



2025

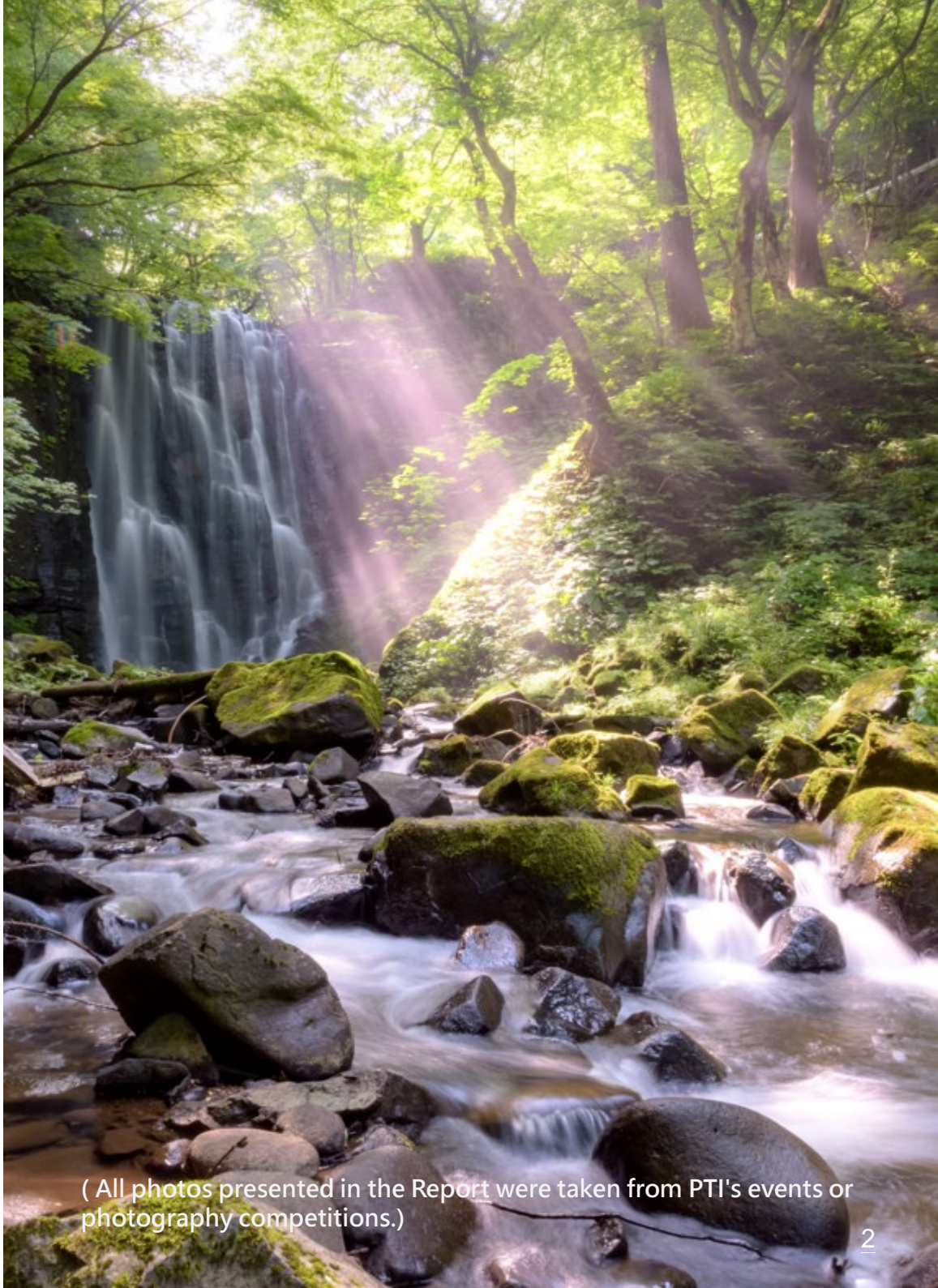
TCFD Report

Powertech Technology Inc.



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(All photos presented in the Report were taken from PTI's events or photography competitions.)

