce waste to zero or "Zero Waste" by utilizing waste products from consumption and utilizing the use of renewable waste products in accordance with the BCG criteria to drive business operation of TPI Polene Group for efficient use of resources at the highest minimize waste generated using the principle of 1A3R (Avoid, Reduce, Reuse, Recycle) without discharge of waste, wastewater, used oil, chemicals, and waste into the ground.</p>	<ul style="list-style-type: none"> - Implement Zero Waste to Landfill policy by disposal of waste without harmful the environment with the method of co-fired together with the main fuel at the rotary kiln at temperatures above 1,800 degrees Celsius in the closed system, it is considered a modern and technological advancement and environmentally friendly compared to the conventional landfill waste that causes problems for communities and the environment. For this reason, the Company's business operations will limit and not release carcinogens such as methane, nitrogen oxide (NOx) and sulfur dioxide (SO₂) and fly ash into the atmosphere, making it an effective and sustainable way to manage waste or industrial waste. ^{[306-1] [306-2]} - Implement the BCG strategy to ensure the cost-effective use of raw material resources, such as the use of excess of waste from sorting process to produce fuel, through the production process to produce organic fertilizer under fertilizer projects. This increases productivity and reduces costs of using chemical fertilizers for agriculturalists and does not cause residues in the soil. The waste concrete tile scraps of the production process are used as new raw materials in the production process. The use of raw materials waste caused by recycling water filtration in the fiber cement board production process is used through stirring and wet grinding to be recycled as new raw materials. 	<ul style="list-style-type: none"> - Total amount of industrial waste to be exploited was 2,876.46 tons, representing 99.70% of the amount of industrial waste generated in 2024. - The quantity of safe landfill waste was 0 tons, accounting for 0% of the industrial waste generated in 2023. Therefore, the company no landfills waste in 2024. 	<p>Strictly comply with the Ministry of Industry Announcement on The Disposal of Sewage or Disused Materials B.E. 2548 (2005)</p>

Target	Action Plan	Key Performance in 2024	Guidelines for Improving future operations
	<p>The use of dust caused by dry bending process and scrap fiber cement boards that are waste from the production process through a fine grinding process to be used as a new raw material, such as cement, pulp and sand as well as supporting renewable energy consumption and increasing energy efficiency by using waste to produce coal renewable fuels in cement plants, which reduces environmental problems, caused by the disposal of conventional waste using landfill methods, causing air pollution and Waste Gas. By- products from EVA production process is used as raw material in the production of EVA Emulsion and EVA Powder. ^[306-2]</p> <ul style="list-style-type: none"> - The Company has a procedure for information collection and assessment in relation to waste as follows:- <ol style="list-style-type: none"> 1. Industrial waste management must comply with the Ministry of Industry Announcement on the Disposal of Sewage or Disused Materials B.E. 2548 (2005) 2. Exploiting industrial waste, such as renewable fuels, renewable materials, recycle or disposable must obtain permission with the Department of Industrial Works at all times and provide details of waste, disposal method, weight and waste disposal recipient. 3. To exploit industrial waste, such as renewable fuel, as a renewable material, recycle or dispose of it, transportation documents must be issued at all times they are transported for legal evidence. 4. Accounting for collecting data and controlling the weight of industrial waste that has been exploited, such as renewable fuels, renewable materials, recycle or disposable. ^[306-2] 		

Scrap quantity and waste management (only cement plant, LDPE/EVA plants and CRT and FCB plants) [306-3][306-4][306-5]

Unit: Tons

Scrap and Waste Management	2022	2023	2024
1. Total waste content classified by type of waste			
- Hazardous waste	3,906.77	3,091.93	2,012.10
- Non- hazardous waste	6,136.51	3,029.92	873.05
Total quantity of waste	10,043.28	6,121.85	2,885.15
2. Exploitation*			
Hazardous waste			
- Substitute fuel	3,426.53	2,779.42	1,820.72
- Substitute material	267.64	184.76	169.05
- To be recycled	203.38	119.79	22.33
Non- hazardous waste			
- Renewable fuel	513.53	44.91	28.77
- Substitute material	2,886.18	78.44	107.65
- To be recycled	2,736.66	2,879.82	727.95
Total utilized waste content	10,033.92	6,087.14	2,876.46
3. Disposal of waste			
Hazardous waste			
- Safe landfill	9.22	7.96	0
Non- hazardous waste	0.14	26.75	8.68
Total disposal waste content	9.36	34.71	8.68

Note: * Utilization and disposal occur within the physical boundaries under the Company's control and management (onsite).

Development of projects to mitigate key environmental impacts in 2024

The Company is committed to improving and developing various procedures to mitigate environmental impacts, representing the investment value in projects related to environmental impact mitigation in 2024, totaling Baht 1,638,390,000 as follows:-

Project	Advantage
The project to implement Artificial Intelligence (AI) technology in kiln control systems, starting with KILN 3.	<ol style="list-style-type: none"> 1. Reduce heat consumption and repair costs, while using waste as a fuel to replace coal. 2. Help in reducing greenhouse gas emissions.
The project to bring a 60-ton EV mining trucks instead of a motor-driven stone truck.	<ol style="list-style-type: none"> 1. Reduce greenhouse gas emissions 2. Save the use of natural resources 3. Reduce the occurrence of PM 2.5 dust from the combustion of diesel engines
The project to convert heavy mining machinery from using fossil fuels to electricity.	<ol style="list-style-type: none"> 1. Help in reducing greenhouse gas emissions. 2. Save natural resources. 3. Help in reducing PM 2.5 dust from diesel engine combustion.
The project aims to reduce power consumption, repair and maintenance (R&M) costs, breakdowns, and increase waste heat recovery in the cement kiln.	<ol style="list-style-type: none"> 1. Reduce heat consumption and repair costs, while using waste as a fuel to replace coal. 2. Help in reducing greenhouse gas emissions.
Project: Increasing the efficiency of thermal energy production at Kiln 1,2,3, 4 (Circulate Cooler Grate Plate)	<ol style="list-style-type: none"> 1. Reducing heat consumption in clinker production, resulting in saving the use of fuel from natural resources. 2. Reducing greenhouse gas emissions
The project to use alternative materials by reducing the proportion of clinker used.	<ol style="list-style-type: none"> 1. Use alternative materials and reduce clinker consumption in cement production, resulting in fuel savings from natural resources. 2. Help in reducing greenhouse gas emissions.
The project to transport raw materials using electric conveyor belts instead of trucks.	<ol style="list-style-type: none"> 1. Help in reducing greenhouse gas emissions. 2. Save natural resources. 3. Help in reducing PM 2.5 dust from diesel engine combustion.

06 Community and Social Development Performance in 2024

Community and social contributions
Baht 28.44 million

Injury Frequency Rate (IFR) of
Employees and Contractors /
Business Partners
0.542 ⁽¹⁾ / 0.771 ⁽¹⁾
per 1 million working hours

Number of working hours without
accidents
Employees 18,683,374 hours
Partners/Contractors 3,596,768 hours

Lost Time Injury Rate (LTIR)
of employees and contractors
0.442 ⁽¹⁾ and 0.771 ⁽¹⁾ per 1 million
working hours

Average training hours for employees
26.14 hours/person/year ⁽¹⁾

Work-Related Fatality Rate for
employees and contractors⁽¹⁾
0 cases per 1 million working hours

Overall customer
satisfaction/ satisfaction with solving
problems for customers
87.80% ⁽¹⁾ and 95.40% ⁽¹⁾

Remark: (1) Only for TPI Polene Public Company Limited

Human Resource Management [3-3]

Amidst the ongoing competition and changes in the global landscape, encompassing economic, social, and environmental aspects, in 2024, the Company is committed to continuously developing human resources in all dimensions, planning a human resource management strategy to prepare employees for the challenges. The Company has recruited and hired an appropriate and sufficient number of employees, adhering to the principles of transparency and fairness without discrimination, and providing equal opportunities. Additionally, the Company has developed training programs to enhance its employees' knowledge, skills, and abilities, incorporating online training and learning through the e-Learning system. This allows employees to engage in self-directed learning and review knowledge at their own pace. The Company fosters open communication channels for employees to voice their opinions and organizes ongoing internal and external activities, facilitating continuous interaction between executives and staff to foster positive labor relations. Additionally, it prioritizes data security, developing robust software systems to enhance confidence in data protection, thereby bolstering employee morale and fostering a sense of pride in contributing to the organization's sustainable growth and value delivery to external stakeholders.

The Company has recruited and selected employees with equality and fairness to ensure that quality personnel join in driving various missions. A policy outlined in the Code of Conduct covers labor practices, including the prohibition of child labor, the commitment to fair operations and competition, and the rejection of forced labor, while also providing a suitable and safe working environment. Additionally, the Company offers compensation consistent with operating results and promotes the potential of employees through training and development to enhance their skills and abilities, thus offering good opportunities for continued advancement within the Company.

Employment

The Company is aware that running a business in an environment where society, the economy, the environment, and technology are constantly changing calls for employees who are knowledgeable, competent, and high potential as well as adaptable enough to support the Company's operations and achieve success in line with its objectives. The Company has a well-structured manpower plan with annual reviews to

ensure sufficient staffing, reducing excessive working hours. It hires employees with attractive compensation packages, offering pay above the market average. Therefore, the Company has planned manpower, recruitment process, and attracted high-potential targeted employees from both internal and external personnel who are qualified in accordance with the corporate culture to be a part in driving the Company.

The Company has improved its recruitment and selection methods to increase the personnel with knowledge, experience, and diverse abilities from outside (Mid-career) by using Psychometric Tests. These tests assess personnel potential in order to attract quality personnel to join in driving the various missions of the company, both present and future. In addition, the Company has an initiative to provide employment opportunities for young people and new graduates by participating in final orientation sessions that offer guidance on job preparation, as well as advice on agricultural techniques and industry knowledge.

The Company selects employees on a fair and equitable basis, focusing on equality and fairness in the recruitment process without discrimination. It ensures equal opportunities for all, prohibits the use of child and forced labor, and provides equal access to employment opportunities for individuals, including those with disabilities and from disadvantaged groups. In addition, the Company emphasizes providing a safe working environment, promoting good occupational health, and strictly protecting employees' personal information. Some employees are recruited from nearby communities, and a psychometric test is used as part of the recruitment process to screen candidates with suitable qualifications that align with the Company's mission.

The Company has established operational guidelines related to the obligations of the benefit and retirement plans for employees, who are key stakeholders and the main driving force of the organization (201-3). These guidelines include:

- The retirement plan in the Company's employment regulations, Section 9, Part 1, Clause 3, states that employees who reach 60 years of age will cease to be employed by the Company on January 1 of the following year. If employees are capable of continuing to work and wish to do so, the Company may consider allowing them to remain employed, subject to

senior management approval. In 2024, three employees who retired were considered for the continuous employment program and were hired as permanent employees.

- At the end of 2024, the Company estimated employee benefit and retirement plan obligations totaling Baht 1,553,507,295.96 and paid compensation to employees in accordance with the Labor Protection Act B.E. 2541 (1998) and the Labor Protection Act (No.7) B.E. 2562 (2019), amounting to Baht 56,455,253.33.

Labor Management and Labor Relation

The Company has policies and practices of the Company that focus on treating employees equally and fairly to all employees in terms of compensation, benefits, and welfare provisions. Additional benefits, such as accommodation and travel expenses for employees required to work in other provinces, are offered as incentives to help the organization attract and retain talented employees, training, safety and occupational health, and further growth in work including allowing employees to express their opinions and participate in activities. Organize a survey of employee satisfaction and engagement with the organization, with the results obtained from the survey to improve, develop and promote employees in various fields, which will help employees feel satisfied and attached to the organization. The Company has measures in place to manage stress and maintain good mental health at work, such as Dharma training on various occasions, chanting, and a simple meditation called Vidisa Samadhi. This involves meditating three times a day: morning, noon, and evening, for five minutes each time, regularly every day. This is the application of meditation to work life. In addition, a fitness room with exercise equipment, such as treadmills, exercise bikes, and other machines, as well as a shower room to use after exercise, is provided for employees. The fitness room is available for employees to use before and after work to help them stay healthy, relieve stress, and prevent work-related diseases like office syndrome.

The Company encourages its employees to participate in or propose ideas for the organization's sustainability operations and provides measures for reporting complaints and whistleblowing. This aims to encourage stakeholders

to participate in the corporate governance process, helping the Board of Directors effectively monitor the Company's interests and address various issues promptly, which is one of the corporate governance duties. In instances where stakeholders have questions or suspect misconduct, violations, or non-compliance with laws, regulations, or the Company's Code of Conduct, the Company has established various reporting channels and measures to facilitate whistleblowing and promote good practices.

The Company believes that engaging with stakeholders is a crucial element in establishing the foundation for becoming a sustainable organization. This process enables the Company to learn from stakeholders' experiences, improve operations, and effectively manage risks, including employing appropriate methods to mitigate risks and potential side effects. The Company has continually analyzed and reviewed its stakeholder engagement process to comprehensively identify all stakeholder groups. Additionally, it has consistently emphasized the importance of stakeholder engagement through various activities and communication channels, including meetings, open discussions, opinion surveys, field visits, telephone calls, emails, and more.

In addition, the Company has established a savings cooperative for employees to promote savings and create financial security, with a total of 4,500 employees as members.

Training and Education

The Company recognizes that training, education, and skill-building for employees are crucial strategies for enhancing organizational quality, aiming to ensure that personnel possess the requisite knowledge, experience, and proficiency to efficiently execute their duties. To this end, the Company is committed to continuously enhancing employees' skills and knowledge. Technology is employed to support employee learning through online training and e-learning systems, giving them the opportunity to acquire comprehensive knowledge and review learning materials by managing their schedules independently. Additionally, technical management courses essential for job roles, such as production, maintenance, safety, and occupational health, are made available.

The Company has prioritized the training and development of its employees to enhance their knowledge, skills, and experience, while also continuously promoting ethics and integrity in their work. For instance, new employees are taken to participate in a two-day, one-night Dhamma practice at Wat Phra Ram 9 Kanchanaphisek, aimed at instilling values of honesty and integrity, encouraging them to be good individuals for themselves and for society. Additionally, the Company has established development courses in compliance with employees at all levels. These courses provide support for employees who are starting, offering a mentorship system that includes guidance, teaching, and support for their first four months. Moreover, specialized training courses relevant to their job roles are also offered. Training courses have been developed to support growth in the career paths of employees at all levels (Career Development), as well as new technology knowledge courses that have evolved, including unity, teamwork, bonding, encouragement, and readiness to work. These initiatives aim to enable employees to successfully perform assigned tasks with efficiency and take pride in their work, thereby supporting sustainable growth for employees in 2024.

Code of Conduct) [2-23]

<https://www.tpipolene.co.th/en/aboutus-en/code-of-conduct>

Human Rights Policy [2-23]

<https://www.tpipolene.co.th/en/sustainability/social-responsibility>

Employee Manual [2-23]

<https://www.tpipolene.co.th/en/aboutus-en/employee-handbook>

Privacy Policy [2-23]

<https://www.tpipolene.co.th/en/aboutus-en/personal-data-protection-policy-en>

Corporate Social Responsibility [2-23]

<https://www.tpipolene.co.th/en/sustainability/social-responsibility>

Anti-corruption policy [2-23]

<https://www.tpipolene.co.th/en/aboutus-en/anti-corruption-policy>



Target	Action Plan	Key Performance in 2024	Guidelines for improving future operations
<ul style="list-style-type: none"> - Maintaining the level of manpower so that the turnover rate of employees is at an appropriate level not exceeding 3.50 - Hiring employees with compensation and wage adjustments above the average in the labor market. - The rate of employment of personnel in the factory area each year is more than 50%. - Senior executives have visited the area to visit executives and employees every month. - Maintaining employee satisfaction and organizational engagement was at a good level with an average score of at least 75% or higher out of a full score of 100 in all opinion points. - The average number of training hours for all courses is not less than 20 hours per person per year. 	<ul style="list-style-type: none"> - There is an appropriate manpower plan and recruiting employees to meet the needs and have a sufficient number to perform the job. Annual planning is in place to ensure there are enough employees to operate effectively, reduce excessive working hours, and maintain a work-life balance for employees. - Proactive recruitment is conducted by visiting applicants from universities with relevant fields of study to introduce and publicize job openings within the Company's business group. Additionally, the Company introduces products and working techniques through its experts, such as organizing activities for youth about to graduate. These activities provide advice and techniques for entering the agricultural field, engineering methods for construction work, and more, with the aim of inspiring and attracting employees. - Use technology to reach target groups, convenient, in line with the way of working in the New Normal era, which focuses on using online media as a tool for recruitment and job interviews. - Maintaining the level of manpower to keep the turnover rate of employees (Turnover Rat) at an appropriate level to motivate quality and efficient employees at work, with welfare provision in line with the current cost of living, such as housing benefits for employees working in factories in the provinces to retain and motivate employees. - Promoting diversity in employment, promoting equal employment, non-discrimination, setting employment rates in factory areas, providing equal employment opportunities, employment opportunities for people with disabilities and the elderly, providing employment opportunities for people with disabilities to create social sustainability, hiring people with potential disabilities to work in suitable positions. Currently, there are 26 people with disabilities currently employed under Section 23 of the Persons with Disabilities Empowerment Act B.E. 2550. 	<ul style="list-style-type: none"> - Maintaining the level of manpower to keep the turnover rate of employees at 2.53 (an appropriate level not exceeding 3.5) - The rate of employment of personnel in the factory area each year is more than 65.35%. - Employee satisfaction survey results in work have an average score of 84.05 out of 100 in all opinion points. - Survey of employee engagement towards the Company with an average score of 91.20 out of 100 in all opinion points with a total average of 84.05 - In 2024, the average annual salary adjustment result for most employees is at level B. - The Company has improved the form of training development through electronic systems (e - Learning) so that employees can learn the knowledge of each department from orientation to various production processes by making teaching materials in the form of One Point Lesson (OPL) and videos for convenience and understanding in learning. - The average number of training hours for all courses is 26.14 hours/person/year ^[404-1] 	<ul style="list-style-type: none"> - The rate of employment of personnel in the factory area each year is more than 65%. - Organizing training/development to prepare a development plan to increase the potential of employees to support the replacement of employees at the supervisor level and above. - The level of employee satisfaction and engagement with the organization is very good. - The Company will continue to improve and develop the training development model through electronic systems (e-Learning) so that employees can learn the knowledge of each department from orientation to various production processes by making teaching materials in the form of One Point Lesson (OPL) and videos for convenience and understanding in learning.

Target	Action Plan	Key Performance In 2024	Guidelines for improving future operations
<ul style="list-style-type: none"> - Provision of a potential assessment test (Psychometric Test) in important job positions to support the decision of the committee in job interviews to obtain qualified employees that are in line with the organizational culture. - Hiring employees with compensation and wage adjustments above the average in the labor market. Employees are hired with attractive compensation, offering compensation higher than the market average to motivate high-quality and efficient employees. Additional benefits are also provided, such as accommodation and travel expenses for employees who need to work in other provinces. These incentives help the organization attract and retain capable employees, while also improving long-term personnel efficiency. - The Company evaluates the performance of every employee according to their position level every 4 months. This means evaluations occur three times a year, in April, August, and December. The results of such assessments will be taken into account for determining knowledge and ability to perform jobs, planning training to develop work potential, and use for considering annual salary adjustments, as well as position promotions. - An annual salary adjustment is conducted for employees once a year, based on the month in which the employee begins working with the Company, continuing until they have completed one year or more. The criteria for considering the annual salary adjustment depend on two components of individual employee performance: the Performance score and the Attendance score, weighted at a ratio of 80:20. 	<ul style="list-style-type: none"> - Satisfaction of the training evaluation was 90% (measured by the evaluation form after the training was completed, scored 4.5 out of a full score of 5). - Statistics of new employees of the organization at 8.84% and employees leaving the organization at 7.30% ^[401-1] - The return to work statistics and the employee retention rate after taking parental leave was 100% and 87.50%, respectively. - Transfer of employees The minimum number of days notified to employees is at least 15-30 days prior to the transfer of work, as specified in the employment agreement. ^[402-1] - The Company has implemented Total Preventive Maintenance activities to enhance productivity. A Small Group Activity comprising relevant personnel has been established to brainstorm ideas and propose guidelines for improving machinery and work procedures. The aim is to minimize losses and increase productivity by 2024, which could result in significant cost reduction, potentially saving Baht 16,314,988 		

Target	Action Plan	Key Performance in 2024	Guidelines for improving future operations
	<ul style="list-style-type: none"> - The performance appraisal form has been updated to align with current work practices, comply with Thai labor standards and labor laws, and emphasize human rights. The Company is committed to adhering to international human rights principles and labor standards, including the United Nations' Universal Declaration of Human Rights, the International Labour Organization's Declaration on Fundamental Principles and Rights at Work, the Thai Labor Protection Act B.E. 2560 (2017), and respecting the International Labour Organization (ILO). - Have established Code of Conduct policy of TPI Polene, which covers the practice of each other with respect to human rights principles, taking into account benefits and equality, discrimination, fair labor, security, support and respect for the political rights of employees, etc., and provide monitoring, evaluation and review systems for all employees to adhere to. - Have established regulations and treat work labors fairly with no irrelevant employment and does not support for the use of child labor under the age of 18 and informal workers who are not protected by law as well as providing or never encouraging child labor to perform tasks that are harmful to hygiene or in environments that are harmful to hygiene and safety, or any tasks that are prohibited by law. The Company verifies applicants' employment history information in accordance with the HR Department's hierarchy of command, as specified in the HR Department's SOP and WI (Work Instructions). - Senior executives have visited the area to visit executives and employees every month. 		

Target	Action Plan	Key Performance in 2024	Guidelines for improving future operations
	<ul style="list-style-type: none"> - The Company has conducted a survey to determine how satisfied and committed its employees towards the Company. Based on the survey's findings, the Company will take care of, develop, and advance its employees in a variety of ways, which will help them feel satisfied and committed to the Company and make them happy and devoted. A very high degree of employee satisfaction and organizational dedication is the outcome of their reaching their full potential. - The Company has measures in place to receive complaints, conduct investigations, implement corrective actions, follow up on those actions, and determine appropriate practices as instructed until completion. - The Company has also established a savings cooperative for employees to promote their savings and create their financial security. This cooperative is shared with employees of TPI Poline and its affiliated companies, totaling 5,029 members. - An independent and fair committee has been established in the investigation in case of non-compliance with the policy and established regulations whereby the accused have the right to resolve the allegations for them. - The Company engages in activities aimed at fostering good relationships between executives and employees. For example, during festivals, there are events such as a blessing event on New Year's Eve and a water pouring ceremony on the occasion of the Songkran Festival, both intended to seek blessings from executives. Collaborative efforts include donating clothes, leftover items, and medicine to the underprivileged. Additionally, executives and employees participate in blood donation organized by the Thai Red Cross every four months - Preparing and increasing the potential of employees to be able to immediately replace those at the supervisor level and above, this will result in the employees' willingness to work with dedication. 		

Target	Action Plan	Key Performance in 2024	Guidelines for improving future operations
	<ul style="list-style-type: none"> - A welfare committee is formed, made up of employer and employee representatives (Election of employees) as required by law to take care of issues related to employment conditions, where the employees supervised under the agreement concluded at the meeting make up 100% of the total number of employees ^[2-30]. - The Company has listened to opinions and suggestions from employees, using them as guidelines for improvement and good management. Meetings will be held every three months. In 2024, the Company received recommendations for improvements and has already taken action. For example, improvements include upgrading the shuttle service to an air-conditioned bus, improving and expanding the parking lot for cars or motorcycles, renovating residences, expanding and renovating restrooms, and installing lighting, etc. - Training on human rights processes or policies such as the Personal Data Protection Act (Practical) and the Personal Data Protection Act (Processes and Practices) and its process and guidelines, as well as the Company's Code of Conduct. Additionally, this policy undergoes annual review through the Company's group Line channel. The training comprises two video clips with a knowledge test before and after, aimed at ensuring that employees possess appropriate knowledge, understanding, and compliance consistent with sustainable business operations. 		