1 Preface

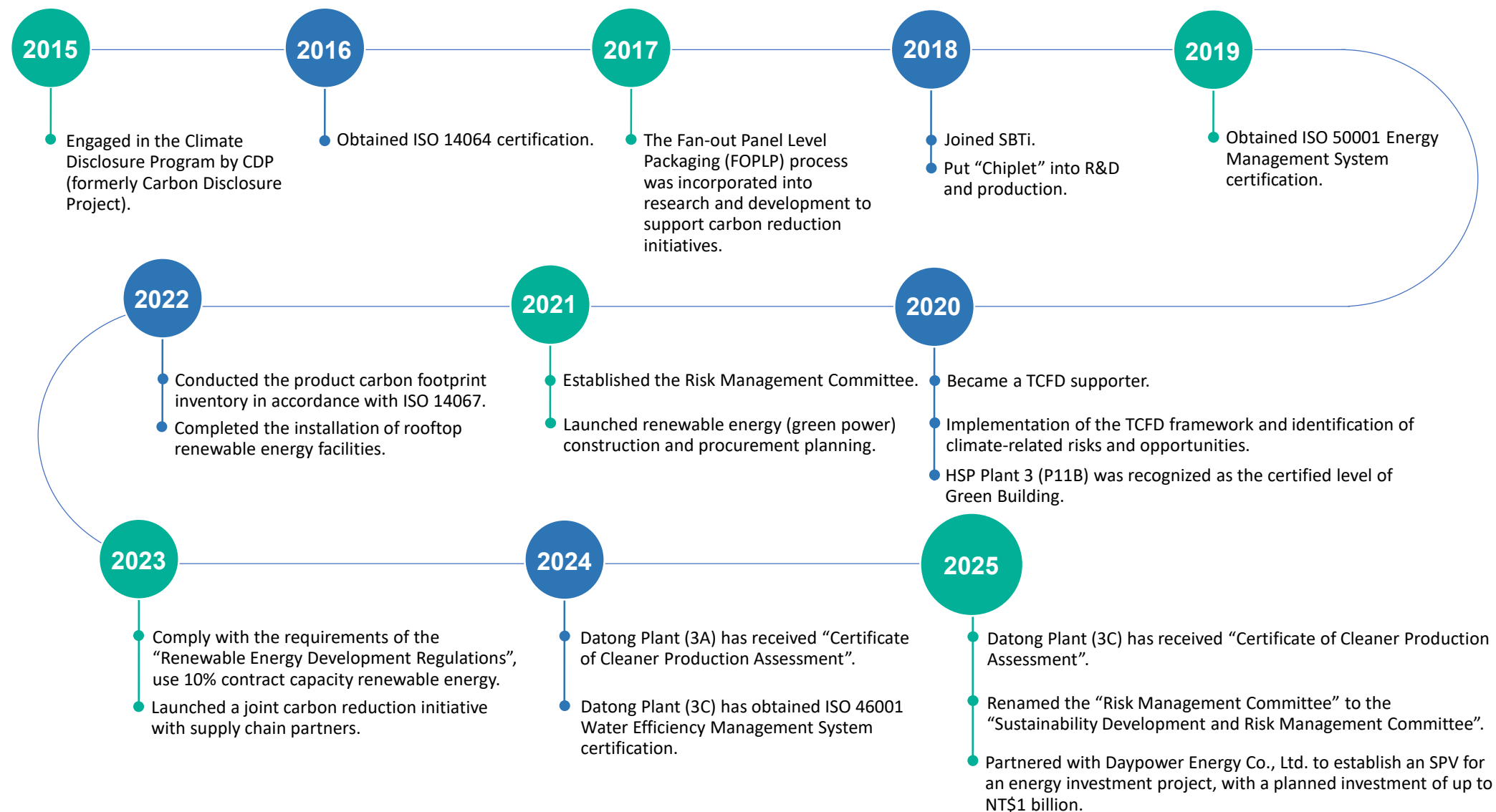
Climate change driven by global warming has become one of the most significant challenges facing humanity and a key issue of concern for the international community. In response to the risks and impacts brought about by extreme weather events, Powertech Technology Inc. (PTI) actively supports environmental protection initiatives. Since 2015, PTI has participated in the Carbon Disclosure Project (CDP) questionnaire, continuously disclosing information related to Climate Change and Water Security. In July 2020, PTI officially became a supporter of the Task Force on Climate-related Financial Disclosures (TCFD), demonstrating its commitment to climate governance and adaptation actions. The Company conducts annual assessments of climate-related risks and opportunities in accordance with the TCFD framework, covering both transition risks and physical risks. By evaluating the

potential impacts of climate change on its operations and financial performance, PTI develops environmental management policies and corresponding response measures to mitigate environmental risks, strengthen climate resilience, and ensure sustainable business operations. In recent years, carbon reduction has become a critical priority for sustainable development amid the global transition toward a net-zero economy. PTI works collaboratively with employees, customers, and suppliers to advance its low-carbon transformation, actively implementing energy-saving, carbon reduction, and greenhouse gas management initiatives. Together, PTI is progressing toward its 2050 net-zero emissions vision and striving to create a sustainable future for generations to come.



PTI Climate Change Response Milestones

PTI continues to monitor climate-related issues and implement response measures. Key climate action milestones are summarized below:



Strengthening Climate Resilience - TCFD Report

Faced with the possible impact of climate change on operations, with the support of senior executives, PTI implements climate-related risks and opportunities in accordance with the framework of the “Task Force on Climate-related Financial Disclosures Recommendations (TCFD Recommendations)” to identify and assess climate change risks and responses across organizations.

PTI regularly organizes “Climate Risk and Opportunity Workshops” to prioritize identified transition risks (including policy and legal, market, technology, and reputational risks) and physical risks. The outcomes are disclosed to highlight the potential impacts of climate change. Based on the assessment, we develop response strategies to mitigate climate risks and enhance climate resilience.

PTI TCFD Framework

Core Elements	Description	Operational Model
Governance	Disclosure of the PTI’s management of climate-related risks and opportunities.	■ The Board of Directors regularly reviews the risks and opportunities associated with climate change and water resources. ■ The Sustainability Development and Risk Management Committee regularly reports to the Board on the assessment and management measures for climate-related and water resource risks and opportunities.
Strategy	Disclosure of actual and potential climate-related risks and opportunities and their financial impacts on the organization.	■ Conducted climate-related risks and opportunities across short, medium, and long terms through cross-functional discussions. ■ Evaluated the impact of major risks and opportunities on company operations and finances. ■ Identified the impact of major risks and opportunities by taking into consideration different climate-related scenarios.
Risk Management	Processes for identifying, assessing, and managing climate-related risks.	■ Establish mechanisms and response measures for major risks and opportunities, integrate them with operational risk management, and regularly report implementation results to the Board and management team. ■ Evaluated potential management measures and monetized required resources to estimate financial costs. ■ Organized workshops to enhance employees’ awareness of climate change.
Metrics and Targets	Key metrics and targets for managing climate-related risks and opportunities.	■ Develop management metrics and targets for climate-related risks and opportunities, and regularly review progress and implementation effectiveness, such as carbon reduction and water resource recycling. ■ Followed the ISO 50001 standard for energy management to reduce energy consumption. ■ Determined the scope of the inventory after regular reviews of potential sources of carbon emissions with the materiality principle based on ISO 14064-1 standards. ■ Enhance waste management efficiency to prevent resource depletion.

2 Climate Governance

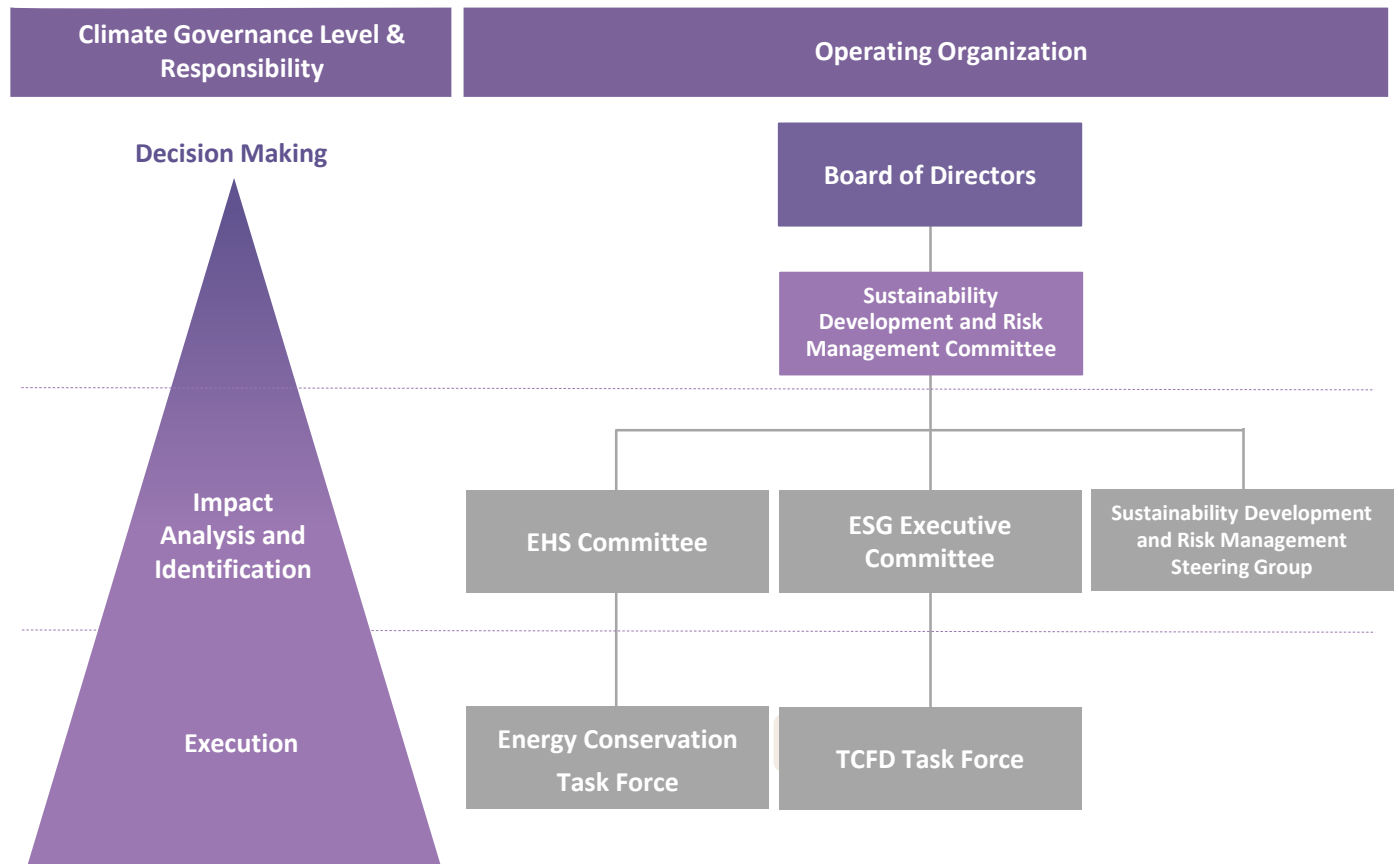
PTI is committed to strong sustainability governance and has established a comprehensive climate risk management framework. Through a top-down governance and bottom-up reporting approach, climate-related issues are integrated into business operations and decision-making. The Board of Directors and cross-functional committees regularly review sustainability and climate-related performance to strengthen organizational resilience against climate risks.