Target	Action Plan	Key Performance in 2024	Guidelines for Improving future operations
	<ul style="list-style-type: none"> - Formulate personnel development and training policies, as well as treating employees by striving to develop the organization into a learning organization, enhancing culture and work atmosphere, promoting teamwork, providing fair returns, retaining safety and maintaining the work environment, as well as focusing on the development, transfer of knowledge, and capability of employee, listen to comments and suggestions from employees at all levels equally and equitably. - An annual survey is conducted to assess training needs, and corresponding training sessions are planned accordingly. This includes the integration of a satisfaction survey to evaluate the effectiveness of the training outcomes. Evaluation of the training encompasses several aspects, including the achievement of objectives, instructor performance, and the delivery of training sessions. - The Company has enhanced the training development model by implementing an electronic system (E-LEARNING), allowing employees to acquire diverse knowledge pertaining to each department, ranging from orientation to various production processes. Teaching materials are prepared in the form of One Point Lesson (OPL) and videos for ease of learning and comprehension. These resources are accessible from any location. - The Company offers training courses tailored to specific job positions, career development programs to support employees at all levels, courses on emerging technologies to enhance efficiency in task performance, and initiatives to foster pride in their work while supporting sustainable growth for employees. 		

Summary of Employee Satisfaction and Engagement Survey

No.	Opinion Point	Average Score	Percent	Level of Satisfaction/Engagement
Opinions on Job Satisfaction				
1.	Management and Administration	4.09	81.86	Very satisfied
2.	Supervisors	4.00	79.98	Very satisfied
3.	The Process	4.26	85.15	Most satisfied
4.	Working Environment	3.96	79.12	Very satisfied
5.	Personnel Development	4.07	81.39	Very satisfied
6.	Welfare and Compensation	4.10	81.96	Very satisfied
	Average Score on Job Satisfaction	4.08	81.56	Very satisfied
Opinions on Employee Engagement				
1.	Operations to Achieve the Company's Objectives	4.51	90.14	Most satisfied
2.	Pride and Loyalty to the Company	4.61	92.26	Most satisfied
	Average Score on Employee Engagement	4.56	91.20	Most satisfied
	Total Average Score	4.20	84.05	Very satisfied

Employee Satisfaction Development Project

As part of the satisfaction survey conducted by the Company, various suggestions were identified, highlighting the need for improvements or additional actions to enhance employee satisfaction. In 2024, several activities were implemented, including:

- The project involving the installation of a stumbling block at the bridge exit from the plaza to slow down vehicles driving down from the bridge.
- The project involving the replacement of the employee shuttle bus from a fan bus to an air-conditioned bus on the Saraburi and Phra Phutthabat routes.
- The project involving the adjustment of the landscape around the pond at the Home & Hill residence to make it more convenient for employees to use as a walkway, the adjustment of the landscape and expansion of the parking area for cars and motorcycles beside the pond behind Apartment A, the adjustment of the landscape of the road in front of the parking lot (repair area 02).
- The project involving the improvement of the football field and the construction of a clubhouse at the Home & Hill residence, the creation of a road from the parking lot to connect to Mittraphap Road, the construction of a roof to provide shelter from the rain while waiting for the bus, the arrangement of a temporary motorcycle parking area for employees who come to buy food at the cafeteria in the administration building.
- The project involving the improvement of the cafeteria in the administration building.
- Other activities such as the installation of a tire inflator for cars and motorcycles in the area of the Home & Hill residence and the motorcycle parking area of the ESG building, and the creation of an opening-closing door for stairs to prevent dogs from going up to the office building, etc.

Employee Turnover Rate [401-1]

Information as of December 31, 2024

Personnel Composition Criteria		New employees of the organization						Employees left the organization					
		2022		2023		2024		2022		2023		2024	
		Number (people)	Percent	Number (people)	Percent	Number (people)	Percent	Number (people)	Percent	Number (people)	Percent	Number (people)	Percent
Total		803	11.11%	769	10.84%	606	8.84	559	7.74%	477	6.72%	501	7.31%
Gender	Male	650	80.95%	653	9.20%	465	6.77	453	6.27%	381	5.37%	395	5.76%
	Female	153	8.99%	116	1.63%	141	2.06	106	1.47%	96	1.35%	106	1.55%
Age Range	Age < 30 years	521	7.21%	488	6.88%	363	5.30	226	3.13%	150	2.11%	160	2.33%
	Age 30 — 50 years	276	3.82%	272	3.83%	229	3.34	250	3.46%	216	3.04%	211	3.08%
	Age > 50 years	6	0.08%	9	0.13%	14	0.20	83	1.15%	111	1.56%	130	1.90%
Work Area	Head office	181	2.50%	169	2.38%	352	5.13	185	2.56%	192	2.71%	210	3.06%
	Saraburi Cement Plant	458	6.34%	250	3.52%	179	2.61	293	4.05%	218	3.07%	223	3.25%
	Concrete Tile and FCB Plant, Saraburi Province	145	2.01%	329	4.64%	57	0.83	57	0.79%	51	0.72%	46	0.67%
	LDPE Plant, Rayong Province	19	0.26%	21	0.30%	18	0.26	24	0.33%	16	0.23%	22	0.32%

Note: The percentages shown in the table are calculated in relation to the total number of employees in each year (Total number of employees in 2022, 2023, and 2024 are 7,226 persons, 7,096 persons and 6,857 persons respectively. In 2024, the employees consisted of 5,790 males and 1,067 females.

Employee ⁽¹⁾	2022	2023	2024
Employees of the organization (Persons)	7,226	7,096	6,857
New employees of the organization (Persons)	803	769	606
Employees left the organization (Persons)	559	477	501
Employees with disabilities (Persons)	26	24	25
Percentage of Employees with disabilities in total workforce (%)	0.36	0.34	0.36
Employee remuneration (excluding executives) (Million Baht) ⁽²⁾	6,333	6,826	6,123
Voluntary employee turnover (Persons)	N/A	477	501
Voluntary employee turnover rate in total workforce (%)	N/A	6.72	7.31

Remark: ⁽¹⁾ The Company's employees do not include employees in subsidiary companies.

⁽²⁾ Employee remuneration includes salary, commissions, bonuses, allowances and other benefits.

Benefits Allocated to Employees [401-2]

Rights / Welfare / Benefits	Full Time	Part Time
Life insurance	✓	✓
Accident insurance	✓	✓
Medical expenses (Self)	✓	✓
Medical expenses (father, mother, spouse, child)	✓	✓
Medical treatment in a corporate medical facility	✓	✓
Entitlement to paternity leave	✓	✓
Child tuition	✓	✓
Maternity allowance	✓	-
Rights to use the organization's nursery and child development	✓	-
Severance pay or retirement	✓	✓
Stock ownership	✓	-
Payment of contributions to the provident fund	✓	-
Professional fee increase	✓	-
Ordination allowance	✓	-
Loan	✓	-
Funeral Cremation	✓	✓
Employee shuttle service	✓	✓
Special area (fixed house rent)	✓	-
Overtime pay and holiday pay	✓	✓
Expenses for traveling to work in the country and abroad	✓	✓



Turnover rate statistics and employee retention rates after taking parental leave [401-3]

Case of Leave	Number of Employees (Person)		
	2022	2023	2024
Number of employees who are eligible for parental leave	1,100	1,069	1,067
Number of employees taking parental leave	26	40	27
Number of employees returning after the end of the parental leave period	25	40	27
Number of employees who returned after the end of the parental leave period and continued to work for the next 12 months	29	25	35
Return to work rate ⁽¹⁾ who returned to work after the leave period ended (%)	96.15	100.00	100.00
Retention rate ⁽²⁾ who returned to work after the leave period ended (%)	100.00	100.00	87.50

- Note**
- (1) Return to Work Rate = (Number of employees returning to work after the end of the parental leave period/Number of employees who have taken parental leave) x 100
 - (2) Retention Rate = (Number of employees returning to work after the end of the parental leave period and continuing to work for the next 12 months/Number of employees returning to work after the end of the parental leave period in the previous reporting period) x 100

Number of training hours [404-1]

Unit: Hour/Person/Year

Employee Training Information	2022	2023	2024
Average number of training hours	23.72	22.49	26.14
Average number of training hours classified by gender			
Male	24.40	23.47	28.80
Female	8.88	16.99	11.70
Average number of training hours classified by employee group			
Top Executive	45.75	66.75	43.50
Executive Level (AVP/VP/SVP)	10.19	5.79	8.64
Manage level (ASST.DEPT.MGR. — DEPT.MGR.)	5.19	5.99	9.46
Command level (ASST.SUP. — SECTION MGR.)	16.34	15.42	20.48
Operating level (OFFICER)	25.56	24.23	28.06

Remark: The Company's employees do not include employees in subsidiary companies.

Average number of employee training hour and the training costs for employees within the company and its subsidiaries.

Number of training hours *	2022	2023	2024
The target is 20 hours per person per year.	24.47	22.49	26.14
Training expenses for companies and subsidiaries**	2,739,308.95	4,157,011.13	3,681,223.34

Remark: * Training within the Company and its subsidiaries is primarily conducted by internal trainers.

The Company evaluates the performance of employees three times a year in April, August, and December, in order for employees to develop and improve their operational performance regularly. All employees at all levels (100%) receive performance evaluations from supervisors according to the Performance Assessment Form of the Company. [404-3]

In 2024, the Company established a training plan for employees to develop both soft skills and hard skills through internal and external training sessions, totaling 918 courses.

Human Resource Development Program total 918 courses as follows: - [404-2]

Course Type*	Number of courses	Number of people	Benefits
1. Business Administration	114	5,691	Boost leadership skills, such as driving human resource within the organization to accomplish their task as targeted.
2. Technical	484	16,177	Focus on improving skills, employee efficiency with learning, especially professionals, to encourage employees to show their full potential.
3. Technology & Engineering	51	148	In order to adapt the organization to keep pace with the digital transformation in technology advancement and engineering innovation
4. Occupational Health and Safety and Environment	108	5,908	Organize safety work to reduce the risk of illness, injury or death and care for the quality of lives of personnel within the organization.
5. Environmental Management	74	3,639	Environmental management resulting from the use of assets, impacts on employees and society, so that appropriate management concepts can be proposed.
6. Quality System	87	4,170	Quality control and assurance of the department by implementing quality management policies to build confidence and to confirm international standards.

Remark * The above-mentioned courses include hard skill courses, which required specialized skills for the profession, and soft skill courses, which requires performance skills that allow individuals to work and communicate effectively with others.

Employee Motivation and Retention

The Company has an Individual Development Plan (IDP) that identifies the potential areas for employee development in preparation for individual career advancement plans, such as training courses, on-the-job training, coaching, project assignments, etc.

The individual development plan between employees and supervisors evaluates the progress of self-development and is discussed within the department. This ensures that potential development is continuous and builds a foundation for preparing employees for career growth. The Company's personnel potential assessment framework applies to the same standards across all positions and lines of work. The results of the annual performance assessment are presented to executives in hierarchical order to process the outcomes for promotions and annual compensation adjustments, in line with the organization's expansion.

The evaluation results determine the promotion rate of employees in the Company as follows:

Year	2022	2023	2024
Promotional rate	5.33%	0.86%	2.96%

The results of these operations increased employee job satisfaction and engagement with the Company to 84.05%, while the employee turnover rate decreased to 2.53% in 2024, from 2.67% in 2023.



Safety, Occupational Health and Environment in the Workplace [3-3]

The Company is strongly and seriously committed to occupational health and safety management, prioritizing its occupational health and safety management system as a core aspect of business operations. It strictly adheres to all occupational health and safety requirements and continuously works to improve and prevent hazards, including work-related injuries and illnesses, for employees, business partners, contractors, and stakeholders involved in its operations. Additionally, the Company assesses work-related risks across all business processes, including both new projects and ongoing operations, to ensure a safe working environment. The Company also emphasizes cultivating and continuously raising awareness of workplace safety among employees and related parties to foster a strong safety culture. This includes shared safety values and a clear safety framework “Stop, Report, Wait” aimed at achieving a common goal: preventing and reducing hazards, accidents, and work-related illnesses, minimizing potential losses to life and property, and mitigating any impact on surrounding communities and the environment. Additionally, the Company promotes an organizational culture of safety and encourages cooperation among workers, personnel at all levels, and executives.

Operational Goals

Targets for 2024	Performance in 2024	Targets for 2025	Targets for 2030
• Number of work-related fatalities among employees and business partners: 0 case	0 case	0 case	0 case
• High-consequence work-related injury rate for employees, business partners, and contractors: 0 case	0 case per 1 million working hours	0 case per 1 million working hours	0 case per 1 million working hours
• Occupational disease rate: 0 case	0 case per 1 million working hours	0 case per 1 million working hours	0 case per 1 million working hours
• Lost Time Injury Rate (LTIR) for employees	0.422 case per 1 million working hours	< 0.4 case per 1 million working hours	0 case per 1 million working hours
• Lost Time Injury Rate (LTIR) for business partners and contractors	0 case per 1 million working hours	0 case per 1 million working hours	0 case per 1 million working hours

Target	Action Plan	Key Performance in 2024	Guidelines for improving future operations
<ul style="list-style-type: none"> - A Zero Accident Organization 1. The number of fatalities at work is zero. 2. The rate of high-impact work-related injuries is zero. 3. Occupational illness and disease rate is zero 	<ul style="list-style-type: none"> - Establish occupational health, safety and environmental policies to safeguard occupational safety and work environment for workers, contractors and subcontractors, including communities and stakeholders involved in the Company's operational activities, as well as establish operational safety manuals and supervise operations to comply with the manuals and procedures to ensure safety in the workplace. Accident and incident investigations are reported to determine solutions and be aware of preventing repeat accidents. Duties and responsibilities of employees are defined at all levels of safety work, where employees can refuse jobs at risk of accidents and illnesses and must reduce risk before performing in accordance with the requirements of the ISO45001:2018 Occupational Safety and Health System Standard ^{[403-1] [403-2] [403-7]} - Establish the Occupational Safety and Work Environment Committee to achieve collaboration between administrative representatives (MPT level) and employee representatives (Non-MPT level), consisting of representatives from employees at operating level at least 50% of the entire Committee, the representatives of the operating level are elected from each department, which requires at least one meeting per month in accordance with ISO 45001 as a platform to receive information from each department and communication through channels such as E-mail and public relations boards and follow up the progress of operations and future operational plans, etc. ^[403-4] - Provide services and support workers to access medical services such as primary medical treatment and emergency treatment at the Company's medical rooms, providing regular nurses and doctors every business day to employees and contractors with free of charge, and provide influenza vaccinations and COVID-19 vaccines to the Company's employees. The Company also focuses on the health of individuals around the plant, with mobile medical units being issued for public health check-ups. ^[403-6] 	<ul style="list-style-type: none"> - work-related fatalities among employees and workers from 2013 to present was zero - high-consequence work-related injuries was zero - Injury Frequency Rate (IFR) for employees / business partners and contractors recorded at 0.542 / 0.771 respectively. - Lost Time Incident Rate (LTIR) per million working hours in 2024 recorded at 0.422 / 0.771 for employees / business partners and contractors respectively. - A total of 18,683,374 work hours without lost-time injuries has been achieved, with no Level 3 emergencies reported during the reporting period. 	<ul style="list-style-type: none"> - Review knowledge about safety to employees and contractors, who perform their work in the Company to raise awareness of the prevention of accidents and occupational diseases. - Strictly comply with safety laws and requirements of ISO45001-2018 occupational safety system standards. - Utilize technology to enhance safety and promptness, such as requesting permission for hazardous work through an electronic system instead of using paper, allowing executives to monitor the status of hazardous work in real time.

Target	Action Plan	Key Performance in 2024	Guidelines for improving future operations
	<ul style="list-style-type: none"> - Provide occupational safety and health training for all employees and contractors before starting to work with total of 12 training courses: (1) Security Occupational health and work environment for general staff and new employees (2) Safety for driving forklifts for operating work, (3) Reviewing work safety in confined space (4) Initial firefighting, (5) Occupational Safety, Health and Work Environment Committee (OEC) (6) Work Safety Officers at Executive Level (7), Work Safety Officers at Supervisor Level, and (8) Review knowledge for crane supervisor, signaler and controllers of crane (stationary); (9) Mobile crane operator; (10) Occupational and environmental diseases; (11) Performance of duties as a crane operator, those giving signals to crane operators, those binding materials or those controlling the use of fixed crane; and (12) basic resuscitation (CPR) and use of a cardiac pacemaker^[403-5]. - An emergency response plan is established, along with an annual rehearsal of the plan. This includes preparedness for events such as fires, chemical spills, explosions, and radioactive leaks. Additionally, training sessions covering advanced firefighting, chemical spill containment, and emergency situation management are provided^[403-5]. - The Company has implemented Total Preventive Maintenance activities to enhance productivity. A Small Group Activity comprising relevant personnel has been established to brainstorm ideas and propose guidelines for improving machinery and work procedures. The aim is to minimize losses and increase productivity by 2024, which could result in significant cost reduction, potentially saving Baht 16,314,988.^[403-5] 		<ul style="list-style-type: none"> - The Company will utilize AI-powered CCTV cameras to monitor the activities of employees and contractors. If they fail to comply with safety regulations, the Security Department will be notified to take immediate action to control unsafe work. Additionally, CCTV cameras will be used to monitor entry and exit in hazardous areas. If unauthorized individuals enter or attempt to enter these areas, the Security Department will be alerted to inspect and prevent intrusions by unauthorized persons.

Target	Action Plan	Key Performance in 2024	Guidelines for improving future operations
	<ul style="list-style-type: none"> - Hazards are indicated as well as safety risk assessments in compliance with the Occupational Health and Safety Management System (ISO 45001:2018), the risk-owned workers analyze their own characteristics of the work operation and others involved, such as third parties and contractors in all processes, to identify potential hazards from operations and to assess potential opportunities and impacts to prioritize risk management, starting from Elimination, Substitution, Engineering Control, Management Control, use of personal protective equipment (PPE) to acceptable risky tasks, as well as ensure safety supervision and monitor risk management operations in accordance with plans and goals. ^[403-1] ^[403-2] - Preparation for work response by providing personal safety protective equipment for employees to use in operations and other safety protective equipment as required by law to prevent injuries and work accidents, which covers emergency response preparation, as well as business continuity management. ^[403-4] - The working environment is controlled by wearing personal safety protective equipment to prevent injury and accidents from work. The work environment is regularly measured and evaluated as required by law, such as air quality measurement, volume monitoring and light intensity Measurement, etc. ^[403-2] ^[403-4] 		

Target	Action Plan	Key Performance in 2024	Guidelines for improving future operations
	<ul style="list-style-type: none"> - A medical room is provided with on-site nurses and physicians to offer consultation and care regarding illnesses and injuries. First aid service from injuries is provided to employees and contractors, as well as monitoring health risks of employees, health check-ups are provided from the start of work, Health check-ups based on risk factors such as hearing fitness test and pulmonary checkup, Electrocardiogram Examination (EKG), in case of working in a place of confined air, etc., annual health check-ups, both general health check-ups and health check-ups based on occupational health risk factors, are provided with the Company's occupational medicine doctors and occupational health professionals, jointly determining the list of health check-ups of workers based on factors inside and outside the workplace. If the employees have abnormal health check-up results, they must visit the doctor and receive ongoing healthcare advice, as well as providing medical benefits (OPD) for employees, parents, spouses and legal offspring.^[403-3] - Supervise the performance of workers, outsiders and stakeholders in the operating area to strictly comply with the rules, safety regulations and regulations.^[403-1] - Basic Basic training is provided prior to commencing work for contractors and subcontractor workers. Safety and occupational health training is also conducted for business partners, contractors, and subcontractors. In 2024, a total of 5,749 workers successfully completed the training and commenced work. 		

Target	Action Plan	Key Performance in 2024	Guidelines for improving future operations
	<ul style="list-style-type: none"> - Communicate safety, occupational health and work environment policies, cultivate awareness and create a safe work culture, develop knowledge skills and organize activities in the areas of continuous promotion of health, safety, occupational health and work environments. ^[403-4] - The Company has established criteria for determining training courses in occupational health, safety, fire prevention, and suppression that are necessary for employees and contractors, appropriate for the job position, type of work to be performed, or risky activities. These courses aim to develop knowledge, abilities, and understanding of potential dangers that may cause accidents, as well as how to prevent and control these dangers while performing duties and the measures for performing jobs assigned with safety. Evaluation is scheduled to be carried out immediately, and training history will be stored. 		

Promoting and Healthcare for Employees's wellbeing

Because employees are the key drivers of business success, prioritizing their health is paramount. This not only facilitates the progression of the business but also ensures that employee well-being is not overlooked. Consequently, the Company has implemented various initiatives to safeguard employee health. To address this concern,

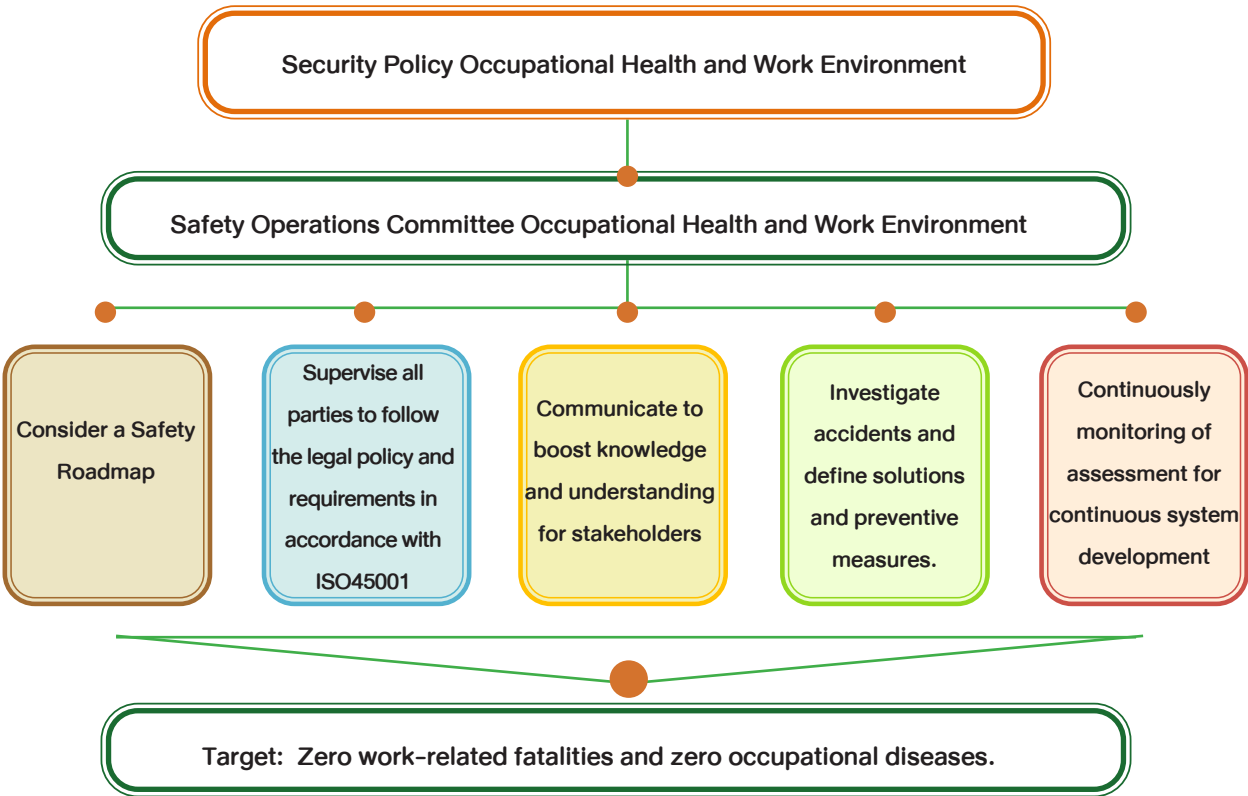
- An annual health check-up program for all employees, including specialized examinations for those working in high-risk areas, such as exposure to chemicals.
- In-house medical care is provided through a nursing room and on-site nurses offering health services.
- The project aims to create a suitable working environment that promotes a “Healthy” work culture, allowing employees to work safely and maintain a good quality of life.
- Preventive health promotion projects such as vaccination against important diseases such as influenza, COVID-19, tetanus, hepatitis B, and pneumonia.
- Medical welfare covers both outpatients and inpatients through health insurance provided by the Company.