Organization Operating

To address the challenges of climate change, PTI leverages cross-functional collaboration to identify and manage climate-related risks, minimizing potential impacts on business operations.



Climate Governance Framework

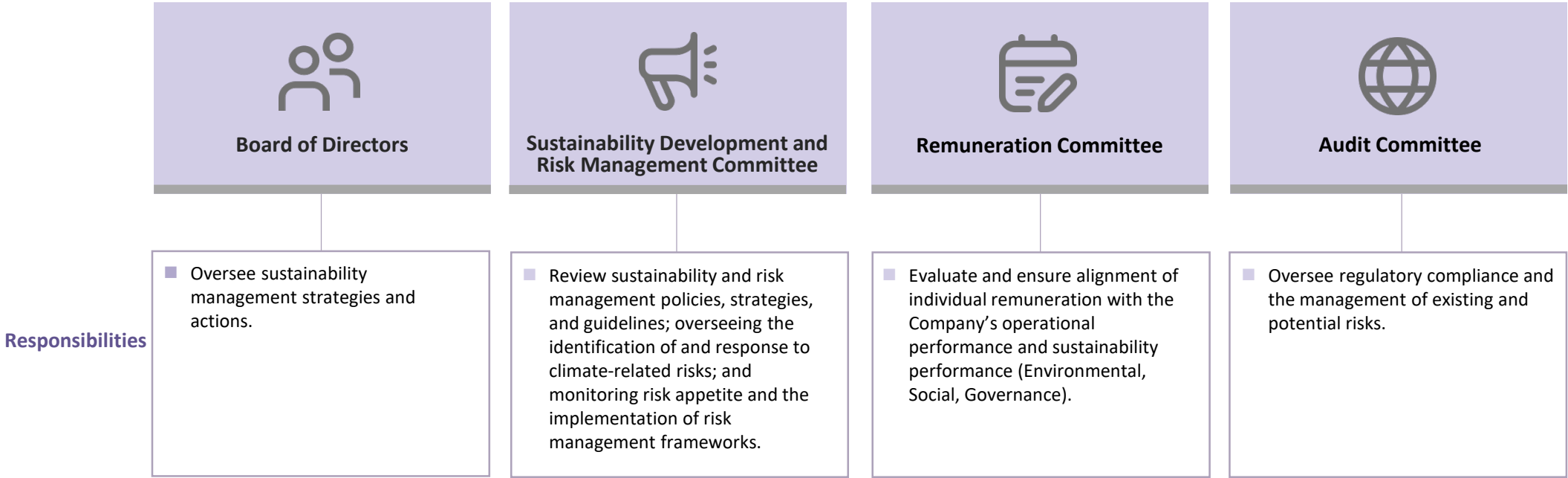


Board Oversight and Governance Structure



PTI places great importance on shareholder interests, with the Board of Directors serving as the core governing body of the Company. In advancing sustainability and climate-related strategies, the Board provides oversight and direction, supported by the Sustainability Development and Risk Management Committee, the Remuneration Committee, and the Audit Committee. These committees oversee sustainability and climate-related initiatives and regularly report their progress to the Board.

Climate Risk Operating Organization Responsibilities



Responsibilities and Roles of the Management

Effective climate action and environmental sustainability require strong leadership and cross-functional collaboration. PTI integrates sustainability objectives into its governance framework and leverages cross-functional engagement to drive environmental initiatives across the organization. This approach enables management to oversee progress, coordinate resources, and support the achievement of the Company's sustainability and climate-related goals.

Responsibilities of Climate Risk Management

	Sustainability Development and Risk Management Steering Group	ESG Executive Committee	EHS Committee
Meeting Frequency	Quarterly	Quarterly	Quarterly
Responsibilities	To strengthen climate governance, a “Sustainability Development and Risk Management Steering Group” has been established under the Sustainability Development and Risk Management Committee. The Steering Group is chaired by the President, with the Head of Corporate Governance serving as Executive Secretary, and operates on a task-oriented basis. Meetings are held quarterly to address risk-related issues, including the impacts and risks of extreme climate events on operations. Key outcomes and material issues are reported to the Sustainability Development and Risk Management Committee on an annual basis for review, thereby enhancing risk management effectiveness.	- To deliberate on corporate sustainability management matters, the President serves as Convener, with the Sustainability Development Management Department acting as Executive Secretary. The Committee supports the implementation of sustainability initiatives and facilitates communication and engagement on stakeholder concerns. TCFD Task Force The Sustainable Development Management Department serves as the Convener and conducts annual identification of climate-related risks and opportunities in alignment with the TCFD framework. Consolidated results are reported to the ESG Execution Committee for review and discussion, and serve as inputs for management decision-making.	- The President serves as the Convener and is responsible for occupational safety and environmental protection matters, with the aim of preventing occupational incidents and pollution events, improving workplace safety and occupational health conditions, and strengthening EHS management. Meetings are held quarterly to discuss climate and environmental protection issues, including the establishment of environmental and energy efficiency performance indicators, as well as the tracking and improvement of greenhouse gas (GHG) inventory results. Energy Conservation Task Force The Plant Engineering Department serves as the Convener and oversees discussions on energy conservation issues and energy management on an annual basis. Annual energy conservation performance data are compiled and reported to the EHS Committee.

Enterprise Risk Management

To ensure the sustainability of corporate operations and protect stakeholders' rights, PTI established the Sustainability Development and Risk Management Committee in accordance with the “Risk Management Policy”. The Committee oversees the Sustainability Development and Risk Management Steering Group, which integrates and manages various potential risks that may impact operations. It convenes at least once a year to report risk management conditions or significant risks to the Board of Directors, enabling the Board to implement appropriate risk management and business continuity measures.

Sustainability Development and Risk Management Steering Group comprises five functional teams covering operations, hazards (including climate hazards), information security, finance and insurance, and legal affairs. These teams identify, gather, and monitor internal and external risk information, continuously track risk factor ratings, and implement improvement measures. They also regularly present their findings to the Sustainability Development and Risk Management Committee. The Steering Group convenes quarterly meetings to assess the performance of each functional team and review the business continuity plan, ensuring the suitability, effectiveness, and efficiency of ongoing operations.

Enterprise Risk Management Process

Step 1	Step 2	Step 3	Step 4
Business Impact Analysis and Risk Identification	Risk Control	Business Continuity Management	Monitoring and Reporting
■ The Sustainability Development and Risk Management Steering Group uses risk attributes (severity and frequency) to evaluate the risk incident level and impact on operations. ■ The risk identification results are reported to the Sustainability Development and Risk Management Committee.	■ Risk communication with all units/businesses for risk management and mitigation measures. ■ The Sustainability Development and Risk Management Committee implements the risk control program and continuously improves it.	■ Establish contingency action plans, crisis management, and business continuity plans. ■ BCM Task Force implements response and recovery exercises for major incidents. ■ Implement hazard awareness training for all employees.	■ Compile information on risk identification, assessment, and control measures within the organization and report to the Sustainability Development and Risk Management Committee and the Board of Directors.