These projects help reduce leave and turnover rates, while increasing employee productivity, leading to a happier and stronger organization. When employees are healthy, it has a positive long-term effect on the organization. In 2024, employees and contractors received their annual health check-ups from Medical Line Lab Co., Ltd. between August 21 and 30, 2024, with Dr. Pichai Sampathanukul serving as the occupational health physician.

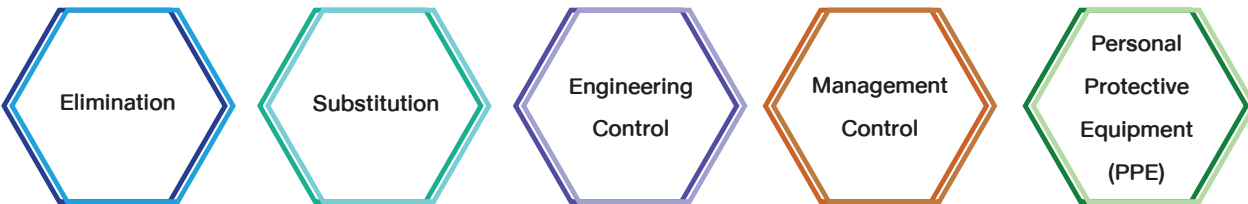


Management Structure of Safety, Occupational Health, and workplace Environment

The Company has set up a Safety Operations Committee for safeguard of Occupational Health and Environment, which consists of the management team and professional safety officers of the Company, to perform their duties and responsibilities for management of Safety, Occupational health, and Work Environment in compliance with the requirements of the Occupational Health and Safety Management System (ISO 45001:2018) and safety laws. The Company’s objective is no occupational accidents and no occupational illnesses or occupational illnesses from work.

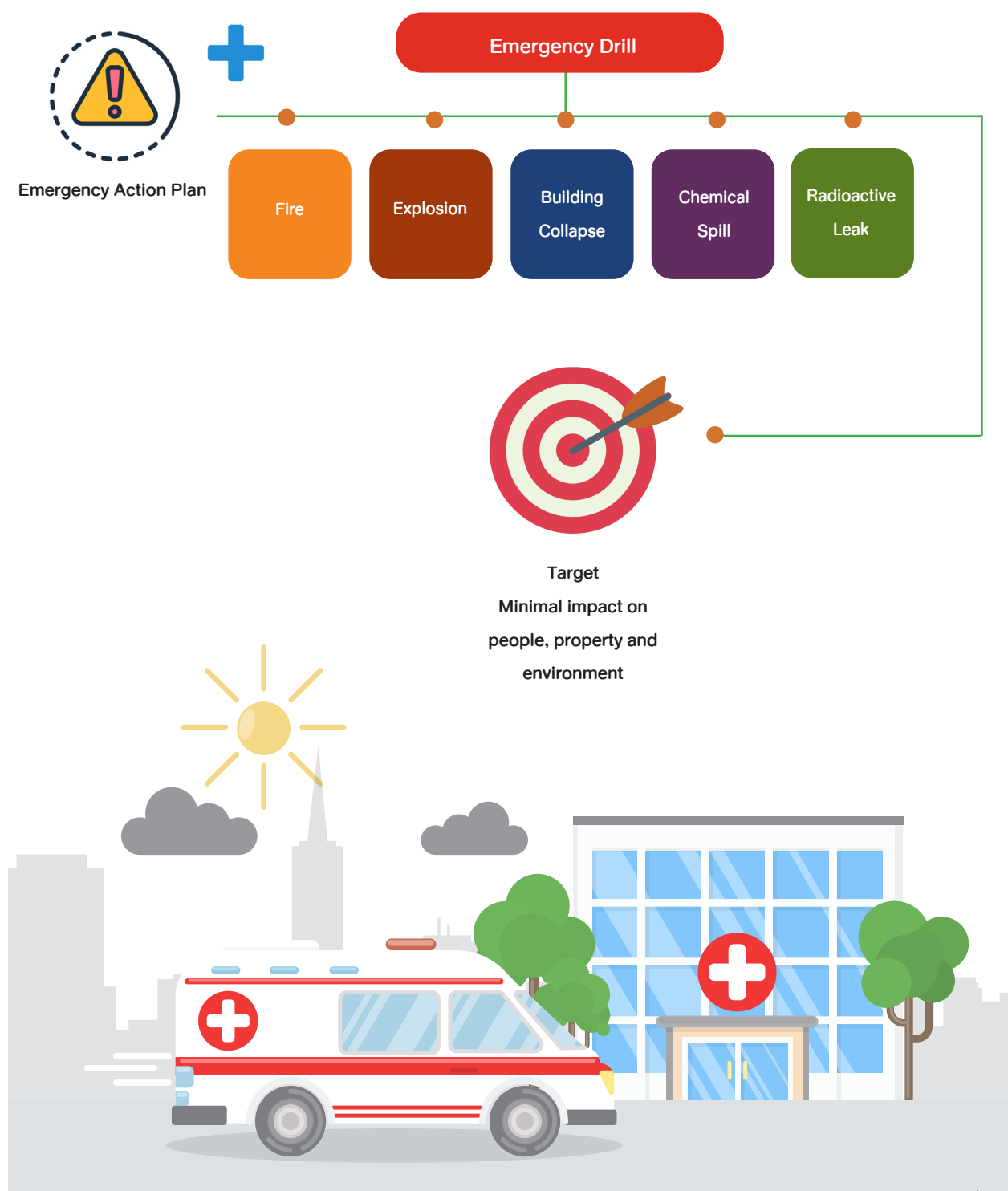


Risk Assessment and Risk Management Procedures Safety, occupational health and work environment [403-2]



Preparation and Response Measures for Emergency Situations [403-7]

The Company established an emergency response plan whereby every plant is required to prepare an emergency response plan which clearly defines roles, responsibilities, and operational procedures, as well as requiring rehearsals, annual emergency responses such as fire, chemical leakage, and boiler explosion. In this regard, there must be an assessment and rehearsal of such an emergency plan in order to apply suggestions to improve the efficiency of emergency response operations. The Company also provides training to add expertise to employees who are responsible for responding to emergencies, such as advanced firefighting training, chemical leakage prevention, and emergency management training.



Employee Training on Occupational Health and Safety [403–5]

The Company has implemented a training course on occupational health and safety aimed at preventing and suppressing fires, which is mandatory for all employees and contractors. Tailored to their respective roles, tasks, or involvement in risky activities, this course aims to enhance their knowledge, skills, and comprehension of potential hazards and accident causes. Participants will learn techniques for hazard protection and control while executing their assigned duties safely, thereby minimizing the severity of impacts on individuals and property. Additionally, the training equips each participant with the ability to effectively manage emergencies. The course is designed to undergo evaluation and documentation, with records stored in the training history archives.

Employee Training Record

Course Topics	Number of employees (persons)	
	2023	2024
Safety Occupational health and working environment for general and new employees	258	3,455
Occupational and environmental diseases	258	274
Primary Fire Extinguishing	258	274
Safety at work, forklift driving	172	178
Safety Board Vocational Education and Work Environment	25	0
Occupational Safety Officer, Executive Level	23	21
Occupational Safety Officer Level Supervisor	56	13
Review of crane operators, signal giver to crane operator Material binder or crane operator (stationary)	293	67
Mobile crane operator	40	0
Performing crane operator duties Signal giver to crane operator Material binder or spinning rig operator (stationary)	27	0
Primary resuscitation (CPR) and pacemaker use	21	0
Risk issues and safe working techniques	258	815
Environmental issues	258	1,137

Contractor Training Record

Training Program Topics	Number of Contractors Trained (persons)	
	2023	2024
Safety Occupational health and working environment for general and new employees	877	1,622
Occupational and environmental diseases	877	1,622
Primary Fire Extinguishing	877	1,622
Risk issues and safe working techniques	877	1,622
Environmental issues	877	1,622

Project Benefits

Employees and Suppliers / Contractors who come to work at the Company are required to understand the contents of the safety curriculum related to their own work conditions, especially the risks associated with their works, and be able to deal with those risks and cope with emergency situations that may occur. This is aimed at reducing the severity of impacts on people, property, production, and the environment. Consequently, each function is prepared to efficiently handle emergencies, ensuring continuous business operations. This resulted in an improvement in the Company's safety performance in 2024 compared to 2023 as follows:

- Lost Time Injury Rate (LTIR) per million working hours in 2024 was 0.422, a decrease of 0.115 compared to 2023.
- Total hours worked without any lost time incidents amounted to 18,683,374 hours.
- The rate of work-related illnesses among employees and contractors was 0 cases.
- Additionally, the training provided to contractors and business partners is part of our ongoing effort to promote sustainable business practices and collaboration.

Comprehensive workforce under occupational health and safety management system [403-8]

	Number (persons)	Percent
Employees and workers in the establishments controlled or supervised by the organization		
employees	6,921	100
workers	1,622	100
Employees and workers in the establishments controlled or supervised by the organization (and audited by the organization)		
employees	4,703	67.95
workers	456	28.11
Employees and workers in the establishments controlled or supervised by the organization (and audited by external organizations)		
employees	951	13.74
workers	96	5.92

Remarks: Employee refers to the Company's personnel (not including those in subsidiary companies).
Worker refers to personnel of other establishments, controlled or supervised by the Company to be in compliance with ISO 45001:2018 standards.

Table of establishments certified with ISO 45001 Occupational Health and Safety Management System of the Company [403-8]

	Number (persons)	Percent
Establishments controlled or managed by the Organization		
Cement plant	4,112	100
CRT and FCB plants	930	100
Head Office	1,288	100
LDPE and EVA plants	591	100
Total	6,921	100
Establishments controlled or managed by the Organization (and inspected by the Organization)		
Cement plant	4,112	100
CRT and FCB plants	0	0
Head Office	0	0
LDPE and EVA plants	591	100
Total	4,703	67.95
Establishments controlled or managed by the Organization (and inspected by External Organization)		
Cement plant	4,112	100
CRT and FCB plants	0	0
Head Office	0	0
LDPE and EVA plants	591	100
Total	4,703	67.95



Table of Work-related Injuries and Health Problems Data (403-9) (403-10)

Performance	2022	2023	2024
Fatality Rate of Employees (cases/million working hours)	0	0	0
Fatality Rate of business partner and contractors (cases/million working hours)	0	0	0
Number of employee fatalities (cases)	0	0	0
Number of business partner and contractor fatalities (cases)	0	0	0
High-impact work-related injury rate of employees (cases/million working hours)	0	0	0
High-impact work-related injury rate of business partners and contractors (cases/million working hours)	0	0	0
Number of employees injured due to high-impact work (cases)	0	0	0
Number of business partners and contractors injured due to high-impact work (cases)	0	0	0
Injury Frequency Rate (IFR) of employees			
(number of cases per 1 million working hours)	0.653	0.536	0.542
Injury Frequency Rate (IFR) of business partners and contractors			
(number of cases per 1 million working hours)	2.538	0.946	0.771
Lost Time Incident Rate (LTIR) of employees			
(Number of cases per 1 million working hours)	0.653	0.536	0.422
Lost Time Incident Rate (LTIR) of business partners and contractors			
(Number of cases per 1 million working hours)	1.015	0.946	0.771
Morbidity rate of occupational diseases of employees	0.00	0.00	0.00
Morbidity rate of occupational diseases of business partners and contractors	0.00	0.00	0.00
Working hours without Lost Time Accident in case of employees	22,237,755.00	22,979,705.00	18,683,374.00
Working hours without Lost Time Accident in case of business partners and contractors	2,078,400.00	3,806,400.00	3,596,768.00
Working hours of employees	16,846,515.00	16,782,566.50	16,597,644.50
Working hours of business partners and contractors	1,970,400.00	3,172,608.00	3,892,800.00
Level 3 emergencies (fire, chemical spill, explosion, radiation leak, and building collapse)	0	0	0

Note: The Lost Time Rate (LTR) is an occupational safety measure that tracks the amount of working time lost due to accidents that cause employees to be absent from work.

Definition:

1. The fatality rate per million working hours is the number of injuries resulting in death multiplied by the number of working hours, then divided by one million working hours.

$$\text{Fatality rate per million working hours} = \frac{\text{number of injuries resulting in death} \times \text{number of working hours}}{\text{one million working hours}}$$

2. The high-impact work-related injury rate per million working hours is the number of work-related injuries resulting in more than 180 days off work or loss of a limb, multiplied by the number of working hours, then divided by one million working hours.

$$\text{High-impact work-related injury rate} = \frac{(\text{number of work-related injuries resulting in more than 180 days off work or loss of a limb} \times \text{number of working hours})}{(\text{one million working hours})}$$

3. Lost time Injury Rate (LTIR) per million working hours is the number of lost time injuries multiplied by the number of working hours, then divided by one million working hours.

$$\text{LTIR} = \frac{\text{number of lost time injuries} \times \text{number of working hours}}{\text{one million working hours}}$$

4. Injury Frequency Rate (IFR) per million working hours is the number of accidents multiplied by the number of working hours per year, then divided by one million working hours.

$$\text{IFR} = \frac{\text{number of accidents} \times \text{number of working hours}}{\text{one million working hours}}$$

Job-related injuries [403-9]

Statistical data on deaths and injuries of employees and employees who are not considered employees but jobs and/or establishments are regulated by the organization.	Injury Type (/)										Number of working hours	Number (persons)	Mortality/ injury rate (calculated based on 1,00,000 working hours)
	Back and spine injuries	Bone fractures	Burns	Ear injuries (including tinnitus)	Facial injuries (eye, nose, and jaw)	Loss of digits and limbs	Repetitive stress injuries	Sprains, strains, and tears (soft tissue injuries)	Toxic exposure	Traumatic brain injuries (TBI)			
Deaths and injuries of employees													
Death from work-related injuries	0	0	0	0	0	0	0	0	0	0		0	0
High-impact work-related injuries (excluding deaths)	0	0	0	0	0	0	0	0	0	0	16,597,644.50	0	0
Work-related injuries lost time Incident	0	4	0	0	3	0	0	0	0	0		7	0.422
Work-related injuries, which can be recorded.	0	4	0	0	3	0	0	2	0	0		9	0.542
Deaths and injuries of employees who are not employees but their work and/or establishments are regulated by the organization (Suppliers/ Contractors)													
Death from work-related injuries	0	0	0	0	0	0	0	0	0	0		0	0
High-impact work-related injuries (excluding deaths)	0	0	0	0	0	0	0	0	0	0	3,596,768.00	0	0
Work-related injuries lost time Incident	0	2	0	0	0	0	0	1	0	0		3	0.771
Job-related injuries, which can be recorded.	0	2	0	0	0	0	0	1	0	0		3	0.771

Remark: Injuries related to high-impact tasks means work injuries that result in death or injury, caused by workers being unable to or unable to perform or unpredictable to fully recover until their health condition prior to injury within 6 months.

Work-related injuries, which can be recorded means, work injury, which results in any of the following cases: death, case of work stoppage, work restriction or transfer to another job, medical care in addition to first aid, loss of consciousness, serious injury diagnosed by a licensed doctor or licensed medical professionals.

Health Problems from Related Work. [403-10]

Statistical data on deaths and injuries of employees and employees who are not considered employees but jobs and/or establishments are regulated by the organization.	Types of health problems that arise (number)			Number (persons)	Rate of death (percent)
	Stress, depression or anxiety	Musculoskeletal disorders	Occupational lung disease		
Deaths and health problems related to the work of employees					
Death from work-related health problems	0	0	0	0	0
Work-related health problems (number)	0	0	0	0	0
Deaths and health problems related to the work of non-employees, but their work and/or establishments are regulated by the organization					
Death from work-related health problems	0	0	0	0	0
Work-related health problems (number)	0	0	0	0	0

NOTE: A recordable work-related health issue is defined as poor health resulting in any of the following: death, absence from work, work restriction or transfer, non-medical treatment from first aid, loss of consciousness, serious injury diagnosed by a physician or licensed medical practitioner.

HealthCare for Employees

Good health leads to a high quality of life and improved work efficiency. Therefore, the Company places significant importance on monitoring, preventing, and reducing the impacts on employees, both current and potential. This includes considering health in a global context (Global Health), such as HIV/AIDS, tuberculosis, malaria, cross-border epidemics like MERS, SARS, and COVID-19, as well as non-communicable diseases (NCDs) such as heart disease, diabetes, hypertension, obesity, and cancer. These efforts are supported by policies that focus on employee health and promote a safe working environment.

The Company has the following key health guidelines and action plans:

Key Health Guidelines and Action Plans

1. Infectious Disease Related Action Plan
 - 1.1 HIV/AIDS Prevention and Control
 - Provide employees with knowledge about HIV/AIDS prevention and treatment.
 - Support access to free screening and treatment services.
 - Create a plan to support people living with HIV to work with dignity.
 - Prevent discrimination and reduce stigmatization of people living with HIV in the workplace.
 - 1.2 Tuberculosis Prevention and Control
 - Organize annual TB screening program for employees.
 - Provide knowledge about symptoms and prevention of TB.
 - Organize a system for separating TB patients and support continuous treatment.
 - 1.3 Malaria Prevention and Control
 - Campaign to encourage employees to protect themselves from mosquitoes by using mosquito nets, applying Microne Knox and wood vinegar to repel mosquitoes, and spraying to eliminate mosquitoes in high-risk areas, such as places with stagnant water. Additionally, promote the use of self-protective measures, such as applying mosquito repellent and wearing tight clothing at night.
 - Monitor symptoms and arrange for screening if any symptomatic individuals are found.
 - Provide timely treatment and closely follow up.
 - Set up mobile malaria screening units, especially in communities with reported infections.
 - Develop a reporting and analysis system for disease outbreaks to enable timely disease control.
 - Support the use of Rapid Diagnostic Test (RDT) for rapid diagnosis.
- 1.4 Prevention and Control of Cross-border Epidemics (MERS, SARS, COVID-19, etc.)
 - Develop emergency plans and disease control measures
 - Preventive health promotion projects, such as vaccination against important diseases like Influenza, COVID-19, Tetanus, Hepatitis B, and Pneumonia, are planned to ensure that employees and communities can access vaccines (Access to Countermeasures). This includes coordinating vaccination appointments through government and Social Security Office-sponsored vaccination programs, which are provided free of charge. Transportation is also provided to assist employees in traveling to vaccination sites.
 - Provide hand washing facilities and personal protective equipment (PPE)
 - Implement social distancing measures and flexible working systems, such as working from home (WFH)
 - Have employee health screening and monitoring systems, such as temperature checks and periodic screenings.
 2. Action Plan on Non-Communicable Diseases (NCDs)
 - 2.1 Surveillance and Prevention
 - An annual health check-up program for all employees, including specialized check-ups for those working in high-risk areas.
 - In-house medical care is provided through a nursing room and factory nurses who offer health services.

- Medical welfare covers both outpatient and inpatient care through health insurance provided by the Company.
- A campaign to reduce risk factors, such as smoking, alcohol consumption, and inappropriate behavior.

3. Support and Rehabilitation of Employee Health

- Support programs for smoking cessation and weight control
- Organize programs to promote healthy eating habits
- Organize daily meditation sessions using a loudspeaker at work three times a day: morning, noon, and evening, with each session lasting 5 minutes. This is a method of incorporating meditation into the work life.
- Provide advice on nutrition and exercise, along with a fitness room equipped with exercise machines such as treadmills, stationary bikes, and other equipment. A shower room is also available for employees to use before starting work or after work to help maintain their health, relieve stress, and prevent work-related diseases such as office syndrome.

4. Roles of Occupational Health and Safety Committee

- Oversee and evaluate health and safety measures
- Promote employee training on health care and disease prevention
- Participate in developing disease prevention policies and practices
- Coordinate with public health agencies to ensure employees have access to treatment and medical services

5. Providing Knowledge and Building Community Collaboration

- Organize campaigns to educate people and local communities, such as through schools, temples, or local administrative organizations.
- Support the participation of Village Health Volunteer (VHVs) in providing information and monitoring the situation in the community.
- Cooperate with local community leaders and the private sector to support resources and knowledge.

6. Monitoring and Evaluation

- Prepare periodic employee health reports
- Evaluate the impact of implemented measures and make necessary improvements.
- Use health data to plan and develop long-term health policies

The Company has recognized the serious impact of various crises that have caused numerous deaths, illnesses, and social pressures, emphasizing the need to find ways to cope with emergencies. This includes ensuring access to medicines, vaccines, protective equipment, test kits, patient beds, and other essential resources. These events serve as important lessons, reflecting the severity of the crisis, and motivate us to analyze the causes, plan appropriate responses, and implement preventive measures to enhance preparedness for navigating daily life safely.

The Company recognizes that personnel are valuable resources for the organization and play an important role in driving the business toward sustainable growth. Therefore, the Company is committed to developing quality personnel while cultivating morality, ethics, honesty, and responsibility toward both the organization and society. Additionally, the Company supports and encourages employees to participate in social activities (Corporate Social Responsibility - CSR) because we believe that quality personnel are a key foundation for strengthening the stability and sustainable growth of the organization.

Community and Social Development Participation [3-3]

The Company aims to pursue its business operations under well-managed administration practices with an adherence to creating a corporate culture with good corporate governance in parallel with social conservation and environmental preservation in terms of safety, quality of life and conservation of natural resources. The Company also promotes energy efficiency and focuses on participating in the continuous development of communities and society to improve the quality of life of local people in the communities and society to be strong and grow sustainably.