3 Climate Strategy

To enhance climate resilience, PTI has established mitigation and adaptation measures to address the potential impacts of natural hazards and evolving regulatory requirements. Comprehensive business continuity plans have been implemented to safeguard manufacturing operations, critical assets, and supply chain logistics. To mitigate energy-related risks, PTI maintains voltage and frequency stabilization systems and backup power facilities while implementing the ISO 50001 Energy Management System to improve energy efficiency. The Company also expands renewable energy adoption through rooftop solar installations, renewable energy certificate procurement, and participation in an energy investment project through a Special Purpose Vehicle (SPV), helping secure long-term renewable energy supply. To address water-related climate risks, PTI continuously improves water recycling and conservation performance, enhancing its ability to adapt to future challenges such as reduced precipitation and increased drought frequency.

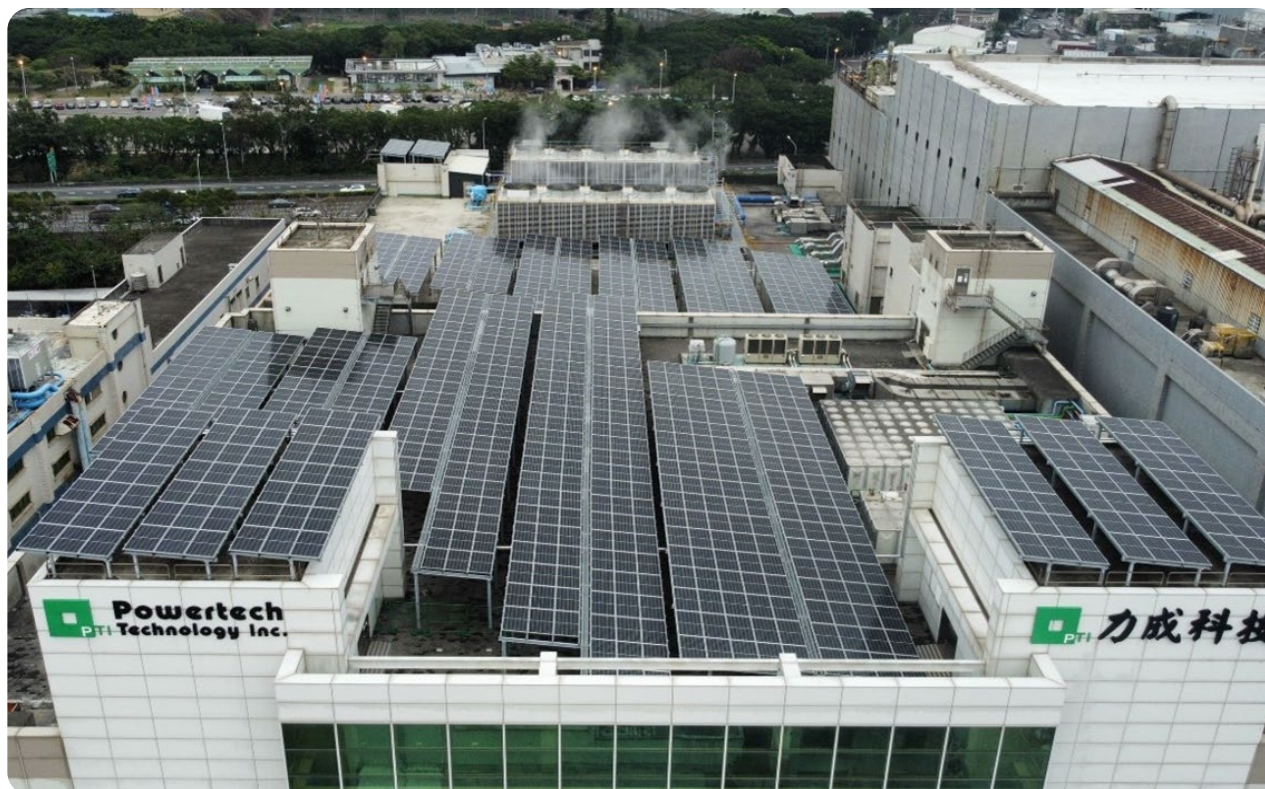
Climate Action and Resilience Strategy

Mitigation Management

- Identifying Carbon Hotspots
- Strengthening Energy Management
- Advancing Circular Economy

Adaptation Management

- Water Sustainability
- Clean Tech
- Joint Carbon Reduction in the Supply Chain



Mitigation Management | Identifying Carbon Hotspots

Greenhouse Gas (GHG) Inventory

PTI has established a greenhouse gas (GHG) inventory management system in accordance with ISO 14064-1 and the GHG Protocol, disclosing Scope 1, Scope 2, and Scope 3 emissions. The inventory covers seven GHGs, including CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, and NF₃, and reports emissions in carbon dioxide equivalent (CO₂e).

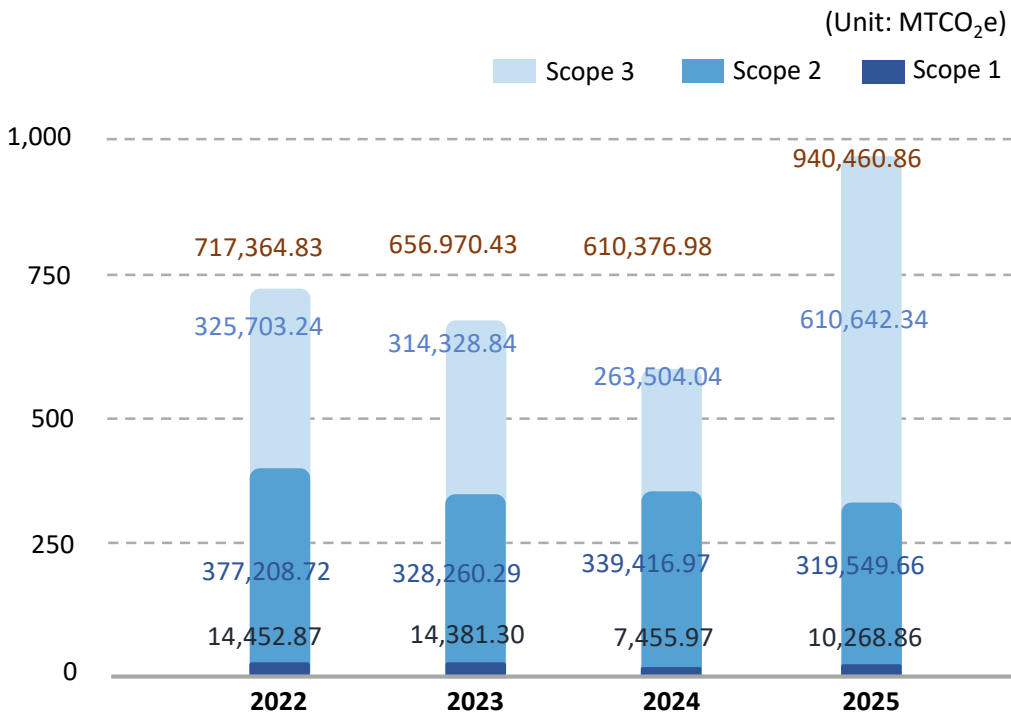
Based on actual operating data from all sites, PTI's 2025 Scope 1 emissions were 10,268.86 metric tons CO₂e (including 375.72 MTCO₂e of biogenic emissions), while Scope 2 emissions totaled 319,549.66 MTCO₂e. Combined Scope 1 and Scope 2 emissions amounted to 329,818.51 ^{Note} MTCO₂e, with Scope 2 accounting for approximately 96.89% of total emissions due primarily to purchased electricity consumption. Accordingly, PTI focuses its GHG reduction strategy on energy efficiency and electricity consumption reduction, with an annual electricity-saving target of 1.5%. (Note: GHG emissions data are based on the final third-party verification results. The original data are calculated to four decimal places, while the Report discloses data to two decimal places; therefore, minor differences in totals may occur due to rounding.)

Greenhouse Gas Emissions Status

PTI conducts annual carbon inventories in accordance with ISO 14064-1:2018 and other relevant standards, and undergoes third-party verification to identify sources and quantities of carbon emissions, serving as the foundation for carbon reduction planning.

(Unit: MTCO₂e)

Items	2022	2023	2024	2025
Scope 1	14,452.87	14,381.30	7,455.97	10,268.86
Scope 2	377,208.72	328,260.29	339,416.97	319,549.66
Scope 3	325,703.24	314,328.84	263,504.04	610,642.34
Total	717,364.83	656,970.43	610,376.98	940,460.86



Carbon Reduction Measures

PTI is actively implementing carbon reduction measures for Scope 1, Scope 2, and Scope 3 emissions, as outlined below:

Items	Description	Carbon Reduction Measures
Scope 1	The emissions include stationary combustion sources, mobile combustion sources, process emissions, and fugitive emissions. Among these, fugitive emissions constitute the majority. The primary sources of fugitive emissions are fluorinated refrigerants (HFCs and PFCs) used in cooling and refrigeration equipment, as well as specialized fluorinated lubricants.	- In alignment with national regulations and policies, the company is gradually reducing the use of fluorinated refrigerants (HFCs, PFCs) and specialized fluorinated lubricants. - When refilling refrigerants or fluorinated lubricants, and when procuring cooling and refrigeration equipment, the company prioritizes the use of low-GWP refrigerants or environmentally friendly alternatives that are not classified as greenhouse gases, in order to reduce overall usage.
Scope 2	Primarily from the use of purchased electricity.	Implement measures to improve energy efficiency and develop renewable energy infrastructure.
Scope 3	Other indirect greenhouse gas emission sources.	- Engage suppliers and partners in value chain decarbonization efforts. - Innovation in low-carbon technologies and product design.