Target	Action Plan	Key Performance in 2024	Guidelines for improving future operations
Create value and upgrade the quality of life of local people in the communities and society to grow sustainably.	<ul style="list-style-type: none"> - Improve production process of cement plants to use waste fuel up to 12% of coal substitutes. TPIPP purchase community waste from local producers who sort waste and to help reduce waste in the community, promote and create careers in the community, help reduce socioeconomic inequality, increase employment, increase economic value by purchasing waste from the communities in more than 16 provinces nearby the plants. - Conduct Community Relations: The Company has a production facility located in various community areas and has a proactive policy for all production units to provide assistance to support hygiene and reduce the impact of the pandemic without any request from the community, it supports surrounding communities and important societies as follows:- <ol style="list-style-type: none"> (1) Strengthen communities to be healthy, provide mobile medical services in a wellness program with TPI Polene to monitor illnesses Health Check-up Service To Educate Health Benefits of lung examination at surrounding communities in Kaeng Khoi District, Mauk Lek, Saraburi (2) The potential risk that may arise in 2024-2025 is the outbreak of Influenza A and Dengue fever, particularly during the rainy and winter seasons. Annual flu vaccination is an effective method to reduce the risk to the surrounding community. (3) Supported residential renovation projects in conjunction with Kaeng Khoi District Quality of Life Development Fund and help repair/build homes for disabilities and chronic illnesses patients who are shortage of housing in the area of Kaeng Khoi District. Saraburi, etc. 	<p>Corporate Social Responsibility</p> <p>Corporate social responsibility activities at TPI Group of Companies Poline are structured around two primary domains: Community Relations and Corporate Social Responsibility (Corporate CSR). In 2024, TPI Polene Group allocated a budget of Baht 28,444,751.14 for construction materials and health products to support communities and society in all aspects. Work in both areas has been carried out concurrently, which can be summarized as follows:</p> <p>Community Relations [413-2]</p> <p>TPI Polene has production plants located surrounding communities and addressing important societal needs as follows:</p> <ul style="list-style-type: none"> • Offering mobile medical unit services as part of the Good Health with TPI project. These services include monitoring illnesses, providing health check-ups, and disseminating health knowledge to the surrounding communities • Blood donation activities involving executives, employees of TPI Polene Group, and contractors, resulting in the donation of over 240,000 cc of blood. • Tree planting to increase green space project in 2024 involved planting 2,000 trees at the TPI Cement Plant in Saraburi Province 	<p>Continuously coordinate with the community to accept feedback, opinion and expectations to improve the Company's operations, including its affiliates, as well as to expand the efficiency of community and society development and improve quality of life, promote sustainable growth in communities and society.</p> <p>The Company has implemented the strategies to build and maintain relationships with the community as follows:-</p> <ol style="list-style-type: none"> 1. Promote the hiring of employees from the surrounding community and employ local labor to support sustainable livelihoods alongside the Company's operations.

Target	Action Plan	Key Performance in 2024	Guidelines for Improving future operations
<ul style="list-style-type: none">- Conduct corporate social responsibility (CSR)- According to the 2024 Community Satisfaction Survey, the CSR activities of TPI Polene Group, mostly satisfied to the community, including scholarship programs. TPI Polene Group has implemented educational opportunities for well-educated youth, who are well behaved, but disadvantaged, aiming to share the burden of parents. The scholarships are awarded to schoolchildren in the community area adjacent to the Saraburi province from kindergarten to undergraduate level, starting in 2011 and upon graduation, they are employed to work in TPI Polene Group, creating a strong bond with the community as a single family.- Supporting the chemical-free agriculture project for lunch with the objective of<ol style="list-style-type: none">1. To provide students at Ban Subbon School with the knowledge and skills in chemical-free vegetable farming.2. To have a learning resource for growing vegetables using chemical-free agriculture in community schools.3. To enable Ban Sub Bon School students to consume and promote good nutrition.4. To increase income for Ban Sub Bon School students by selling leftover vegetables from cooking to the Company's employees.	<ul style="list-style-type: none">- Conduct corporate social responsibility (CSR)- According to the 2024 Community Satisfaction Survey, the CSR activities of TPI Polene Group, mostly satisfied to the community, including scholarship programs. TPI Polene Group has implemented educational opportunities for well-educated youth, who are well behaved, but disadvantaged, aiming to share the burden of parents. The scholarships are awarded to schoolchildren in the community area adjacent to the Saraburi province from kindergarten to undergraduate level, starting in 2011 and upon graduation, they are employed to work in TPI Polene Group, creating a strong bond with the community as a single family.- Supporting the chemical-free agriculture project for lunch with the objective of<ol style="list-style-type: none">1. To provide students at Ban Subbon School with the knowledge and skills in chemical-free vegetable farming.2. To have a learning resource for growing vegetables using chemical-free agriculture in community schools.3. To enable Ban Sub Bon School students to consume and promote good nutrition.4. To increase income for Ban Sub Bon School students by selling leftover vegetables from cooking to the Company's employees.	<ul style="list-style-type: none">• Chemical-Free Agriculture Program for School Lunch 2024 at Ban Subbon School, Saraburi Province. This program aims to create a learning source on chemical-free farming practices within the community school. It aligns with the business and capabilities of the organization, utilizing the knowledge of employees in chemical-free agriculture and accounting, as well as experts in organic fertilizer use from the company's executive office and the Research and Development Department for quality control. <p>Economic and Social Returns</p> <ul style="list-style-type: none">• Students can sell the produce to generate additional income.• The school has a source of safe food for school lunches, reducing food costs.• The company can use this project as a case study to promote organic farming and build positive relationships with the community.• The school generates an average income of 1,200 Baht per harvest from the sale of organic agricultural products, and students can sell the produce to create additional income.• There are meals made from chemical-free vegetable produce for school lunches at least once a week, and at least one nutrition promotion activity is organized.	<p>2. Support social and cultural activities in the community, such as assisting in the preservation and protection of cultural heritage, particularly in areas affected by the Company's operations. The Company also continues to support the chemical-free agriculture program for school lunches every year at Ban Subbon School in Saraburi Province, creating a learning source for chemical-free farming in the local school. Additionally, the Company offers mobile healthcare units to serve and check the health of community members.</p> <p>3. Contribute to the development of infrastructure or public utilities in the area, such as supporting housing improvement projects in collaboration with the Khao Kho District Quality of Life Development Fund. This initiative helps citizens, including the underprivileged, disabled, and chronically ill, repair and build homes in the Khao Kho District of Saraburi Province.</p>

Target	Action Plan	Key Performance in 2024	Guidelines for improving future operations
		<ul style="list-style-type: none"> Students maintain good health from eating chemical-free food and can share the knowledge with future generations and their families. <p>Economic benefits or value or returns the Company receives from the Project that helps solve social issues</p> <ul style="list-style-type: none"> The project aligns with SDG 8, Decent Work and Economic Growth, promoting sustainable, inclusive economic growth and decent employment. Revenue: The company may generate additional income by selling organic fertilizers used in the project to farmers in the community, increasing future sales in the community. Profit: Reduced raw material costs by using self-produced organic fertilizer. Reduced Costs: Lower expenses in sustainable project development as internal resources are used. Reduced Risk: The company can use this project as a case study to promote organic agriculture, build positive relationships with the community, reduce risks related to the company's image, and create a customer base that trusts the company's products. 	<p>4. Provide channels for the community to communicate and offer suggestions to the company. The Company ensures transparency by disclosing news and operational results accurately and promptly through the Polynews media platform. Furthermore, it disseminates knowledge of human rights within the community and collaborates with the community committee</p>

Target	Action Plan	Key Performance in 2024	Guidelines for improving future operations
		<p>Corporate CSR [413-2] Community involvement and development</p> <p>In 2024, TPI Polene Group continuously supported social and community assistance, as summarized below:</p> <ul style="list-style-type: none"> • Cement plants can use approximately 12% municipal waste to replace coal. • Scholarship Project: TPI Polene Group has implemented a project to provide educational opportunities for youth who excel in academics and behavior but lack financial resources, easing the burden on their parents. The Company has continuously provided scholarships from kindergarten to Bachelor's degree level. The project began in 2011 after graduation; these students were hired to work for the Company, creating a strong bond with the local community, much like family members. In addition, scholarships totaling Baht 295,000 per year have been provided to 6 schools, from kindergarten to lower secondary level, for 31 consecutive years. • TPI Polene Group, in collaboration with the Environment for Better Life Foundation, donated 263 foldable wheelchairs and 100 stretcher beds to 23 hospitals in the North. • In 2024, a total of 20,000 blankets were donated in the North, through the Thai Social Investment Foundation for patients and people affected by the cold weather. 	

Target	Action Plan	Key Performance in 2024	Guidelines for improving future operations
		<ul style="list-style-type: none"> The following products were donated by TPI Polene Group: 317 tons of TPI cement products, 18 cubic meters of TPI dry concrete, TPI Nano Super Armor paint, TPI tiles, lightweight concrete, wood substitutes, TPI boards, etc. These donations were used to improve and repair school buildings, roofs, paint buildings, walkway floors, and playground floors at 24 schools nationwide, where the roads inside the school were repaired. [203-1] The following products were donated: 95.5 tons of TPI cement products, 250 cubic meters of TPI dry concrete, fiber cement products, TPI Nano Super Armor paint, and other products for the repair and improvement of buildings for various government agencies and people in need. These donations included support for Klong Prem Central Prison, Sakon Nakhon Provincial Prison, Chainat Provincial Prison, through the Young Me Rao Foundation to assist flood victims in Chiang Rai Province, and SOS Children's Villages Thailand under the Royal Patronage of H.M. The Queen. [203-1] The Company donated 679.15 tons of TPI cement products, 3,153 cubic meters of TPI ready-mixed concrete, fiber cement products, TPI Nano Super Armor paint, and other products to 17 temples nationwide. Projects include the construction of a Buddhist temple and Mahathat Chedi as a religious site at Wat Mahathat Wachiramongkol in Krabi Province; and the Church of the Risen Christ's project to build a new temple, etc. [203-1] 	

07 Corporate Governance Practices

Corporate Governance Performance in 2024

Proportion of Independent
Directors
33.33%⁽¹⁾

Proportion of female
Directors
20.00%⁽¹⁾

No complaints of personal
data breaches⁽¹⁾

Trade Partners acknowledged
the principles of Customers
Code of Conduct
97.50%⁽¹⁾

No complaints of
discrimination⁽¹⁾

Remark: (1) Only TPI Polene Public Company Limited



Good Corporate Governance, Procurement and Anti-Corruption Policy [3-3]

The Company recognizes the importance of good corporate governance in order to contribute to sustainable development, and the Company has established corporate governance policies and codes of conduct of the Company and is determined to promote the firm to be an organization that does business with transparency, ethics, and responsibility for shareholders, stakeholders, customers, employees, society and other stakeholders. The Company is determined to be an effective organization under an administration that complies with “Transparent Thailand where all citizens live happily”. The Company’s Board of Directors specifies principles of Good Corporate Governance for the Board, Management, and all employees of the Company to follow as a guideline practices.

Conducting business operation in accordance with a good corporate governance policy and business ethics, as well as developing operational standards to be at an international level, the Company has monitored an assessment of operational performance to ensure effective implementation, which covers investments, joint planning, defining a clear roadmap, following up operating results, reporting on the progress of operations on a regular basis, as well as establishing long-term strategies and long-term goals for sustainable growth development.

Good Corporate Governance Policy [2-23]

<https://www.tpipolene.co.th/en/aboutus-en/corporate-governance>

Company Code of Conduct [2-23]

<https://www.tpipolene.co.th/en/aboutus-en/code-of-conduct>

Employee Handbook [2-23]

<https://www.tpipolene.co.th/en/aboutus-en/employee-handbook>

In addition, the Company has established anti-corruption policies and a Supplier Code of Conduct to promote transparency, prevent fraud and anti-corruption, and prevent conflicts of interest in order to ensure that the Group’s business operations are transparent, fair, take into account equality and integrity in business operations, as well as to strengthen good relationships with partners and related stakeholders to be in line with good corporate governance principles, the Company’s Code of Conduct, and provisions and relevant governing laws to further develop into a sustainability organizations.

Anti-Corruption Policy [2-23]

<https://www.tpipolene.co.th/en/aboutus-en/anti-corruption-policy>

Supplier Code of Conduct [2-23]

<https://www.tpipolene.co.th/en/aboutus-en/code-of-conduct>

Privacy Policy [2-23]

<https://www.tpipolene.co.th/en/aboutus-en/personal-data-protection-policy-en>

International Human Rights Policy [2-23]

<https://www.tpipolene.co.th/en/sustainability/social-responsibility>

Target	Action Plan	Key Performance In 2024	Guidelines for Improving future operations
<ul style="list-style-type: none"> - Follow good corporate governance principles without corruption - Employees are trained in anti-corruption courses on an ongoing basis every year. - Business partners are constantly increasing their corporate anti-corruption policies and practices every year. - Suppliers acknowledged the Supplier Code of Conduct continually increasing every year. 	<ul style="list-style-type: none"> - Set out key good corporate governance principles for Directors, the Management and employees of the Company to adhere as a guideline for operations, such as international corporate governance practices and striving to continuously improve good corporate governance in accordance with international standards. The adoption of Creation shared value, Responsibility, Equitable treatment, Accountability, Transparency and Ethics (CREATE) principles is used as a guideline for business operations, as well as strictly to fulfill its duties in accordance with the laws and requirements in all countries in which they invest. Monitoring/Measuring Performance and Risk Management are conducted effectively, independently and responsible for the consequences of performing their duties in accordance with the principles of good corporate governance, etc. - Established responsibilities to ensure that the Company's business operations are transparent, ethical and responsible to shareholders, customers, employees, society and other stakeholders in accordance with the Company's policies and corporate governance as follows:- <ul style="list-style-type: none"> • The Board of Directors are responsible for setting policies and supervising an effective anti-corruption system to ensure that the Management recognizes and values anti-corruption and cultivates it as a corporate culture. • The Chief Executive Officer and the Executive Committee are responsible for establishing the system to promote and support anti-corruption policies to communicate to employees and stakeholders, including reviewing appropriately in accordance with changing circumstances, such as business conditions, rules and regulations and provisions of laws, etc. 	<ul style="list-style-type: none"> - All departments, especially those dealing with third parties are required to do risk assessment Fraud-linked and/or corruption-linked risks are assessed 73 sections, representing 100%^[205-1] - The proportion of employees who received anti-corruption training courses stood at 15% of the total 6,857 employees, of which 6,857 employees were 100% aware of the anti-corruption policy. - There were no lawsuits filed by the organization for corruption, and there were no fraudulent incidents with business partners. This includes corruption incidents occurring within the organization^[205-3] 	<ul style="list-style-type: none"> - Organized special lectures by expert speakers on anti-corruption through online and offline classrooms - Organize anti-corruption activities through electronic media, etc. - Regularly review the fraud risk assessment of all departments every year, including objective setting, identifying risks, risk assessment, and responding to risks (Risk Response) that may occur from new events/factors that change.

Target	Action Plan	Key Performance In 2024	Guidelines for improving future operations
	<ul style="list-style-type: none"> • Audit Committee is responsible for reviewing financial and accounting reporting systems, internal control system, internal audit system and risk management system, to ensure compliance with international standards, to be concise, suitable, modern and efficient • Head of Internal Audit is responsible for proper inspection and review of operations to meet policies, guidelines, operating power, regulations and laws to ensure that there is a proper and adequate control system for potential corruption risks and report to the Audit Committee. - Assigned to all departments (100%) of the organization to assess risk associated with corruption in consideration of the COSO-ERM risk assessment principles, which the Company has identified significant fraud risks, such as risks related to corruption/ purchasing corruption, from which the purchasing authorities demand bribes or commission fees from sellers, etc. The result of the risk assessment will be developed and improved the relevant practices and internal control measures of the Company. ^[205-1] - Established anti-corruption practices for employees, including anti-corruption and anti-corruption measures (business dealings with partners and third parties) in order for all employees to adhere to and strictly comply. - Assigned the purchasing department or related parties to compare prices or auctions (as the case may be) in case of procurement. 		

Target	Action Plan	Key Performance In 2024	Guidelines for improving future operations
	<ul style="list-style-type: none"> - Required channels for whistleblowing and complaints in the event of corrupt conduct involving the organization directly or indirectly, including those that are in breach of the organization's protocols or affecting the internal control of the organization. It is doubtful that it may be a way to corrupt and illegal, immoral, business ethics, such as reporting complaints to responsible persons/entities or the Internal Audit Supervisor/Head of Legal Affairs/ Head of Human Resources Department (Head Office) or Human Resources and Administration (Plants), with comment boxes and electronic mail (Email: rapinr@tipolen.co.th) - Formulated a systematic fraud investigation guideline when receiving whistleblowing, Executive Directors, the Management and Audit Committees will act as the justice to investigate the facts. During the investigation, Executive Directors, the Management and Audit Committee may assign representatives (executives) to inform the whistleblower of progress or complaint. If facts finding or evidence available, there are reasonable grounds to believe that those accused of committing fraud or actual corruption, the Company will give the alleged person the right to be informed of the allegations and give the alleged perpetrator the right to prove her/himself by seeking further information or evidence that she/he has nothing to do with the alleged corrupt acts, he has not been able to do so as accused. If the complainant has committed actual fraud, such action is considered as an anti-corruption policy offense. Disciplinary action must be considered in accordance with the regulations set by the Company and if the fraud is illegal. Offenders may face legal penalties and disciplinary action in accordance with the Company's regulations. Decisions of the Board of Directors (Executives) are final. 		

Target	Action Plan	Key Performance In 2024	Guidelines for improving future operations
	<ul style="list-style-type: none"> - The protection of complainants and confidentiality is required. When acting in good faith, complainants, testimony, information providers, fact-finders, or witnesses are guaranteed and protected from difficulties being caused to them or being used as justification for dismissal, punishment, or other actions that could have serious repercussions for those employees. For anonymity and confidentiality, employees or outside whistleblowers may choose to remain anonymous when reporting misconduct by other employees. However, the Company encourages employees to identify themselves when reporting to make it easier to contact and investigate. Once an employee or external complainant makes a report, the Company will take appropriate safeguards and safeguards to ensure effective investigation and prevent harassment or unfair treatment of an employee or external complainant. - Set measures to promote transparency and prevent corruption within the organization, such as public information distribution measures, fraud complaint management measures, anti-graft measures as well as measures to prevent conflicts of interest between self-interest and the public interest Propagate practices throughout the organization. 		

Target	Action Plan	Key Performance In 2024	Guidelines for Improving future operations
Procurement management <ul style="list-style-type: none"> - Supporting local procurements in order to create economic returns in areas where TPIPL has operated. Proportion of local purchases and services given to local suppliers is not less than 70% - Supporting suppliers to expand the use of sustainable practice guidelines throughout the supply chain for the continuous development and efficiency. 	Procurement Practices <ul style="list-style-type: none"> - Establishing a Supplier Code of Conduct that outlines key guidelines, such as the Code of Ethics for Purchasing, Business Code of Conduct, business operations, safety, health, labor and human rights, environmental impact, and community and social impacts, is essential for creating transparency and fairness. This code also includes considerations for equality and honesty in all business dealings. Additionally, suppliers have guidelines for continually managing impacts on society and the environment, ensuring effectiveness and appropriateness. - Establishing regulations and guidelines for recruiting and evaluating current and new suppliers, while adhering to the principles of the Supplier Code of Conduct. Important operational steps include: <ul style="list-style-type: none"> 1) Recruiting and selecting current and new vendors must be approved as acceptable sellers; therefore, their names will be included in the Approved Vendor List (AVL) with the following steps: <ul style="list-style-type: none"> 1.1 Recruiting new vendors can be accomplished by searching for information from quotations, brochure catalogs, and the Yellow Pages, which is a telephone directory. Additionally, basic information can be gathered from buyers, data in the market for the respective type of product or service. 1.2 New vendors that can be recruited will be selected according to specified criteria, which will consider the following topics: <ul style="list-style-type: none"> - Details of standards for product or service desired - Details of operations - Payment terms or delivery conditions - Convenience and speed in contacting and coordinating - Survey of suppliers/subcontractors at the production site - Environmental & social issues in terms of human rights, refraining from using illegal labor such as child labor, slave labor, etc. 	<ul style="list-style-type: none"> - In 2024, 100% all new suppliers of the Company must meet criteria for recruiting and selecting customers, considering societal, human rights, and environmental issues in procurement. They are also required to sign the Supplier Code of Conduct for purchasing, procurement, and employment. - A total of 1,600 suppliers have signed the Supplier Code of Conduct, which represents 97.50% of the total of 1,641 suppliers ⁽⁴¹⁴⁻²⁾ ⁽⁴¹⁴⁻¹⁾. - The on-site ESG Audit evaluation will be conducted after suppliers are required to complete the Self-Declaration. In the case of direct suppliers (Critical Tier 1), a plan is in place to continue monitoring and conducting audits in the operating area at least once every two years. In 2024, one supplier required on-site ESG audits. - No incidents suppliers violating applicable laws, human rights, labors and environment. - In 2024, there were no complaints from business partners regarding procurement activities. 	<ul style="list-style-type: none"> - Conduct a survey and assessment of ESG suppliers across all of the Company's suppliers to identify potential and potential negative social impacts in order to improve and enhance suppliers to comply with the Supplier Code of Conduct.

Target	Action Plan	Key Performance In 2024	Guidelines for improving future operations
<ul style="list-style-type: none"> - Regularly monitoring operations to ensure that the suppliers operate in accordance with the standards and laws set, for example inspecting the supplier's operating sites (On site ESG Audit), etc. - The Company assesses the environmental, social and corporate governance risks (ESG Risk) by Self-Declaration - The Company will conduct an on-site ESG audit after its direct business partners (Critical Tier 1) complete a self-declaration. Additionally, the Company has a plan to monitor and conduct audits in the operating area at least once every two years. 	<ul style="list-style-type: none"> - Others as appropriate, such as environmentally friendly raw materials or greenhouse gas reduction <p>The information regarding vendor selection is attached for proposal, along with the price screening sheet, to request consideration and approval from authorized personnel. Once approved as an authorized vendor, it will be recorded and listed in the AVL.</p> <p>2) For the inclusion of vendors in the AVL, both current and newly approved vendors will be listed, categorized by the type of products or services they provide. This classification includes: (1) a list of acceptable vendor/subcontractors; (2) a list of acceptable suppliers/subcontractors (General); and (3) a list of acceptable suppliers/subcontractors (Special). The AVL will undergo reviews or updates in response to any changes, or on a regular basis, at least every 6 months.</p> <p>3) For vendor evaluation, vendors listed on the AVL will be included when they meet specific criteria, categorized as follows: (1) evaluation based on delivery time and the condition of goods during the initial inspection; (2) evaluation of the quality of goods or services, including vendor cooperation; and (3) evaluation of services and cooperation regarding purchasing or pricing issues. The Purchasing Department will collect evaluation results from involved parties to conclude the result of delivery/subcontracting. Vendors who receive a score of less than 60 in two consecutive evaluations will be considered for removal from the AVL if they fail to improve their performance.</p> <p>4) Establishing the evaluation round for vendors in AVL, divided by vendor group. Vendors contacted for orders through the Purchase Department at the head office will be evaluated annually.</p> <ul style="list-style-type: none"> - The Company has assessed environmental, social, and corporate governance risks (ESG risks) arising from its suppliers by identifying risk issues in all three areas: 	<ul style="list-style-type: none"> - No partners were identified as having actual or potential material negative social impacts in 2024. [414-2] - The procurement budget paid to local suppliers represents 80.89% of the total procurement budget actually disbursed by the organization during the reporting period [204-1]. <p>Note: Local suppliers are those who provide raw materials, products, or services to the Company and operate from offices located in Thailand. They conduct transactions in Thai Baht and comply with Value Added Tax regulations as mandated by law.</p> <ul style="list-style-type: none"> - The Procurement Department specifies the payment period in the Terms of Reference (TOR) or the scope of work to be purchased or hired. Although specified at 30-60 days, the actual average in 2024 was 43 days. 	

Target	Action Plan	Key Performance In 2024	Guidelines for improving future operations
	<p>(1) Environmental Aspects</p> <ul style="list-style-type: none"> - Compliance with environmental regulations, covering climate conditions, energy use, water conservation, and waste management. - Initiatives to support and enhance efforts to reduce global warming. - Maintaining workplace hygiene and safety standards. <p>(2) Social and Human Rights Aspects</p> <ul style="list-style-type: none"> - Non-discrimination against business partners. - Prohibition of illegal labor, including child labor, forced labor, bonded labor, and migrant labor exploitation. - Implementation of hygiene and safety measures in the workplace. <p>(3) Corporate Governance</p> <ul style="list-style-type: none"> - Conducting business in compliance with legal and ethical standards. - Establishment of an anti-corruption policy. - Protection of confidential business information and trade secrets. <p>Tier 1 suppliers refer to suppliers who directly produce or provide services to the organization. The Purchasing Department will send an evaluation form to suppliers for self-assessment at least once every 2 years. This process aims to review and summarize the list of suppliers, enabling the preparation of a monitoring plan and the conduct of on-site audits.</p> <p>Non-Tier 1 Suppliers refer to suppliers who produce or provide services to Tier 1 Suppliers without indirect suppliers. The Company utilizes a risk management process as outlined in its policy, adopting the principles of The Committee of Sponsoring Organizations of the Treadway Commission - Enterprise Risk Management (COSO-ERM).</p>		

Impacts of Sustainable Supply Chain Management

The Company is committed to managing its supply chain in accordance with Environmental, Social, and Governance (ESG) principles. These principles are embedded into the procurement and supplier management processes to support and enhance sustainable supply chain management.

Sustainable Procurement Policy

TPI Polene Public Company Limited is committed to conducting procurement activities with efficiency, transparency, fairness, and accountability, considering quality, cost, service, and business ethics. The company integrates environmental, social, and governance (ESG) principles into its procurement practices, promotes sourcing from local suppliers and communities, and encourages the use of environmentally friendly products and technologies. Furthermore, the company emphasizes strong supplier relationships and continuous development to enhance the competitiveness and sustainability of its supply chain.

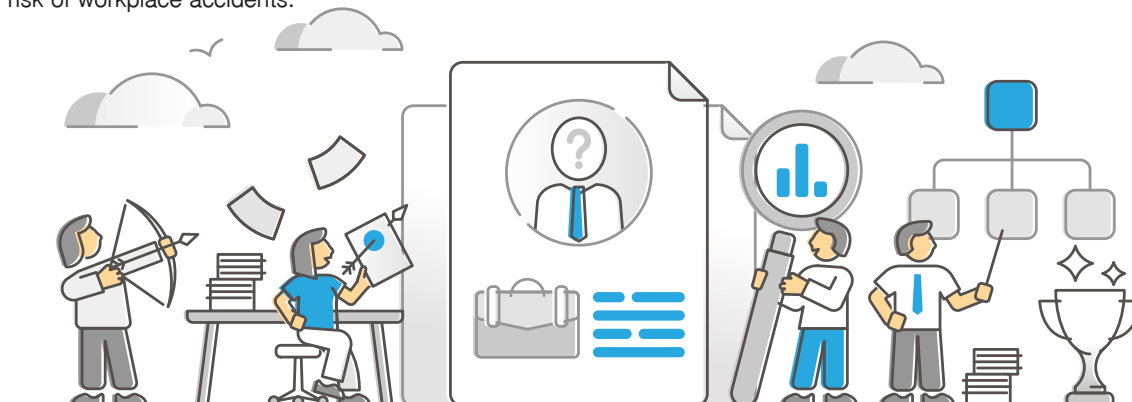
Positive Impacts (+):

- 1. Reduction of Greenhouse Gas Emissions across Supply Chain :** Promoting the use of alternative raw materials such as fly ash and recycled materials, along with selecting suppliers with low-carbon production and transportation systems, significantly contributes to reducing Scope 3 greenhouse gas (GHG) emissions.
- 2. Support for the Circular Economy :** Collaboration with suppliers to utilize industrial by-products or waste materials - such as recycled materials and alternative fuels - helps minimize dependency on virgin natural resources and reduce industrial waste.
- 3. Improvement of Labor Standards in Raw Material Extraction and Logistics :** Requiring mining suppliers and logistics providers to comply with occupational safety and labor standards-such as fair treatment of truck drivers and safety protocols in quarrying-enhances human rights protections and reduces the risk of workplace accidents.

- 4. Enhanced Transparency in Raw Material Sourcing :** Implementing traceability systems and conducting regular ESG assessments of suppliers enable the company to proactively manage risks and ensure transparency in sustainability reporting to stakeholders.

Negative Impacts (-):

- 1. Increased Costs during the Transition to Sustainable Procurement :** Sustainable suppliers may have higher operational costs due to compliance with environmental and social standards, which can lead to higher procurement costs during the initial transition phase.
- 2. Environmental Risks from Upstream Quarry Operations :** Despite supplier selection standards, upstream operations such as limestone and clay quarries may still lack proper environmental management (e.g., post-mining land rehabilitation or pollution control), potentially impacting ecosystems and the company's reputation.
- 3. Limitations in Controlling Long-Distance Logistics :** Some key raw materials such as gypsum or iron ore must be transported over long distances, which lead to unavoidable GHG emissions from transportation, even when sustainable logistics practices are applied.
- 4. Challenges in Monitoring Small-Scale Suppliers :** Many small suppliers in the construction materials sector may lack formal ESG documentation or reporting systems, making it difficult to assess their environmental or labor risks effectively.



Supply Chain Management [204-1]

The Company supports local procurement to generate economic benefits for the areas where it operates. It has set a target that at least 70% of the annual procurement value is allocated to local suppliers.

The value of procurement payments made to local suppliers

Unit : Million Baht

Locally supplied products and services*	2022	2023	2024
Local procurement of goods and services	16,066.65	11,015.11	10,379.79
Proportion of local purchases and services (%)	75.11	84.22	80.89

Note: Local suppliers refer to business partners that provide raw materials, goods, and services to the company and have a registered office in Thailand. Transactions are conducted in Thai Baht, and value-added tax (VAT) is paid in compliance with legal requirements (applicable to Cement, LDPE, FCB, and CRT businesses).

Information of the Board of Directors, Employees and Business Partners who have received communication of anti-corruption policies and Guideline Practices [205-2]

Category	Number of people receiving communications on corporate anti-corruption policies and practices (people)	Percent
1. The Board of Directors of the Company	15	100
2. Employees of the Company excluding subsidiaries		
<u>Classified by employee group</u>		
- Senior Executives (Top Management)	4	100
- Management Level (AVP/VP/SVP)	59	100
- Manager level (Asst.Dept.Mgr. — Dept.Mgr.)	163	100
- Supervisor level (Asst.Sup. — Section Mgr.)	1,197	100
- Operating level (Officers)	5,434	100
Total	6,857	100
<u>Classified by Location</u>		
- Head office	1,241	100
- Cement plant, Saraburi province	4,126	100
- CRT & FCB plant, Saraburi province	931	100
- LDPE & EVA plant, Rayong province	559	100
Total	6,857	100
3. Business Partners		
- Suppliers/ Business Partners	1,600	97.50

Information of the Board of Directors and employees who have been trained in anti-corruption courses [205-2]

Category	Number of trainees Anti-corruption-related courses (person)	percent
The Board of Directors of the Company	15	100
Employees of the Company (7,096) (excluding subsidiaries)		
<u>Classified by employee group</u>		
- Management Level (AVP/VP/SVP)	6	0.09
- Manager level (Asst Dept Mgr. — Dept Mgr)	56	0.82
- Supervisor level (Asst Sup — Section Mgr.)	435	6.34
- Operating level (Officers)	497	7.25
Total	994	14.50
<u>Classified by Location</u>		
Head office	388	5.66
Cement plant, Saraburi Province	269	3.92
CRT & FCB plants, Saraburi Province	226	3.30
LDPE & EVA plants, Rayong Province	111	1.62
Total	994	14.50

Note Those who have been trained in anti-corruption courses are selected according to their roles and responsibilities that are important to the management and auditing of operations associated with risks or incidents of corruption in the corporation.





Complaints, Suggestions and Whistleblowing [2-25] [2-26]

The Company has a policy for handling complaints and suggestions, which was published as Company Policy No. 114/2014 on receiving complaints, complaints, suggestions, and whistleblower channels that harm the Company. This will serve as a medium for the corporation to effectively monitor its interests and quickly address any issues. Additionally, in the case that stakeholders have concerns or observe acts that can be considered to be improper, in violation of laws, rules, or business ethics, in order to urge stakeholders to participate in the corporate governance process.

TPIPL has published complaints and feedback policies through email, the Company's website, annual reports, etc. to ensure that suppliers, customers, and stakeholders acknowledge and ensure that all complaints and recommendations are handled in a clear process through channels that cover issues towards anti-corruption. Whistleblowing or complaints are summarized as follows:-

1. A complaint if encountering any acts that is considered corruption, direct or indirect.
2. Any act that is considered corruption and/or has a direct effect on the internal controls of the Company; the individual must cooperate in the fact-finding investigation stipulated by the Company's regulations.
3. Any act that has a direct impact on the Company's reputation and benefits.
4. Any misconduct that is against the law, morals and/or business ethics.

Channels for receiving complaints, suggestions, and whistleblowing from customers

All employees are responsible for reporting complaints through suitable report channels when they face or suspect any act that might be considered corruption, and are to notify supervisors or responsible persons through suitable report channels, while external comment mechanisms (external complaints) can be handled by contacting the following:

1. Letter: Contact Ms. Orapin Leophairatana (Senior Executive Vice President) TPI Polene Public Company Limited 26/56 Chan Tat Mai Road, Thung Maha Mek Sub-district, Sathon District, Bangkok 10120
2. Email box (E-mail: orapinr@tpipolene.co.th)
3. Letter: Contact the Audit Committee, TPI Polene Public Company Limited, 26/56 Chan Tat Mai Road, Thung Maha Mek Sub-district, Sathon District, Bangkok 10120
4. Telephone: 02-285-5090 or 02-213-1039 Ext. 12962 / 12963, Internal Audit Department

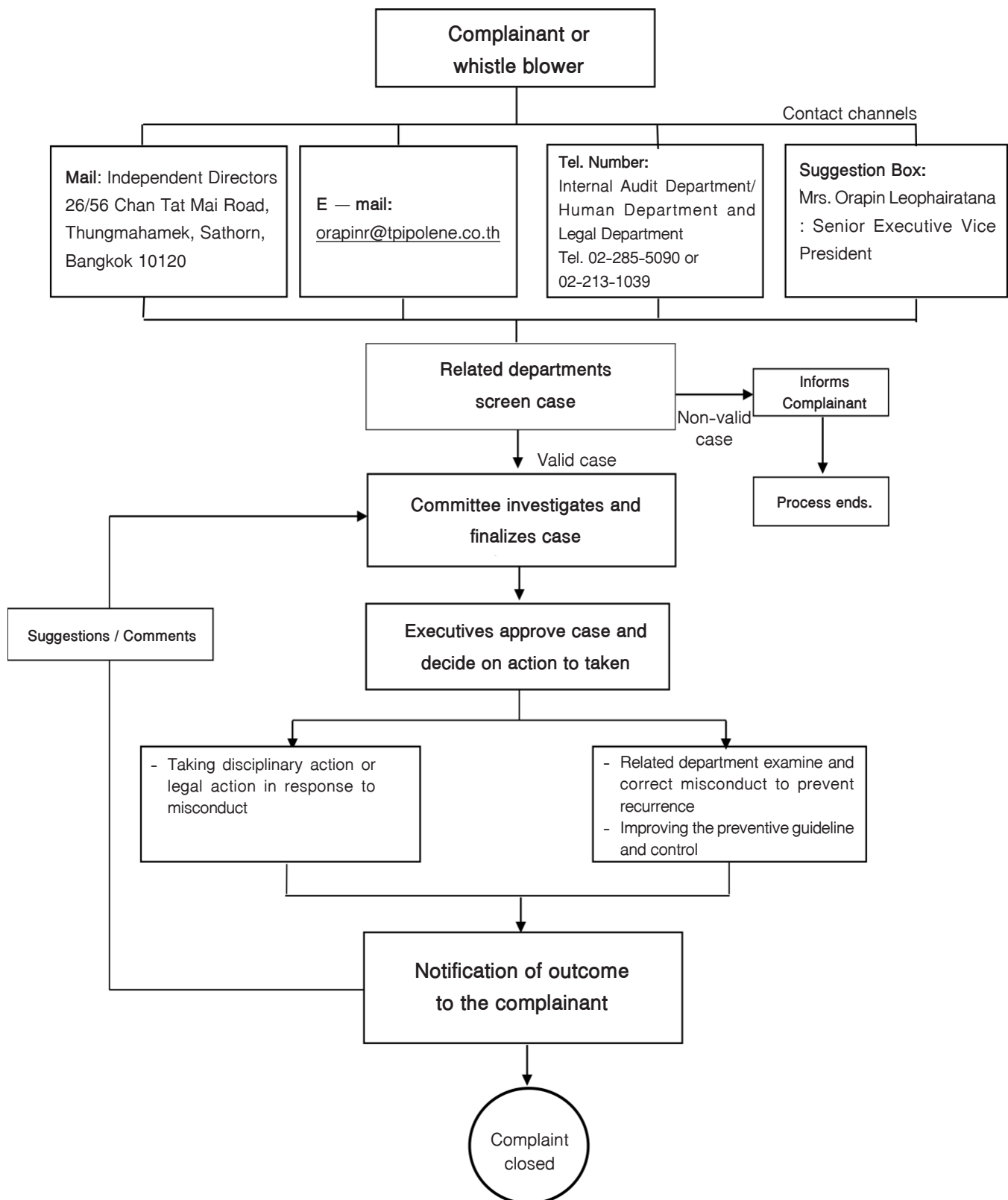
The Company provides measures for whistleblowing in response to complaints from external agencies or stakeholders. When complaints come through various channels, there will be a preliminary investigation unit to know the cause whether it is from the actions of the Company or not. When the cause is found, the complaint will be taken to the fact-finding process, along with proposing solutions to deficiencies, complaints, and preventing problems from occurring. Relevant agencies will take corrective action and preventive actions with a specified time frame or may issue a letter to notify the results when the problem has been solved.

In order to systematically process complaints, suggestions, and notifications from stakeholders or the public, the Company has set up a grievance mechanism with details as process (Flow diagram/ Process) in handling complaints from receiving complaints to taking corrective actions and reporting back to relevant stakeholders as follows:-

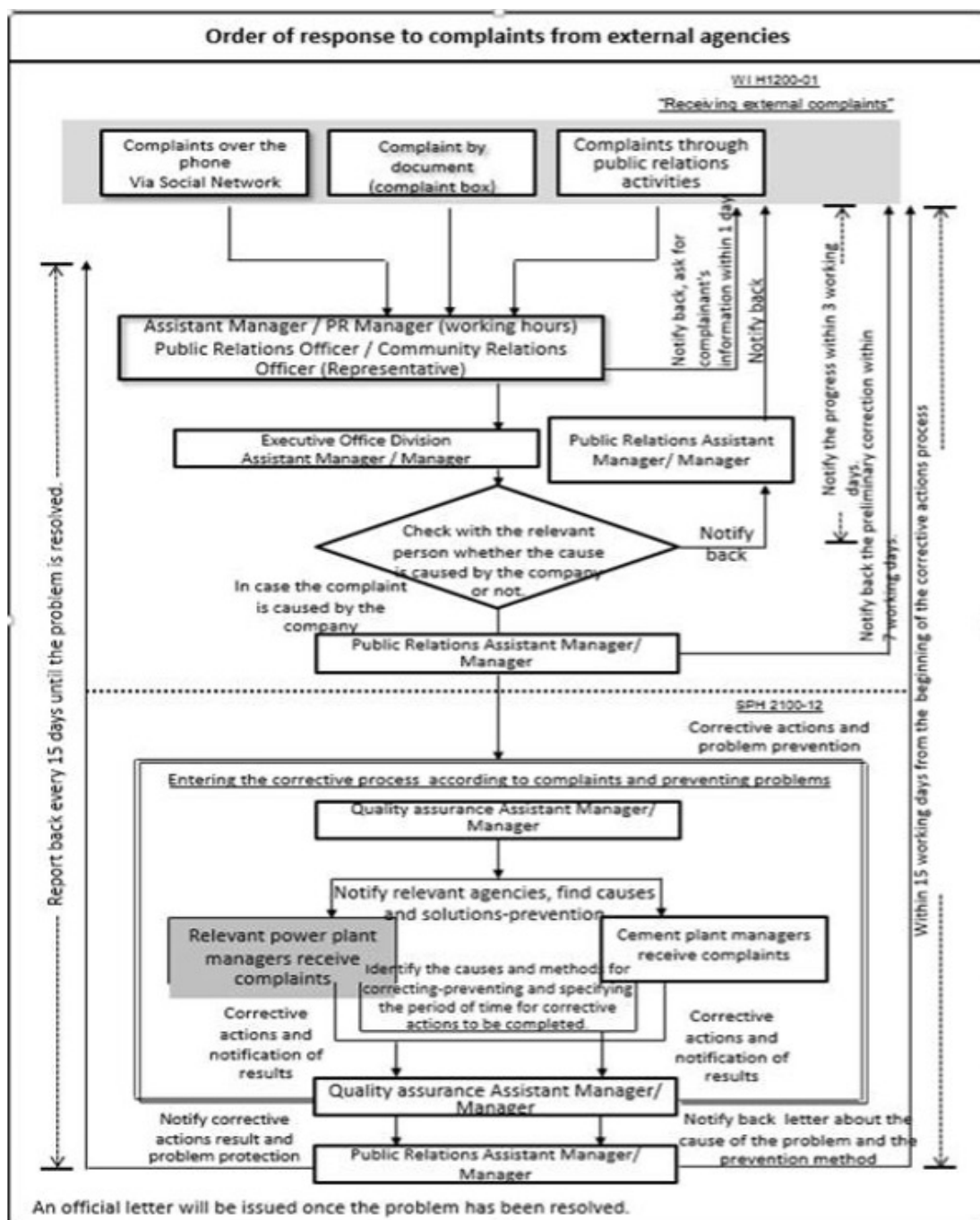
1. **Receiving Complaints** Complainants, stakeholders, or the public can file complaints, suggestion, and report clues through the four channels specified by the Company, namely (1) Letter to the Senior Executive Vice President (2) Electronic mailbox (E-mail: orapinr@tpipolene.co.th) (3) Telephone to Head of Internal Audit Department, Head of Legal Department, Head of Human Resources (Head Office), or Head of Human Resources and Administration (Factory) and (4) Opinion Box.
2. **Moderation of Complaints** Once the Company receives the complaint, it will have the Human Resources Department, the Internal Audit Department, or the relevant departments consider and screen the complaint. The details of clues or complaints must be examined. They must be true, clear, or sufficient to ascertain the facts for further action. In the event that there is no evidence, the complaint will be returned to the complainant or request for additional documents within 10 days.
3. **Fact Checking** In case the complaint is received clearly or can be ascertained, the Company will consider appointing executives from the internal audit department, the human resources department, and executives from other relevant departments to be the fact-finding committee. They will be appointed from time to time by the President or Executive Vice President.
4. **Fact Checking Committee** The Company will proceed with the process of collecting facts, processing, and screening information to determine the appropriate handling method for each matter, with disciplinary action or legal action if wrongdoing is found, advise, and prevent recurrence
5. **Audit Report** the Investigation Committee has a duty to report the results to the President or Executive Vice President in order to proceed as the Board proposes or orders as it deems appropriate.
6. **Implementation of Audit Results and Notify the Whistleblower** When the relevant departments have corrected, improved, performed as instructed by the Company, they must notify the audit committee to follow up on corrective actions, improvements, and determine the operational guidelines that have been instructed until completion and notify the whistleblowers of the results of the action and provide comments or suggestions to improve the work ordering mechanism.



Flowchart of the complaint and whistleblowing process In handling cases of business ethics, code of conduct and corruption



In addition, the Company has organized CSR activities for communities in the areas where the factories are located to listen to problems and take care of solving the effects continuously and consistently, with the process of accepting complaints and responding to complaints as follows:-



In the process of whistleblowing complaints process, when the relevant departments of the Company have made corrections and actions as instructed by the Company, they must notify the fact-finding committee for investigation and follow up on the results of operations, including improving the efficiency of operations and preventing recurrence, and reporting the results to the Senior Executive Vice President. However, when the fact-finding committee has notified the result of the action to the whistleblowers, satisfaction inquiries, suggestions, and useful suggestions will be taken to improve and determine guidelines for making the operation more efficient.

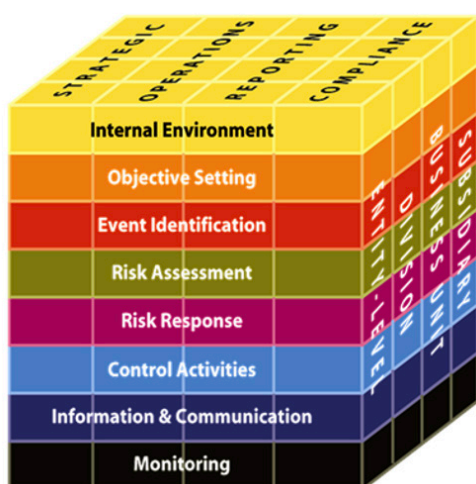
Social Responsibility [2-23]

<https://www.tpipolene.co.th/en/sustainability/social-responsibility>

Risk and Crisis Management [3-3]

Risk management is considered an important foundation of business management. The Company emphasizes systematic risk management throughout the organization and continuously develops it to ensure effective responses to uncertain situations in accordance with established operational strategies. The Company has established a risk management framework and guidelines, including systematic, efficient, and effective monitoring and processing to manage risks that may arise across the organization. Additionally, the Company has a system for monitoring internal and external factors to identify potential future risks.

The Company has a risk management process aligned with its policy and has also adopted the criteria of the Committee of Sponsoring Organizations of the Treadway Commission — Enterprise Risk Management (COSO-ERM) as a framework for risk management to ensure that business operations align with sustainable development goals. According to the COSO-ERM criteria, it consists of eight elements:



1. Internal Environment
2. Objective Setting
3. Event Identification
4. Risk Assessment
5. Risk Response
6. Control Activities
7. Information & Communication
8. Monitoring

In 2024, the Company has continued to focus on managing sustainability risks, or “ESG Risks,” which are related to environmental, social, and governance issues. The Company recognizes the importance of human rights in ensuring the organization’s sustainability and has therefore established respect for human rights as a fundamental corporate practice. It also acknowledges the significance of governance risks and has introduced an anti-fraud and anti-corruption policy to ensure that everyone in the organization complies with it consistently and in alignment with the organization’s risk management process.

The Company also emphasizes on promoting risk management culture throughout the organization by focusing on laying down a systematic risk management foundation for short-term and long-term, cultivating risk management awareness among the management and all employees, as well as creates an atmosphere and a culture of risk management to raise awareness and put it into practice, leading to success in alignment with the sustainable development goals set by the Company, as follows:

- The Company monitors and reviews the risks of all units in the organization annually. The Risk Management Department collects the risk reviews from all units, analyzes, evaluates, and summarizes them into a risk management report, which is submitted annually to the Risk Management Committee (RMC) and the Board of Directors.
- Training is provided to disseminate knowledge on risks and systematic risk management to all levels of personnel, including directors, senior executives, and employees, through the “Organizational Risk Management” course at least twice a year.

Target	Action Plan	Follow-up and Review in 2024	Guidelines for Improving future operations
<ul style="list-style-type: none"> - To conduct business in accordance with the sustainable development goals - To reduce the cause of the possibility of damage to the Company by keeping the level and magnitude of damage at an acceptable, assessable, controllable, and systematically verifiable level with regard to achieving objectives or organization's goals as important - For managing climate change risk to be in accordance with government policy and in line with the organization's goal of achieving carbon neutrality by 2043. 	<ul style="list-style-type: none"> - The Board of Directors has established a Risk Management Committee to supervise and be responsible for the development and monitoring of the Group's risk management policy and requires that the results be reported to the Board of Directors on an annual basis. - Requiring that managing risks and opportunities related to climate change is one of main goals of the organization and a part of environmental risk management by identifying important issues, assessment of impacts, opportunities and management of climate change risks based on steps set out in "Risk Management Manual" Managing "ESG Risk", the risk related to Environmental, Society and Governance issues under the Company's risk policy. - There is a risk management process under the Company's policy and has also applied the criteria of The Committee of Sponsoring Organizations of the Treadway Commission - Enterprise Risk Management (COSO-ERM) as a framework for managing the Company's risks in order to conduct business in accordance with the sustainable development goals. - Promote a risk management culture throughout the organization by providing risk management training to employees to build knowledge, understanding, participation, and systematic risk management. There will be training every year at least twice a year. 	<p>divided into 7 categories as follows: -</p> <ol style="list-style-type: none"> 1. Strategic Risk Risks resulting from failure to execute business operations as originally planned, including: 1) risk management related to the transition from coal to waste-derived fuels to meet production cost reduction targets; and 2) management of investments in environmentally sustainable projects. <p>The Company regularly monitors and analyzes the implementation of the business plan and investment projects, including improving operating results and reviewing investment plans, to achieve maximum benefit and efficiency.</p> <ul style="list-style-type: none"> • The results of the Company's Strategic Risk assessment are at the "moderate" level. 	<ul style="list-style-type: none"> - Reviewing and monitoring risks to ensure they align with the Risk Appetite. - Implementing corporate governance measures, including the development of essential risk management policies, and providing continuous supervision to ensure compliance with the risk management policy and framework. This fosters an effective risk management system within the Company Group and ensures ongoing compliance throughout the organization. - Overseeing climate change risk management to ensure alignment with the organization's established goals.

Target	Action Plan	Follow-up and Review in 2024	Guidelines for improving future operations
	<p>Crisis Management</p> <p>The Company has a Business Continuity Plan (BCP) to deal with significant risks and potential public health risks. To enable business operations to identify key risks, including fire, fire, terrorism, etc. Riot protests, cyber threats</p> <ul style="list-style-type: none"> - Activity/ Major tasks of the department - Events, situations or problems arising from significant risks. - Impacts - Activities and solutions - Support plans and troubleshooting steps - Person in charge, coordinator <p>The central working group and related departments will jointly monitor it. Review and evaluate the BCP plan on an annual basis.</p>	<p>2. Operational Risk</p> <p>It is a risk that arises from internal operational processes or external causes that affect operations.</p> <p>The Company has controlled risks from internal and external factors to align with the Risk Appetite.</p> <ul style="list-style-type: none"> • The results of the Company's Operational Risk assessment are at the "moderate" level. <p>3. Financial Risk</p> <p>It involves the risk of liquidity shortages or a lack of funding sources for conducting business or investing in various projects, such as risks associated with exchange rate fluctuations and interest rates, etc.</p> <p>The Company has implemented a cautious financial policy, staying within specified budgets to ensure appropriate returns and maintain sufficient cash flow for operating the business and investing in various projects.</p> <ul style="list-style-type: none"> • The results of the Company's Financial Risk assessment are at the "moderate" level. 	

Target	Action Plan	Follow-up and Review in 2024	Guidelines for improving future operations
		<p>4. Compliance Risk It is a risk of not being able to comply with laws and government regulations or policies, including corruption. The Company has established a unit to monitor changes in government policy, laws, rules, and regulations related to business operations and to supervise compliance with government regulations and policies. In addition, operations are carried out in accordance with the regulations of the Office of the Securities and Exchange Commission and the Stock Exchange of Thailand.</p> <ul style="list-style-type: none"> • The results of the Company's Compliance Risk assessment are at the "moderate" level. <p>5. Environment Risk It is the risk of pollutant emissions from the production process causing an impact on the environment.</p>	

Target	Action Plan	Follow-up and Review in 2024	Guidelines for improving future operations
		<p>The Company has a policy to replace coal with waste fuel in the cement production process by up to 25% and to achieve carbon neutrality by 2043. This includes a focus on the production of green products, using electric trains and conveyor belts instead of combustion-powered vehicles in the mining business, and producing hydraulic cement, etc.</p> <ul style="list-style-type: none"> • The Company's environmental risk assessment results are at the "moderate" level. <p>6. Social Risk</p> <p>It is a risk in human resource management, safety, occupational health, and working environment, including violations of human rights</p> <ul style="list-style-type: none"> • The Company has provided all employees with a manual on safety practices in accordance with industry standards. Additionally, a policy on respect for human rights principles has been established (as per Announcement No. 113/2557 on International Human Rights Policy), considering benefits and equality to prevent human rights violations within the organization. 	

Target	Action Plan	Follow-up and Review in 2024	Guidelines for improving future operations
		<p>Furthermore, there are channels for complaints, a Welfare Committee has been established, and a policy is in place to ensure fairness to employees, business partners, and stakeholders, while also protecting complainants and keeping complaints confidential.</p> <p>The results of the Company's social risk assessment are at the "moderate" level.</p> <p>There have been no incidents of human rights violations, and no use of child labor, forced labor, or involuntary labor.</p> <p>7. Governance Risk</p> <p>It is a risk in managing transparency in operations and corruption.</p> <p>The Company has a policy to supervise the operations of every department in accordance with the principles of corporate governance, its Code of Conduct and ethics, and strict measures to prevent corruption.</p>	

Target	Action Plan	Follow-up and Review in 2024	Guidelines for Improving future operations
		<p>Following policies are announced:</p> <ul style="list-style-type: none"> - Announcement No. 2557/107 on Anti-Corruption Policy - Announcement No. 2557/0125 on the Company's Code of Conduct - Announcement No. 0127/2557 on Corporate Governance Policy <p>The Company has channels for whistleblowing or filing complaints if any corruption related to the Company's activities that violates policies is discovered, allowing employees or external parties involved in the business to report or file complaints.</p> <ul style="list-style-type: none"> - The results of the Company's corporate governance risk assessment are at the "moderate" level. 	

Note: Risk level scores are divided into 4 levels as follows:

Overall Risk Level	Score Level	Meaning
Low	1-2	An acceptable level of risk that does not require risk control or additional management
Medium	3-6	An acceptable level of risk, with controls in place to prevent it from deteriorating to an unacceptable level
High	7-12	An unacceptable level of risk that requires risk management to maintain it at an acceptable level
Very High	13-25	An unacceptable level of risk that requires immediate risk management to maintain it at an acceptable level

Economic Performance [3-3]

In response to changes arising from economic downturns, geopolitical conflicts impacting energy, transportation, and production costs, and other factors affecting both supply and demand in the housing market, alongside shifting consumer priorities emphasizing health and safety, the Company has strategically adjusted its business processes. Operational flexibility has been improved, along with enhanced service adaptability to effectively respond to uncertainties. Additionally, competitive capabilities have been strengthened to ensure customers have rapid and convenient access to our products, thus driving business value and continuously delivering benefits to all stakeholders, facilitating sustainable growth.

Economic Performance (based on consolidated financial statements)

Unit: Million Baht

Total Revenue	Employee wages and welfares	Tax expense	EBITDA	Net profit	Dividend per share (Baht/ share)
37,862	6,562	373	8,830	2,425	0.05

Target	Action Plan	Key Performance In 2024	Guidelines for Improving future operations
<ul style="list-style-type: none"> - Create growth potential and high return on investment for the organization in the long run and continue to deliver value to shareholders and related stakeholders under good corporate governance policy. 	<ul style="list-style-type: none"> - Comply with the Group's good corporate governance policy and business ethics, as well as promote a culture of good corporate governance, take responsibility for relevant stakeholders, and encourage the implementation and conduct of business with human rights principles, consumer rights and fair labor - Focus on developing innovation with application of technology to create value added to the products, with their own research and development team of TPI Polene Group. - Focus on managing the organization by embracing BCG criteria at all stages of the value chain to achieve efficient resource utilization and increase the advantage in production costs. - Continuous development of waste fuel replacement for coal in all four cement plants to reduce cement production costs and increase competitiveness. - Saving in cement & binders: Development of new innovations to reduce the use of clinker, increase the use of substitute materials, promote the use of Low Carbon Cement (Low Carbon Cement), such as the development of hydraulic cement to be used as a replacement for portland cement type 1 etc. - Savings in clinker production: Reduce the use of fossil fuels in burning clinker, increase the use of biomass fuel, fuel from industrial waste, or municipal waste, which has been implemented since 2021 and will be completed in 2023. - The use of electricity from completely renewable clean energy (RE100 — Electricity Energy use Renewable Energy 100%) by producing electricity for use within TPI Polene Group in cement production and procurement of REC (Renewable Energy Certificate) to make cement production use 100% renewable energy. 	<ul style="list-style-type: none"> - The only manufacturer in Thailand that can manufacture and distribute EVA Emulsion and EVA Powder to market under the brand Polene® - Between 2021 and 2024, the Company recognized the increasing severity of global warming and climate change. As a response, it invested in the PREPOL-SC Step Combustors Project to upgrade kiln machinery at its cement plants, aiming to reduce heat consumption in the production process. The project was implemented across all four production lines, enabling the use of alternative waste-derived fuel to replace 25% of coal consumption in cement production. This initiative reduced the Company's reliance on coal as the sole energy source, leading to lower energy costs and decreased maintenance expenses for machinery. By substituting costly and volatile coal with more affordable waste-derived fuel, the Company successfully mitigated greenhouse gas emissions. The project was fully completed across all four production lines in 2023. 	<ul style="list-style-type: none"> - Develop products and services as well as produce products to respond to market demand, which demand consumption for the Company's products in the country, expand consistently due to the COVID-19 outbreak that can be controlled in many areas, including exports that are expected to increase demand. It also underpinned investment in the construction of utilities, mass transit and transportation networks in the central and regional sectors of the public and private sectors to support the country's growth and entry to the ASEAN Economics Community (AEC).

Target	Action Plan	Key Performance in 2024	Guidelines for improving future operations
	<ul style="list-style-type: none">- Focus on niche market for EVA resin products with high profit margins and increase the production capacity of EVA emulsion and EVA powder.- Develop the production process of raw materials to produce quality products with modern technology, expand new product lines with valuable different designs at competitive prices, and organize transportation and deliver goods to customers as needed and accurately.- Install machinery in the rotary kilns to reduce Heat Consumption, reduce repair costs and thereby can reduce the cost of cement production.- Increase the range of mortar, fiber cement, concrete tiles and lightweight concrete that meet market demand- Expand the channels of sale in Modern Trade in Bangkok and metropolitan areas and main cities, as well as add retail channels that are suitable for the New Normal and online sales channels to make orders for products more conveniently.	<ul style="list-style-type: none">- Since 1 June 2023, the Company has produced Green Products, such as Green Clinker, hydraulic cement (Green Cement), Fiber Cement, and Green Concrete Roof Tile, marking its entry into the Green Construction.- Installation of the conveyors belt system and construction of CDE Plant (Site C) to recycle the scrap to increase revenue and profit for the cement business.- Electric mixers have been integrated into trucks employed for transporting ready-mixed concrete to customers in the ready-mixed concrete business, enabling savings of approximately 30% on fuel costs.- Diamond blade sharpening machines have been installed in the fiber cement business to aid in the production of fiber cement products, resulting in savings of around 30% on diamond blade sharpening expenses.- The Company imported machinery from a European manufacturer and successfully installed it in its new EVA powder manufacturing plant, boasting a production capacity of 5,000 tons per year. Following trials and operational readiness by 2023, the machinery has enabled the Company to capitalize on the burgeoning market for EVA powder s in the expanding region.	<ul style="list-style-type: none">- The Company has successfully trialed the production of ethylene copolymers and new chemicals from the Pilot Reactor. These materials exhibit excellent adhesion to PET OPP plastics, and metalized film, while also enhancing impact resistance and facilitating the forming of engineering plastics. Furthermore, there are only a handful of producers of these plastic resins compared to EVA plastic pellet manufacturers. The Company commenced providing samples to customers in 2023 for testing purposes, aimed at assessing properties and market response. The Company has planned the machinery upgrades in its current production lines to commence manufacturing this product by the end of 2025. Introducing this new product will enable the Company to expand its offerings to better fulfill customer requirements, addressing the anticipated escalation of volatility and uncertainty in the petrochemical market.

Target	Action Plan	Key Performance in 2024	Guidelines for Improving future operations
	<ul style="list-style-type: none"> - Develop a logistic system to deliver products and services to customers rapidly, accurately, and with safety standards in the transportation of goods. There are distribution centers for products and raw materials scattered in strategic locations across the country with a network for inventory management. There are also retail stores to support sales to customers for easier access to products. 	<ul style="list-style-type: none"> - The Company has revenue from sales of Baht 35,770 million, revenue from sales in the construction materials business accounted for 57.03% of total sales revenue. Revenue from petrochemicals and chemicals business accounted for 20.26% of total sales revenue and energy/ utilities business accounted for 22.71% of total sales revenue. - The Company's cost of sales was Baht 27,945 million, representing 78.12% of sales revenue. - The Company realized net profit from operations (excluding gains (losses) from exchange rates and corporate income tax) of Baht 2,425 million. - In 2024, no grounds for prosecution, fines or other penalties, and no disputes must be carried out through dispute resolution mechanisms adhering to other socioeconomic or regulatory laws or regulations. ^[2-27] 	<ul style="list-style-type: none"> - The Company has developed a special-grade industrial water-based adhesive designed to help reduce PM 2.5 dust pollution in construction areas. This adhesive is applied by spraying onto the surface of dirt roads, preventing dust dispersion caused by vehicle and machinery movement within construction sites. This method serves as an alternative to traditional water spraying for dust control, significantly reducing water consumption, labor costs, and the need for water-spraying equipment. Initial testing has been well received by domestic customers, and the Company plans to expand its market in 2024. - The Company is committed to the continuous development and enhancement of machinery for high-tech product manufacturing. This ongoing innovation provides long-term profitability opportunities and ensures the Company remains competitive in the industry.

In 2024, the Company distributed economic value directly to various stakeholders, generating a cumulative economic value of Baht 4,396 million, with details as follows:-

Direct Economic Value Generated and Distributed [201-1]	2024* (Million Baht)
(1) Direct Economic Value Generated	
Revenues	26,941
(2) Economic Value Distributed	
Operating Costs	13,834
Employee Wages and Benefits	4,977
Payments to Providers of Capital	3,706
Payments to Government	-
Community Investment	28
Total	22,545
Retained Economic Value (1) — (2)	4,396

Remark: * Based on the Company's Separate Financial Statements

Information Data Security and Customer Privacy [3-3]

The Company is well aware of today's cyber threats, which are caused by bad individuals or hackers. There are methods and tools used to cause damage to information systems or commit data theft in various forms. These threats are becoming more complicated every day. If there is a lack of efficient operations, it may have wide-ranging effects and damage the Company, its affiliated companies, customers, suppliers, employees, and/or visitors, or all concerned individuals who have contact with the business of the TPI Polene Group. This includes trade information, important data of the Company and those involved, and the reputation of the Company and its affiliated companies. The Company kept the data and is disclosed securely for the purposes as agreed by the data possessors in accordance with the Personal Data Protection Act B.E. 2562. The Company has established a privacy policy which can be found in more detail on the Company's website www.tpipolene.co.th

As for customer information, the Company recognizes the importance of protecting the personal data of customers which has been stored, collected, and used with the objective of offering products and services to meet the needs of customers in the most efficient way.

Privacy Policy [2-23]

<https://www.tpipolene.co.th/en/aboutus-en/personal-data-protection-policy-en>

In 2024, TPI Polene Group received no complaints of personal data breaches. [418-1]

Target	Action Plan	Key Performance in 2024	Guidelines for Improving future operations
<p>- Preventing or reducing damage caused by cyber threats of trade information, customers, suppliers, employees and/or stakeholders, which will affect the trading strategy and related stakeholders of the Company and its subsidiaries.</p>	<p>The Company has established an IT security policy for its information systems and for the Company and its affiliated companies, requiring regular reviews of cyber threat prevention systems. This includes developing and improving cyber defense systems to keep pace with evolving threats to information systems and the seriousness of ongoing threats. The details are as follows:</p> <ol style="list-style-type: none"> 1. Communication systems and networks outside the Company and its affiliate: Install the Firewall to separate the scope of the network system outside and within the Company and its affiliates to prevent attacks from malicious people or hackers on the information systems of the Company and its affiliates from outside the Company. 2. Host computer and client computer <ol style="list-style-type: none"> 2.1 Cyber Security Patching for Computer Operating System 2.2 Install Endpoint Security to protect against computer viruses and malicious programs. 3. A virtual private network, or VPN, is necessary to connect to the systems of the Company and its affiliates from branch offices of the Company and its affiliates or external agencies. <p>The Company requires the use of Virtual Private Network or VPN to connect to the Company's and its affiliates' systems to ensure the safety of receiving/transmitting information between branch offices or external agencies to the information systems of the Company and its affiliates.</p> 	<p>The development of an information security system requires significant technological involvement and the formation of a team to prevent cyber threats, necessitating time for information study and a relatively high investment budget. Therefore, it is essential to thoroughly assess the information and evaluate its worthiness and appropriateness for use within the organization before requesting budget approval.</p> <p>During the year 2023-2024, the Information Technology Department conducted a study on guidelines for developing information security by inviting a team of experts in cyber threat prevention. The purpose was to seek basic knowledge and advice on developing and enhancing cybersecurity protection systems, including:</p>	<ol style="list-style-type: none"> 1. The Company will conduct a Cyber Security Assessment to evaluate cybersecurity risks across the Company and its subsidiaries to identify vulnerabilities and enhance the existing cybersecurity framework. 2. The Company will establish a cyber threat knowledge base and preventive guidelines to raise cybersecurity awareness among users of the Company's and its subsidiaries' information systems. 3. The Company will establish a 24/7 Cyber Security Operation Team and set up a Cyber Security Operation Center (CSOC) to monitor and safeguard against cyber threats.

Target	Action Plan	Key Performance in 2024	Guidelines for Improving future operations
<p>- Raise awareness of cyber threats (Cyber Security Awareness) to employees at all levels to promote knowledge to keep up with various forms of cyber threats and reduce the risk of cyber threats in the operations under the Company information systems and the daily lives of employees.</p>	<p>4. Knowledge Base</p> <p>4.1 The information management team regularly conducts cybersecurity studies.</p> <p>4.2 Basic Cyber Security Awareness Training (Basic Cyber Security Awareness Training) is a guideline for working and using information systems to be safe from cyber threats.</p> <p>5. Information System Review by External Auditor: Conduct an annual information system review by an external auditor in accordance with standards or information system review frameworks like ITIL, ISO27001, etc. and make improvements to fix any flaws discovered during the review of the information system to ensure that it is secure. However, the Company is well aware of the importance of keeping internal information safe without any leaks; as such breaches can lead to significant damage at various levels. Therefore, the Company's directors, executives, and employees at all levels must adhere to the Company's guidelines for maintaining internal information security. In addition, the Company established a Personal Data Protection Policy in 2021 as a guideline for employees at all levels to protect the personal data of customers, suppliers, employees, and related individuals. This policy allows for the strict use of data based on the requirements of the PDPA, covering the processes of securely storing, collecting, and disclosing information, including granting the data subject the right to access, verify, and withdraw consent to their data at any time. Any violation of the policy and the Company's practices will be dealt with severely, including prosecution to the fullest extent of the law and providing full compensation for damages incurred, as specified by law.</p>	<ul style="list-style-type: none"> • National Telecom Public Company Limited • The Practical Solution Public Company Limited • Advanced Info Service Public Company Limited • Distributors of cyber protection equipment and systems, both domestically and internationally, especially the products and services of the following brands such as Palo Alto Networks, Check Point, Fortinet, McAfee, Cisco, etc. <p>Based on the information provided by the service providers mentioned above, the Company has evaluated the cybersecurity system enhancement plan in phases as follows:-</p> <ol style="list-style-type: none"> 1. Phase 0: Through evaluating the current cybersecurity system, the Company assesses its capability to protect against cyber threats. 2. Following the receipt of the test results during Phase 0, the service provider will compile a report assessing the Company's cyber threat protection capabilities and offering recommendations for enhancing cybersecurity systems. This comprehensive report will be structured into three distinct phases for clarity and coherence. 	<p>- In 2025, the Company will coordinate with Proof of Concept (POC) providers to assess appropriate information security systems or approaches and present them to senior executives for project approval, along with the budget.</p>

Target	Action Plan	Key Performance in 2024	Guidelines for Improving future operations
	<ul style="list-style-type: none"> - The Company has organized training sessions to educate all executives and employees, as well as communicated through various channels such as email, website, to employees to build knowledge and understanding, as well as to realize the importance of maintaining personal data. - Establish channels for inquiries in case of inquiries regarding personal data protection. Collection, use or disclosure of information, exercise of rights or any complaints by contacting the Human Resources Department, 8th Floor, TPI Tower, 26/56 Chan Tat Mai Road, Tungmahamek, Sathorn, Bangkok 10120 Tel: +66 (0) 2213-1039, 2285-5090 Email: DPO@tpipolene.net 	<p>2.1 Phase I To safeguard against highly severe threats that may compromise the Company's operational systems. In the event of such an occurrence, the Company may experience disruptions in normal operations and incur significant financial losses.</p> <p>2.2 Phase II To safeguard against medium-level threats that may target the Company's operational systems. In the event of an incident, the impact may not be as severe as outlined in Phase 1. The Company's operations can still continue, albeit with potential temporary disruptions, and there may be some financial losses incurred.</p> <p>2.3 Phase III To safeguard the Company's work systems against potential minor threats. While these threats may not initially pose severe impacts, they could accumulate damage and escalate in severity over time.</p> <p>3. The establishment of a cyber threat prevention team by the Company is comparable to recruiting specialized doctors. Presently, there remains a shortage of personnel in this field——</p>	

Target	Action Plan	Key Performance in 2024	Guidelines for improving future operations
		<p>individuals with specialized expertise in cyber security who necessitate dedicated hours for work in this specific domain. High wages are typically Generally, hiring external team is required to monitor cyber security. The Cyber Danger Surveillance Team will continuously analyze data traffic flow through Data Traffic Log Analysis, requiring the processing of a significant volume of data at all times. Should any suspicious activity be detected, the team will promptly implement preventive or corrective measures according to the agreed scope outlined in the service contract and will promptly notify the Company's designated personnel.</p> <p>Remarks:</p> <ol style="list-style-type: none"> Investment in cyber defense cannot be a one-time occurrence; regular investments are necessary to continually develop the system to address cyber threats that have evolved alongside advancements in technology, particularly in today's landscape. Hackers are increasingly utilizing AI to enhance their capabilities for cyber-attacks. If investment is made only once, only the technology available at the time of purchasing cyber protection equipment and systems is acquired, which may be insufficient to prevent future threats. 	

Target	Action Plan	Key Performance in 2024	Guidelines for Improving future operations
		<p>2. Once the service provider has completed all required steps, the results will be compiled into a detailed plan or proposal, accompanied by a budget. This presentation will then be delivered to the Company's top executives or Board of Directors for their review, consideration, and approval in further determining the allocation of the budget.</p> <ul style="list-style-type: none"> - All employees have been communicated and acknowledged the Personal Data Protection Policy and consented to the collection of personal data. - In 2024, the Company coordinated with several service providers to test the system's operation or Proof of Concept (POC) to determine its suitability for the Company's information operations, its ability to detect information threats (Cyber Attacks), and how to report or resolve threat issues. - In 2024, no complaints of personal data breaches, including complaints from third parties and regulators arising from leaks, theft or loss of customer data and important corporate information.^[418-1] 	

Tracking and preventing data leaks

Types of Data Leaks	Management methods and solutions	The number of times the information was leaked		
		2022	2023	2024
Unauthorized access to data in information systems by people who do not have rights to it.	Information systems are regularly reviewed by external auditors every year.	0	0	0
Access to information in the information system by malicious persons (Hacker)	It is protected by Firewall/IPS and Endpoint Security information devices on the server and user machines, and the service contract is renewed regularly.	0	0	0

Products and Service Development with Responsibilities [3-3]

Researching, developing, and improving the Company's products and services is considered a critical process for researching, developing and improving products and services each time, so the Company must truly understand consumer needs or satisfaction with products. This is done by surveying current consumer demands, budgets used, duration, and implementation of new technologies or innovations in the process of product and service development. Also, the Company's production processes of goods and services must be controlled to meet the Quality Management System Standard (ISO 9001:2015), environmental management system standard (ISO 14001:2015), and management system standard, Occupational Health and Safety (ISO 45001:2018) and Energy Management System Standards (ISO50001:2011), to provide quality, safety, standardized products through modern, environmentally friendly means and that are versatile to meet consumers' needs.

Quality Policy [2-23]

<https://www.tpipolene.co.th/en/aboutus-en/quality-policy-en>

Target	Action Plan	Key Performance in 2024	Guidelines for Improving future operations
<ul style="list-style-type: none"> - Seeking to gather knowledge that is useful for the organization, both in terms of products, services and operating methods - Complete research of new products or improve the quality of at least 5 products within 3 years - Research and development of technology and innovation in at least 5 projects within 3 years - Customers are satisfied with the Company in all aspects to the highest, and the satisfaction level must not be lower than 4.10 out of 5 points. (or more than 80% per year) - Customer satisfaction level in solving the Company's problems not less than 85% 	<ul style="list-style-type: none"> - Provide R&D department to conduct basic research activities of product research and development to be the main team in the development of the organization in terms of knowledge. New product research, product improvements and new knowledge pursuits to be used in corporate development - Improve existing products to better meet customer needs and application. It takes into account environmental friendliness and safety for users. - Develop new products, which are various innovations to market to increase alternatives and meet the best uses of consumers. - Research and development of Alternative Raw Material, including the reuse of waste from the production process to reduce the use of raw materials which are natural resources. - Continuous implementation of standard management system such as Quality Management System (ISO 9001:2008, API Specification Q1), Environmental Management System (ISO 14001:2004), Occupational Health and Safety Management (ISO 45001:2018), as well as quality management system on the competency of the TEST LABORATORY, ISO/IEC 17025:2005, etc. - All of the Company's products are researched and developed under the control of ISO 9001:2015, API Specification Q1, API Specification 10A and ISO/IEC 17025:2005, as well as prepare and review the Company's quality goals objectives at least once a year. - Administration in accordance with the Company's policies under the Code of Ethics and Good Corporate Governance to ensure that customers who purchase products and services from the Company receive the highest benefits and satisfaction by 	<ul style="list-style-type: none"> - The innovative and service technology development projects, in which 30 products are successfully produced and launched in 2019-2024 as the following: <ol style="list-style-type: none"> 1. New products for 2020 include TPI All Season Paint (NP104). 2. New products for 2021 are TPI sulfate-resistant marine dry concrete mortar (M401S, M402S, M403S, and M404S), special primer paints (NP301P and NP304), probiotic products for animals (TPI - Probiotic liquid 5 formulas, powder 4 formulas). 3. New products for 2022 include Liquid Hardener, Polyurethane foam for crack repair (PU Foam Injection), Acid-resistant mortar products from waste power plant fly ash together with silicone reinforced material, heat-resistant paint used for metal pipe structures and plant chimneys with high heat, mortar anti-alkali primer — anti-mold — NP111, Probiotic products for animals (6 formulas of TPI-Synbiotics, 6 formulas of powder type) , Grease-Removing and Disinfectant Spray for Mobile Devices, IPads and Tablet in the New Normal Era. - 	<ul style="list-style-type: none"> - The Company has a policy to change its products to Specialty Polymers, which are plastic resins with more complex compositions and chemical structures, by improving production technology and machinery to be more flexible. The product has better features, higher prices, and limited production in Europe and America. None of these production technologies can be sold by any company like other basic petrochemical products. Due to this, the Company must first conduct research and develop such know-how using a specialized pilot reactor it has already built that can react at pressures of up to 3,000 bar in order to produce samples for testing and testing new markets before developing the technology to be used in the actual production line in the future. The Company expects to be able to start producing new types of specialty products within 2024. Develop products to have higher value Some products will focus on Niche Market to be able to increase sales and increase profitability, such as glue, water and glue, etc.,

Target	Action Plan	Key Performance in 2024	Guidelines for Improving future operations
	<p>producing and selling products at a fair price, with high quality and to be responsible for customers and consumers by providing with fast service to maintain a long lasting relationship based on the following principles: (1) Strive to develop quality products and services that are inclusive and deliver products on timely manner (2) Must not act in deceptively or oblivious to product quality by delivering safe, reliable products and services and does not harm the health of consumers and provide caution advice in labels or product documentation in accordance with the International Standard Quality Management System, (3) Store customer data systematically, securely and without misuse of information, and (4) Provide the responsible departments for providing feedback, providing knowledge about the Company's products and services.</p> <ul style="list-style-type: none"> - Collect information from customers who have purchased the Company's products to assess customer satisfaction levels in various areas, such as TPIPL product satisfaction, service satisfaction before, during and after-sales service, the Company's communications Satisfaction with sales support services and overall satisfaction with 2 annual assessment survey with a period of 6 months apart from the target groups, such as registered agents and registered product end-users. For assessments in the first 6 months of the year, the data collection of the year uses data of customers whose purchase sales volume in December prior to the assessment year. The second data collection for assessments in the last 6 months of the year uses customer data that has purchased goods in June of the year of assessment. The results of the satisfaction assessment of the year (based on the total average of both assessments) are taken into consideration according to ISO:9001 and formulate guidelines based on significant recommendations to the relevant authorities. 	<p>4. New products for 2023 include Rust Converter- NP110S.</p> <ul style="list-style-type: none"> - Number of product research and development projects After completion of the year 2020-2024, there were 11 projects; - The number of R&D projects completed during 2020-2024 was 11 projects as follows:- <ol style="list-style-type: none"> 1. In 2021, the study to use steel fibers as by-products from renewable fuel production processes in concrete production, separation and selection of probiotic bacteria for animal feed production. Economic animal type, Research and development of selection of lactic acid bacteria probiotic microorganisms for the production of powdered probiotics, Development of healthy beverage products with vitamin water and probiotics suitable for consumers of different ages. <ul style="list-style-type: none"> - Leading solar panel manufacturers have accepted the development of solar film for the production of high-quality solar panels, which is used in the generation of electricity from solar energy to reduce CO₂. This includes the film development project for tempered glass, which is a product that requires high technology in production and takes a long time to develop, but has a high margin and a small number of manufacturers. 	<p>as well as expanding the business to the New Normal product market, focusing on producing products for new lifestyles that Different from the past Including Bio Knox and Micromknox products and various cleaning products, etc.</p> <ul style="list-style-type: none"> - For the EVA film business, the Company has developed new products to enter the safety glass market to replace the traditional plastic used in such industry, which has a high price. - Leading solar panel manufacturers have accepted the development of solar film for the production of high-quality solar panels, which is used in the generation of electricity from solar energy to reduce CO₂. This includes the film development project for tempered glass, which is a product that requires high technology in production and takes a long time to develop, but has a high margin and a small number of manufacturers.

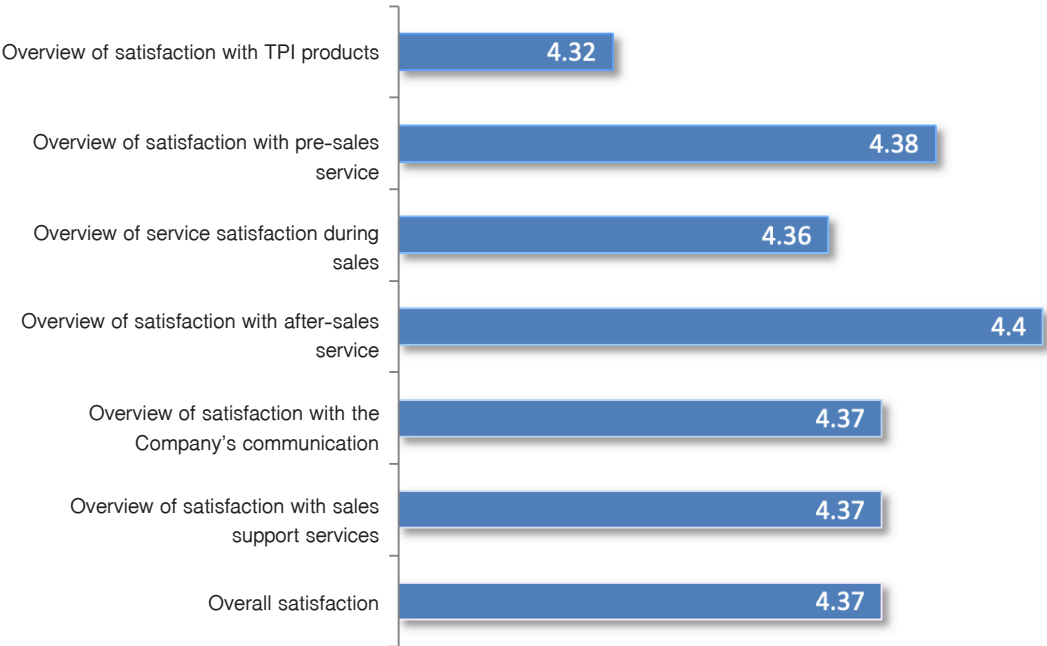
Target	Action Plan	Key Performance in 2024	Guidelines for Improving future operations
	<div><div><ul style="list-style-type: none">- Giving importance to product development in accordance with standards, regulations, and market expectations with risk management measures by monitoring the market and customers, setting product inspection procedures, having Quality Assurance, Quality Control, obtaining product certification quickly, including setting clear and concise quality according to the specified standards.- Develop products to add higher value, with some products focusing on the niche market in order to increase sales and increase profitability, such as EVA liquid and powder, etc. including expanding the business into the New Normal product market by focusing on producing products for new lifestyles that are different from the past, such as Bio Knox and Microm knox products and various cleaning products, etc.- As for the promotional guidelines for the year 2024, the Company has advertised various types of TPI products as suggested by customers as follows:-- Digital Advertising Channels, MGR Online website (www.manager.co.th)- Media types, both visual and sound, are TV, Suvarnabhumi Channel, TNN2, MCOT HD Channel 9, Sudla Fah Khiao Program, Channel 3, Nation TV 22, TOPNEWS 77, TGN and NEWS1 Channel.- Brochures, which are brochures, use high-quality paper with beautiful colors to distribute to customers.- Listening radio broadcasting through radio receivers, agricultural radio stations, Adisorn sound radio stations.- Print media such as Naewna newspaper, 360 Degree Daily, Manager newspaper.</div></div>	<div><div><div>2.</div><div>In 2022, including concrete block products from heavy ash and fly ash from waste power plants, further development of TPI Biosan effluents treatment products to have features to increase the elimination of nuisance larvae, anopheles larvae, research and develop products from natural minerals for potted plants (Soil Booster).</div></div><div><div>3.</div><div>In 2023, this includes the development of liquid organic fertilizer with the property of decomposing leaf litter or stubble that is difficult to decompose, the development of powdered calcium and vitamin C supplements, and high-quality calcium carbonate to replace clinker in hydraulic cement/Portland cement/mixed cement in order to reduce the carbon footprint of cement.</div></div><div><div>-</div><div>The total amount of expenditure on research and development in 2024 amounted to Baht 169,783,010</div></div><div><div>-</div><div>The total amount of spending on innovation technology and service in 2024 amounted to Baht 67,435,258.52</div></div></div>	<div><div><ul style="list-style-type: none">- In the sales promotion guidelines for 2024, the Department considers using recommendations from the satisfaction assessment report and suggestions received from customers as the guideline for organizing the Company's promotional activities. The Company will continue to focus on organizing free giveaways and accumulating travel targets within the construction material product group. Additionally, a giveaway program in the form of T-shirts will be implemented for the organic agricultural product group. For other product categories, free gifts will be tailored according to market and competition conditions, potentially including additional products. Furthermore, the Department aims to increase awareness of the Company's new products by incorporating them into promotional offers, such as "buy paint, get ceiling paint free" or "buy fertilizer products, get new fertilizer products." These initiatives are designed to encourage trial and raise awareness.</div></div>

Target	Action Plan	Key Performance in 2024	Guidelines for improving future operations
		<ul style="list-style-type: none"> - Overall product satisfaction with an average TPI of 4.35 points out of 5. - Overall satisfaction with pre-sales services averaged 4.37 points out of 5 points. - Overall satisfaction with the service during the sale average 4.36 points out of 5 points. - Overall satisfaction with after-sales service averaged 4.44 points out of 5 points. - Overall satisfaction with communications of the Company averaged 4.37 points out of a full score of 5. - Overall satisfaction with sales support services averaged 4.37 points out of 5. - Overall satisfaction in various aspects averaged 4.39 points out of a full score of 5 points or equal to 87.80%. - Satisfaction level of solving customer problems is 95.40%. - No cases of non-compliance with regulations related to health and safety effects of products and services were found ^[416-2]. - No case of non-compliance with regulations related to marketing communication. [416-3] 	<p>Additionally, the Department will focus on enhancing awareness through other marketing activities, such as organizing product exhibition booths and seminars. These efforts are aimed at presenting proposals to management for the consideration of policies that respond to customer needs, thereby maintaining customer satisfaction aligning with standards.</p> <p>- Product Modification Policy to Specialty Polymer by Improving Production Technology and Machinery to be more flexible</p> <p>Such products have improved properties. Prices are rising, and there are limited producers in Europe and USA. No other company sells these production technologies like other basic petrochemical products, so the company needs to research and develop such knowledge by relying on a special pilot reactor that can react at pressures up to 3,000 bar within 2024</p>

Target	Action Plan	Key Performance in 2024	Guidelines for Improving future operations
		<ul style="list-style-type: none"> - The Company has used information obtained from customer satisfaction assessments to develop and improve products/services/business processes of the Company. - Customers have given suggestions for the promotion in the future, and requested that the Company organize a promotional campaign in the form of ordering products, giving away t-shirts and advertisements for various types of TPI products via TV. <p>The Company has advertised various types of TPI products as suggested by customers as follows:-</p> <ul style="list-style-type: none"> - Digital Advertising Channels, MGR Online website (www.manager.co.th) 	

Target	Action Plan	Key Performance in 2024	Guidelines for improving future operations
		<ul style="list-style-type: none"> - Media types, both visual and sound, are TV, Suvarnabhumi Channel, TNIN2, MCOT HD Channel 9, Sudla Fah Khiao Program, Channel 3, Nation TV 22, TOPNEWS 77, TGN and NEWS1 Channel. - Brochures, which are brochures, use high-quality paper with beautiful colors to distribute to customers. - Listening radio broadcasting through radio receivers, agricultural radio stations, Adisorn sound radio stations. - Print media such as newspaper, 360 Degree Daily Manager newspaper. 	

Customer satisfaction level in various areas for the year 2024 (out of 5 points)



Note: The results of the customer satisfaction rating based on a full score of 5 points, showing the total average of both assessments by collecting data 1, use customer data with purchases in December the previous year of the year assessed for assessment in the first 6 months of the year, and the second data collection of the year. For assessments in the last 6 months of the year, the satisfaction benchmark of each assessment must not be lower than 4.1 out of 5 points.



R&D projects undertaken in 2024 (Including ongoing projects carried out in the previous year) totaling Baht 169,783,010 are as follows: –

R&D Projects	Detail	Investment value
1. A research and development project on the effectiveness of hand wash liquid soap mixed with herbal extracts in destroying pathogenic bacteria.	As a result of the COVID-19 pandemic, consumers have changed their lifestyle to a “NEW NORMAL” that pays more attention to their personal hygiene to reduce the spread of the COVID -19 virus and skincare. Therefore, in this research, hand sanitizer soap products have been developed to reduce the accumulation of bacteria to help reduce the spread of harmful pathogens.	THB 3,500,000
2. Production of modern medicine for humans Phase 1 (tablets, powder and liquid)	<p>It is the development of modern drug research for humans by using raw materials that are active ingredients listed in modern pharmaceutical formulations under standard production methods, clean, modern, and safe production processes for consumers to treat minor illnesses. that may occur in everyday life, reducing the importation of expensive medicines from abroad, such as:-</p> <ol style="list-style-type: none"> 1. Tablet: such as lozenges to relieve sore throats, pain relievers (paracetamol), and menstrual pain relievers, tablets to lower stomach acid. 2. Powder: such as mucus dissolving powder medicine, powdered medicine to increase lubrication in the knee joint. 3. Liquid for external use: such as oral disinfectants that are antiseptic mouthwash, sprays for relieving sore throats and reducing inflammation. 4. Liquid for internal use: such as medicines to lower stomach acid, Antacids and medicine relieving acid reflux, etc. <p>Remarks: The budget amounting to Baht 146,780,000 is allocated for investment in buildings, machinery, measuring tools, and instrument, whereas the research budget is only about 10%.</p>	THB 146,780,000
3. Product development of three types of herbal mouthwash (ginger, fingerroot, and zanthoxylum limonella)	Three types of herbal mouthwash (ginger, fingerroot, and Zanthoxylum limonella) for oral care and reducing the accumulation of bacteria, specifically Streptococcus spp., have been developed with a better formula than those using Chlorhexidine and the original formula that used ginger essential oil as an ingredient.	Baht 2,305,078

R&D Projects	Detail	Investment value
4. Research and development of baby talcum powder, cold loose powder, face powder, and pressed powder containing calcite, a by-product of the cement production process, along with the utilization of corn starch and refined corn starch to replace talcum.	Talcum, the main ingredient in face powders commonly available on the market, is often contaminated with asbestos, a non-biodegradable substance. Prolonged inhalation of asbestos can lead to its accumulation in the lungs and result in cancer. To address this issue, this research has developed formulas for baby talcum powder, cold loose powder, face powder, and pressed powder, all made from corn starch and modified corn starch to replace talcum. These formulas also incorporate hygroscopic substances, specifically natural calcite mineral, a by-product of the Company's cement production process. This mineral is derived from the cleaning and sedimentation of limestone, representing a sustainable reuse of production leftovers and contributing to the reduction of the greenhouse effect.	Baht 4,657,720
5. The research and development project focuses on creating handwashing and disinfectant soaps specifically tailored for industrial use in both human food and animal feed manufacturing factories. The objective is to address all seven types of food disinfection requirements while ensuring that the products are free from triclosan.	Triclosan, a disinfectant commonly used in liquid soaps, poses dangers as it can be absorbed through the skin or orally, leading to adverse health effects when accumulated in the body over time or in large amounts. This research aims to develop a hand washing soap formula capable of effectively killing germs without the use of triclosan. Additionally, the Company conducted research to identify a hand soap composition that is gentle on the user's skin and environmentally friendly because frequent handwashing in a day for both human food and animal feed manufacturing industries is unavoidable.	Baht 3,466,759
6. Study project aiming to use EVA as a binder in lithium-ion battery terminals	Given the adhesive and flexible properties of EVA, a polymer renowned for its excellence in these aspects, a study was conducted to utilize EVA to enhance the properties of the binder responsible for securing the Active Material at the terminals of lithium-ion batteries. This aims to prevent expansion or peeling during the transmission and distribution of electricity, thereby enhancing efficiency, prolonging lifespan, and bolstering safety. Initial tests suggest that EVA can effectively substitute SBR rubber, commonly used to enhance binder performance. Consequently, research and development efforts have commenced to further refine its properties and maximize efficiency.	Baht 2,324,436

R&D Projects	Detail	Investment value
7. EVA film development project for safety glass	<p>The tempered glass market is a market of significant value and continuous growth, owing to its widespread use in the construction, automotive, and industrial sectors. Currently, Polyvinyl Butyral (PVB) plastic film is commonly employed in these industries due to its suitable properties, despite its relatively high cost compared to other types of plastic. Studies and developments have shown that EVA plastic film can enhance its properties through chemical treatments and advanced production methods. Achieving equal or superior quality to PVB, including excellent adhesion properties, clarity, durability, and a more reasonable price, presents an opportunity to revolutionize the safety glass production market and offer new avenues for the Company to capture a significant share in a market of considerable value. Currently, the Company has studied, developed, and started testing EVA film for safety glass with domestic and international customers. It is in the process of being patented and undergoing further study and improvement to enable its use with customers who possess modern safety glass production technology capable of high-speed production.</p>	Baht 6,749,017
Total		THB 169,783,010

Innovation Technology and service projects in 2024 (Including ongoing projects carried out in the previous year) totaling Baht 67,435,258.52 are as follows:-

Innovation Technology and Service Projects	Detail	Investment value
1. Research and development of natural mineral (Soil Booster) products for potted plants	Nowadays, due to the COVID-19 pandemic, which has changed people's lives longer stays at home or rooms, so many people have turned to plant trees, including ornamental flowers or kitchen garden vegetables, but as a novice to planting, and don't have any understanding of fertilizers, and nowadays fertilizers, planting soils or additives that help grow crops have different properties. For convenience for those who want to grow novice or professional crops, the Company has researched Soil Booster products, which are soil additives, the composition of the material makes it highly porous, helps carry water, retain moisture and nutrients for plants.	2,750,000.00
2. Provita beverages are 20 % combined juice drinks (18% white grape juice and 2% orange juice) from concentrated white grape juice and concentrated orange juice, mixed with multivitamins and Probiotics.	The Company has conducted research and development on ProVita, a probiotic-infused beverage. Probiotics are live microorganisms naturally residing in the human gut, recognized for their beneficial effects on health. These good bacteria help maintain microbial balance, inhibit pathogenic microorganisms in the digestive system, and enhance the immune system. Provita beverages are 20% mixed juice drinks (18% white grape juice and 2% orange juice) from concentrated white grape juice and concentrated orange juice, mixed with multivitamins (vitamin B3, B5, B6 and vitamin C), Lactobacillus Paracasei microorganisms that have been pinned to the form of Microencapsulated bead capsules with microencapsulated bead techniques allow provita products to be stored at room temperature without refrigeration for up to 3 months.	4,602,234.06
3. Use of waste materials from Fiber Cement products	Remove scraps that are waste from the production process to be used as a production ingredient and used fly ash a by-product of the power plant as a raw material for the production of fiber cement.	2,000,000.00

Innovation Technology and Service Projects	Detail	Investment value
4. Lightweight Fiber-Reinforce Cement Material Project	Use scrap from the production of plastic resins process to create new composite materials so as to obtain similar properties to furniture materials, but they are water-resistant, fireproof, termite and insect resistant, and do not contain volatiles, environmentally and user-friendly; an innovative product that is in the process of applying for invention patents in the country and abroad.	5,000,000.00
5. Use in-line quality inspection technology at sheet machine.	Install cameras to detect contaminants on fiber cement surface while producing at sheet machine to control quality as well as reduce production waste.	15,000,000.00
6. Development of cleaning and coating products for solar cell panels	The development of cleaning and coating products for solar cell panels involves creating an economical formula that is environmentally friendly, non-corrosive to aluminum frames, and has the property to remove dirt, oil stains, and dust. Additionally, it coats the surface of the solar cell panels after cleaning to prevent the recapture of dust particles in the same product. This helps reduce maintenance steps and increases the efficiency of electricity generation from solar panels.	2,629,390
7. Rust converter research and development project	This project aims to develop a Rust Converter, which involves applying it as a coating directly onto rusted steel without the need to remove the rust. This solution effectively halts the growth of red rust and converts it to black rust or Magnetite, a hard crystal type that strengthens steel and prevents corrosion. Once the solution has fully dried, paint can be applied directly to the steel surface without the requirement for a rust-proof primer, thereby streamlining work processes and reducing costs.	2,500,546.30
8. Research and development project for wear-resistant plaster products	This project aims to develop and invent a plaster product that is highly abrasion-resistant and capable of withstanding wear and tear when used for plastering Feeding screw walls, caused by abrasion from the sand on conveyor belts, with the goal of reducing damage and increasing service life. To achieve this, the plaster has been developed by combining a special grade of epoxy resin with Portland cement, mixed aggregates, and silica fume, leveraging the advantageous properties of each component to produce wear-resistant plaster. It boasts high abrasion and scratch resistance properties and can be applied to metal surfaces. Furthermore, it is easy to use and does not stream down during application.	2,617,094.00

Innovation Technology and Service Projects	Detail	Investment value
9. Contact primer research and development project	This project involves developing a contact primer for dusty surfaces that can be applied to concrete or plaster surfaces previously painted a long time ago. The original paint may be peeling or dusty. The primer aims to enhance adhesion between the new layer of paint and the damaged chalk surface, facilitating better adhesion of the topcoat to the old paint surface without requiring its removal. Additionally, it serves to condition general surfaces afflicted by dust problems, ensuring that they are prepared properly for painting.	3,002,679.71
10. Development of high-quality calcium carbonate to replace clinker in hydraulic cement/Portland cement/mixed cement for the reduction of carbon footprint of cement	This project involves inventing a process for producing hydraulic cement that reduces carbon dioxide (CO ₂) emissions by synthesizing a special type of calcium carbonate (CaCO ₃) with high-purity and suitable properties for use as a replacement material for clinker in the production of hydraulic cement. This special type of CaCO ₃ can be synthesized from lime (CaO) and CO ₂ gas, which is obtained from the hot air released during the cement production process. Therefore, it represents a method for (Carbon Capture and enhancing the quality of hydraulic cement products.	3,904,441.31
11. Research and development project focusing on mortar formulation used together with robots, for large-scale structural work	This project aims to develop a cement material suitable for use with house-building robots. While small-scale structures have been successfully developed, their high resolution has led to elevated production costs. Scaling up to larger pieces further exacerbates these costs when compared to traditional construction methods. To progress this research, existing mortar materials are being enhanced to improve usability, facilitating the construction of larger structures and adjusting production costs to better suit larger workpieces.	3,177,851.26
12. The project to research and select probiotic strains available in Thailand and develop freeze-drying methods, in conjunction with the development of powdered probiotic dietary supplements	It is a research and development project aimed at producing powdered probiotic supplements. In the production process, freeze-drying techniques are used to dry the probiotic microorganism <i>Lactobacillus paracasei</i> , which is already the Company's property. The dried powder of this microorganism will then be used as an ingredient in the formulation of powdered probiotic supplements for consumers seeking to add beneficial microorganisms to their bodies. During the research, probiotic microorganism strains available in Thailand will be selected as additional ingredients to enhance the product's potential by incorporating a greater variety of microorganism strains.	7,584,019.48

Innovation Technology and Service Projects	Detail	Investment value
13. The project to develop condensed organic acids from the organic fertilizer production process using extracts from neem seeds and <i>Stemona tuberosa</i> Lour. to enhance pest control efficiency	This project focuses on utilizing organic acids obtained through condensation during the composting of liquid organic fertilizers. This condensate, which has properties similar to wood vinegar derived from charcoal burning, consists of organic acids and various biomolecules that can be used for agricultural purposes. However, wood vinegar from the composting process has limited effectiveness in repelling insects. Therefore, this project aims to enhance the quality of wood vinegar by incorporating plant extracts, including neem seeds and <i>Stemona tuberosa</i> Lour., along with surfactants in various ratios to improve its efficiency.	3,407,923.32
14. The project to extract lactic acid from by-products of the <i>Lactobacillus</i> production process for use in cosmetic manufacturing	This project focuses on improving the production of <i>Lactobacillus</i> bacteria to enhance lactic acid production efficiency without affecting the Company's Provita juice products. Additionally, it aims to extract lactic acid from by-products for use in cosmetic manufacturing. An experiment was conducted to determine the optimal concentration of nutrients from nitrogen, carbon, and affordable mineral sources available in the market to create suitable conditions for high-yield lactic acid production. An experiment was then conducted to extract lactic acid from the by-products of microorganism production. The goal was to obtain lactic acid with a purity of over 90%, free of color and unpleasant odor, while maintaining stable physical and chemical properties suitable for cosmetic products throughout their shelf life. The extracted lactic acid was then used in cosmetic manufacturing. This approach repurposes waste materials to create high-value industrial products, reducing waste and minimizing environmental impact. It represents the optimal utilization of by-products for maximum benefit.	3,424,353.42

Innovation Technology and Service Projects	Detail	Investment value
15. Research and development of thin-pour road repair mortar products	This project focuses on developing ready-mixed cement products for floor repairs that can be applied in thin layers ranging from 1 to 5 millimeters. These products feature ease of application, a smooth, granule-free surface, high adhesion strength, no shrinkage, and the ability to be used within four hours. Therefore, chemicals are used in appropriate proportions to enhance quality, such as early-stage accelerators and cement setting retarders, which must be balanced to ensure quick and effective application. These chemicals improve flowability, adhesion between new and old concrete, and water retention, preventing shrinkage and cracking. This type of ready-mixed cement is well-suited for modern needs, offering convenience, ease of use, and an aesthetically pleasing finish that can be left exposed. Additionally, it can be used within four hours, eliminating the need for a new floor and saving both time and money.	2,318,294.40
16. Improvement of the quality of pyrolysis oil from automobile tires to replace diesel in mining blasting and reduce the carbon footprint.	This project focuses on improving the quality of pyrolysis oil to make it clean and free from sticky rubber, so it can be used as a replacement for diesel, which is a fossil fuel to reduce CO ₂ emissions into the atmosphere, promote the disposal of old tires, and support the sustainable use of fossil fuels.	3,516,431.26
	Total	67,435,258.52

About this report

Source of Information [2-3]

The 2024 Sustainability Report of TPI Polene Public Company Limited has been prepared as the first report in accordance with the GRI International Reporting Standards to disclose the Company's annual performance in Economic, Social and Environmental dimensions, including good corporate governance, with annual reporting from January 1 to December 31, 2024, using the guidelines of GRI Standards for the Construction and Real Estate group of the Global Reporting Initiative (GRI), based on primary disclosure levels on core option criteria.

In addition, in order to demonstrate its commitment to sustainable development, the Company has linked its sustainable development goals (SDGs) in line with United Nations (UN) Sustainable Development Goals as shown in this report.

For the year 2024, there were no material changes, corrections, or newly prepared information related to modifications or errors in previously reported data.

Scope of the report [2-2]

The disclosure of information in this report presents the 2024 performance data of TPI Polene Public Company Limited with a scope of reporting covering head office, Cement Plant, Saraburi Province, Concrete Roof tile and Fiber Cement Plants, Saraburi province, LDPE/EVA Plants, Rayong province, as well as all related stakeholders.

Creditability and Reliability of the report [2-5]

The ESG Committee and the top management of the Company plays an important role in monitoring, advising, giving grant approvals and verifying the accuracy of essential information in this report so that the contents of the report are complete, accurate, and reliable to be able to respond to relevant stakeholders and in line with GRI's international reporting guidelines. The Company has no policy to procure a Third Party for External Assurance.

Upgrading the quality of report preparation

The Company allows all stakeholders to comment or express their opinion on the Annual Sustainability Report through the reader survey (as per the attachment to this report). The Company will use it as information on the development and enhancement of the preparation of the next Sustainability Report of the Company in order to further meet the needs and expectations of the relevant stakeholders.

More information about the report [2-3]

For further questions or suggestions, please contact:

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Sustainability Report 2024
On the website of TPI Polene Public Company Limited
www.tpipolene.co.th

GRI Content Index

Statement of use	TPIPP has reported in accordance with the GRI Standards for the period from 1 January 2024 – 31 December 2024
GRI 1 used	GRI 1: Foundation 2021
Applicable GRI Sector Standard(s)	N/A

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.	SDG LINKAGE TO DISCLOSURE
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION		
General disclosures							
GRI 2: General Disclosures 2021	2-1: Organizational details	SR 22-27	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 205					
	2-3: Reporting period, frequency and contact point	SR 205					
	2-4: Restatements of information	SR 205					
	2-5: External assurance	SR 205					
	2-6: Activities, value chain and other business relationships	SR 22-25, 27, 31-33					
	2-7: Employees	SR 28				SDG 8, SDG 10	
	2-8: Workers who are not employees	SR 28				SDG 8	
	2-9: Governance structure and composition	SR 34 AR: Clause 7.2.2 Information of the board of direction and the controlling persons				SDG 5, SDG 16	
	2-10: Nomination and selection of the highest governance body	AR: Clause 7.2.4 Nomination and appointment of directors and sub-directors and Presidents; Clause 8.1.1 Nomination, Development and Training of Directors				SDG 5, SDG 16	
	2-11: Chair of the highest governance body	SR 34				SDG 16	

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.	SDG LINKAGE TO DISCLOSURE
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION		
	2-12: Role of the highest governance body in overseeing the management of impacts	SR 35					SDG 16
	2-13: Delegation of responsibility for managing impacts	SR 35					
	2-14: Role of the highest governance body in sustainability reporting	SR 37					
	2-15: Conflicts of interest	AR: Clause 8.1.4 Monitoring compliance with corporate governance policies and practices; Clause 9.2 Inter-Company Transactions					SDG 16
	2-16: Communication of critical concerns	SR 35-37					
	2-17: Collective knowledge of the highest governance body	AR: Clause 8.1.1 Nomination, Development and Training of Directors					
	2-18: Evaluation of the performance of the highest governance body	SR 38					
	2-19: Remuneration policies	AR: Clause 7.4.2 Remuneration policy of directors and the Management; Clause 7.4.3 Remuneration of the Directors; Clause 8.1.2 Attendance and remuneration of the Board of Directors and audit committees of the Company individually	b. describe how the remuneration policies for members of the highest governance body and senior executives relate to their objectives and performance in relation to the management of the organization's impacts on the economy, environment, and people.	Information unavailable/incomplete	It is under consideration to proceed in the next reporting cycle.		
	2-20: Process to determine remuneration	AR: Clause 7.3.4 Remuneration Committee as at 31 December 2024					

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.	SDG LINKAGE TO DISCLOSURE
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION		
	2-21: compensation ratio	-	a. report the ratio of the annual total compensation for the organization's highest-paid individual to the median annual total compensation for all employees (excluding the highest-paid individual); b. report the ratio of the percentage increase in annual total compensation for the organization's highest-paid individual to the median percentage increase in annual total compensation for all employees (excluding the highest-paid individual); c. report contextual information necessary to understand the data and how the data has been compiled.	Information unavailable/incomplete	It is under consideration to proceed in the next reporting cycle.		
	2-22: Statement on sustainable development strategy	SR 6-9					
	2-23: Policy commitments	SR 29-30, 38-53, 120, 157, 171, 183, 189	a. describe its policy commitments for responsible business conduct, including: i. the authoritative intergovernmental instruments that the commitments reference; ii. whether the commitments stipulate conducting due diligence.	Information unavailable/incomplete	It is in the process of considering the OECD Due Diligence Guidance for Responsible Business Conduct to be applied in the organization.		SDG 16

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.	SDG LINKAGE TO DISCLOSURE
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION		
	2-24: Embedding policy commitments	SR 35, 41-52	a. describe how it embeds each of its policy commitments for responsible business conduct throughout its activities and business relationships.	Information unavailable/incomplete	It is in the process of considering the OECD Due Diligence Guidance for Responsible Business Conduct to be applied in the organization		
	2-25: Processes to remediate negative impacts	SR 168-171					
	2-26: Mechanisms for seeking advice and raising concerns	SR 168-171	a. describe the mechanisms for individuals to: i. seek advice on implementing the organization's policies and practices for responsible business conduct; ii. raise concerns about the organization's business conduct	Information unavailable/incomplete	It is in the process of considering the OECD Due Diligence Guidance for Responsible Business Conduct to be applied in the organization.		SDG 16
	2-27: Compliance with laws and regulations	SR 81					
	2-28: Membership associations	SR 38-40					
	2-29: Approach to stakeholder engagement	SR 53-60					
	2-30: Collective bargaining agreements	SR 125				SDG 8	
Material topics							
GRI 3: Material Topics 2021	3-1: Process to determine material topics	SR 61-63	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.				
	3-2: List of material topics	SR 64-66					
Economic performance							
GRI 3: Material Topics 2021	3-3: Management of material topics	SR 41-42, 68-69, 179-183					
GRI 201: Economic Performance 2016	201-1: Direct economic value generated and distributed	SR 183					SDG 8, SDG 9

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.	SDG LINKAGE TO DISCLOSURE
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION		
Indirect Economic Impacts							
GRI 3: Material Topics 2021	3-3: Management of material topics	SR 41-42, 150-155					
GRI 203: Indirect Economic Impacts 2016	203-1: Infrastructure investments and services supported	SR 155					SDG 5, SDG 9, SDG 11
Procurement Practices							
GRI 3: Material Topics 2021	3-3: Management of material topics	SR 41-42, 157, 162-165					
GRI 204: Procurement Practices 2016	204-1: Proportion of spending on local suppliers	SR 163, 165					SDG 8
Anti-Corruption							
GRI 3: Material Topics 2021	3-3: Management of material topics	SR 41-42, 157-162, 166-167					
GRI 205: Anti- Corruption 2016	205-1: Operations assessed for risks related to corruption	SR 158-159					SDG 16
	205-2: Communication and training about anti-corruption policies and procedures	SR 166-167					SDG 16
	205-3: Confirmed incidents of corruption and actions taken	SR 162					SDG 16
Materials							
GRI 3: Material Topics 2021	3-3: Management of material topics	SR 41-42, 68-69, 83-87					
GRI 301: Materials 2016	301-1: Materials used by weight or volume	SR 85					SDG 8, SDG 12
	301-2: Recycled input materials used	SR 86					SDG 8, SDG 12
Energy							
GRI 3: Material Topics 2021	3-3: Management of material topics	SR 41-42, 68-69, 93-100					
GRI 302: Energy 2016	302-1: Energy consumption within the organization	SR 98					SDG 7, SDG 8, SDG 12, SDG 13
	302-3: Energy intensity	SR 99					SDG 7, SDG 8, SDG 12, SDG 13

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.	SDG LINKAGE TO DISCLOSURE
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION		
	302-4: Reduction of energy consumption	SR 100					SDG 7, SDG 8, SDG 12, SDG 13
Water and Effluents							
GRI 3: Material Topics 2021	3-3: Management of material topics	SR 41-42, 68-69, 101-112					
GRI 303: Water and Effluents 2018	303-1: Interactions with water as a shared resource	SR 103-104					SDG 6, SDG 12
	303-2: Management of water discharge-related impacts	SR 104					SDG 6
	303-3: Water withdrawal	SR 103, 105-107					SDG 6
	303-4: Water discharge	SR 103-104, 108-110					SDG 6
	303-5: Water consumption	SR 111					SDG 6
Emission							
GRI 3: Material Topics 2021	3-3: Management of material topics	SR 41-42, 68-83					
GRI 305: Emissions 2016	305-1: Direct (Scope 1) GHG emissions	SR 78-79					SDG 3, SDG 12, SDG 13, SDG 14, SDG 15
	305-2: Energy indirect (Scope 2) GHG emissions	SR 78-79					SDG 3, SDG 12, SDG 13, SDG 14, SDG 15
	305-3: Other indirect (Scope 3) GHG emissions	SR 78-79					SDG 3, SDG 12, SDG 13, SDG 14, SDG 15
	305-4: GHG emissions intensity	SR 78-79, 81					SDG 13, SDG 14, SDG 15
	305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	SR 80-81					SDG 3, SDG 12, SDG 14, SDG 15
Waste							
GRI 3: Material Topics 2021	3-3: Management of material topics	SR 41-42, 68-69, 112-115					
GRI 306: Waste 2020	306-1: Waste generation and significant waste-related impacts	SR 113					SDG 3, SDG 6, SDG 11, SDG 12

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.	SDG LINKAGE TO DISCLOSURE
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION		
	306-2: Management of significant waste-related impacts	SR 113-114					SDG 3, SDG 6, SDG 8, SDG 11, SDG 12
	306-3: Waste generated	SR 115					SDG 3, SDG 6, SDG 11, SDG 12, SDG 15
	306-4: Waste diverted from disposal	SR 115					SDG 3, SDG 11, SDG 12
	306-5: Waste directed to disposal	SR 115					SDG 3, SDG 6, SDG 11, SDG 12, SDG 15
Employment							
GRI 3: Material Topics 2021	3-3: Management of material topics	SR 41-42, 118-130					
GRI 401: Employment 2016	401-1: New employee hires and employee turnover	SR 122, 128					SDG 5, SDG 8, SDG 10
	401-2: Benefits provided to full-time employees that are not provided to temporary or part-time employees	SR 129					SDG 3, SDG 5, SDG 8
	401-3: Parental leave	SR 130					SDG 5, SDG 8
Labor/Management Relations							
GRI 3: Material Topics 2021	3-3: Management of material topics	SR 41-42, 118-126					
GRI 402: Labor/ Management Relations 2016	402-1: Minimum notice periods regarding operational changes	SR 123					SDG 8
Occupational health and safety							
GRI 3: Material Topics 2021	3-3: Management of material topics	SR 41-42, 133-150					
GRI 403: Occupational Health and Safety 2018	403-1: Occupational health and safety management system	SR 134, 136-137					SDG 8
	403-2: Hazard identification, risk assessment, and incident investigation	SR 134, 136, 140					SDG 8
	403-3: Occupational health services	SR 137					SDG 8

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.	SDG LINKAGE TO DISCLOSURE
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION		
	403-4: Worker participation, consultation, and communication on occupational health and safety	SR 134, 136, 138					SDG 8, SDG 16
	403-5: Worker training on occupational health and safety	SR 135, 142-143					SDG 8
	403-6: Promotion of worker health	SR 135					SDG 3
	403-7: Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	SR 134, 141					SDG 8
	403-8: Workers covered by an occupational health and safety management system	SR 143					SDG 8
	403-9: Work-related injuries	SR 145, 147					SDG 3, SDG 8, SDG 16
	403-10: Work-related ill health	SR 145, 148					SDG 3, SDG 8, SDG 16
Training and education							
GRI 3: Material Topics 2021	3-3: Management of material topics	SR 41-42, 118-126, 131					
GRI 404: Training and Education 2016	404-1: Average hours of training per year per employee	SR 122					SDG 4, SDG 5, SDG 8, SDG 10
	404-2: Programs for upgrading employee skills and transition assistance programs	SR 131					SDG 8
	404-3: Percentage of employees receiving regular performance and career development reviews	SR 131					SDG 5, SDG 8, SDG 10
Local communities							
GRI 3: Material Topics 2021	3-3: Management of material topics	SR 41-42, 150-155					
GRI 413: Local Communities 2016	413-2: Operations with significant actual and potential negative impacts on local communities	SR 151-152, 154-155					SDG 1, SDG 2

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.	SDG LINKAGE TO DISCLOSURE
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION		
Supplier Social Assessment							
GRI 3: Material Topics 2021	3-3: Management of material topics	SR 41-42, 49-50, 157, 162-165					
GRI 414: Supplier Social Assessment 2016	414-1: New suppliers that were screened using social criteria	SR 162, 165					SDG 5, SDG 8, SDG 16
	414-2: Negative social impacts in the supply chain and actions taken	SR 162-163, 165					SDG 5, SDG 8, SDG 16
Customer health and safety							
GRI 3: Material Topics 2021	3-3: Management of material topics	SR 41-42, SR 190-195					
GRI 416: Customer Health and Safety 2016	416-2: Incidents of non-compliance concerning the health and safety impacts of products and services	SR 193					SDG 16
Marketing and Labeling							
GRI 3: Material Topics 2021	3-3: Management of material topics	SR 41-42, SR 190-195					
GRI 417: Marketing and labeling 2016	417-2 Incidents of non-compliance concerning product and service information and labeling	SR 194					SDG 16
	417-3 Incidents of non-compliance concerning marketing communications	SR 194					SDG 16
Information Security and Customer privacy							
GRI 3: Material Topics 2021	3-3: Management of material topics	SR 41-42, 183-190					
GRI 418: Customer Privacy 2016	418-1: Substantiated complaints concerning breaches of customer privacy and losses of customer data	SR 183					SDG 16

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.	SDG LINKAGE TO DISCLOSURE
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION		
Innovative Technology and Service							
GRI 3: Material Topics 2021	3-3: Management of material topics	SR 41-42, 189- 195, 200-204					
Research and Development							
GRI 3: Material Topics 2021	3-3: Management of material topics	SR 41-42, 189- 199					
Transport							
GRI 3: Material Topics 2021	3-3: Management of material topics	SR 41-42, 68-69, 88-92					
Customer Satisfaction							
GRI 3: Material Topics 2021	3-3: Management of material topics	SR 41-42, 189- 196					
Products and Services							
GRI 3: Material Topics 2021	3-3: Management of material topics	SR 41-42, 189- 195					
Risk and Crisis Management							
GRI 3: Material Topics 2021	3-3: Management of material topics	SR 41-42, 172- 178					

Remarks: AR - TPIPL Annual Registration Statement/Annual Report 2024 56-1 One Report 2024
SR - TPIPL Sustainability Report 2024

Reader Survey Form

Request for your kind cooperation in responding to reader surveys

and sending this survey form back to TPI Polene Plc, at the address that appears

at the end of this report or by email to: orataij@tpipolene.co.th / chayutd@tpipolene.co.th

1. Personal data

Gender ☐ Male ☐ Female
Age ☐ Under 30 years old ☐ 30-50 years ☐ More than 50 years
Occupation, please specify.....

2. As a reader/data user, please specify that you read/relate to the uses of information from which point of view:

☐ Customer ☐ Employee ☐ Regulatory Authority ☐ Educational Institutions/Research Agencies ☐ General public
☐ Entrepreneur ☐ Government agency ☐ Financial Institutions ☐ Others, please specify.....

From what sources did you receive/read the Company's Sustainability Report?

☐ www.tpipolene.co.th ☐ Employees of TPI Polene Public Company Limited
☐ Office/Factory/Subsidiary ☐ Others please specify.....

4. The purpose of reading this Sustainability Report:

☐ To get to know the Company ☐ To find out about the decision to use the Company's products/services.
☐ To study projects that benefit society and the environment. ☐ For research and study of sustainability practices.
☐ Others, please specify.....

5. What is your opinion about this Sustainability Report of TPI Polene Public Company Limited?

The completeness of the report covers important issues of interest to you.	<input type="radio"/> Much <input type="radio"/> Moderate <input type="radio"/> Low
The beauty of the design of the booklet	<input type="radio"/> Much <input type="radio"/> Moderate <input type="radio"/> Low
The appeal of the content, the reports, and the presentation style	<input type="radio"/> Much <input type="radio"/> Moderate <input type="radio"/> Low
Content clarity, easy to understand and not confusing.	<input type="radio"/> Much <input type="radio"/> Moderate <input type="radio"/> Low
Overall reporting satisfaction	<input type="radio"/> Much <input type="radio"/> Moderate <input type="radio"/> Low

6. What part of the content of this sustainability report interests you the most?

☐ About TPI Polene ☐ TPI Polene and its Sustainability ☐ Environmental Impact Management
☐ Community and Social Development ☐ Business Operation under Good Corporate Governance

7. Do you think the contents of this report contain all the issues of interest to you?

☐ Complete
☐ Not complete, need more information
(Please identify the issues that are of your interest and would like to disclose more in the Company's subsequent Sustainability Report)

.....
.....

8. What additional matters do you think TPI Polene Public Company Limited should develop or improve in its sustainability performance?

.....
.....

9. Comments or other additional suggestions to further improve the Company's Sustainability Report.

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TPI Polene Public Company Limited would like to thank you for your kind cooperation and response in this survey form. Information from your answers about this Sustainability Report will be used to improve the preparation of future Sustainability Reports of the Company.



บริษัท ทีพีโอ โพลีน จำกัด (มหาชน) TPI POLENE Public Company Limited

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