Voluntary GHG Reduction Plan

Following the Ministry of Environment's carbon fee regulations, PTI has developed emissions reduction measures that comply with the principles of conservativeness and permanence and submitted Voluntary GHG Reduction Plans accordingly. Based on historical emissions data, five PTI sites are subject to carbon fee requirements. These plans have been reviewed and approved by the Ministry of Environment, and the anticipated carbon fee savings will be reinvested in emissions reduction initiatives to further support the Company's decarbonization efforts.

Product Carbon Footprint

In addition to conducting organizational-level greenhouse gas inventories, PTI also performs ISO 14067 product carbon footprint assessments for specific products, verified by a third party. This process identifies carbon emission hotspots throughout the product life cycle, from raw material extraction, manufacturing, and distribution, to usage and disposal, enabling the implementation of measures to effectively reduce emissions and fulfill the Company's carbon reduction commitment.

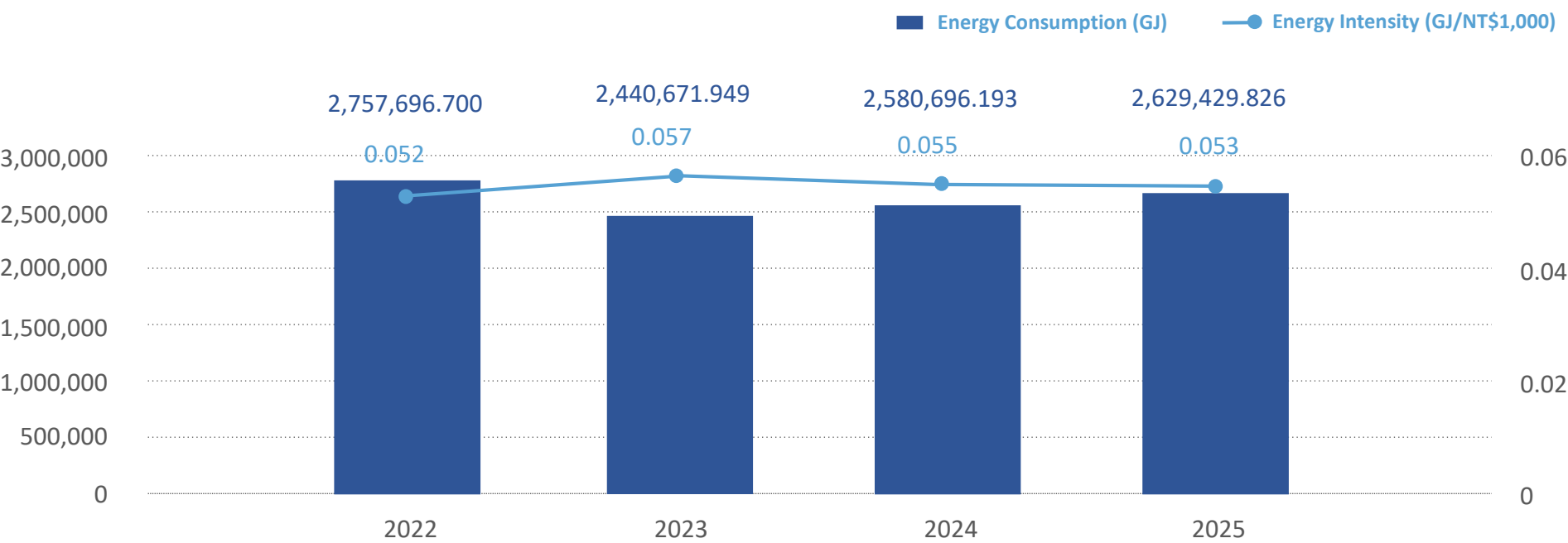
Mitigation Management | Strengthening Energy Management

Implementing ISO 50001 Energy Management System to Improve Energy Efficiency

Energy is a key resource across PTI's operations, with electricity accounting for the majority of energy consumption and more than 95% of the Company's carbon emissions. To improve energy efficiency, eight PTI sites have obtained ISO 50001 Energy Management System certification and implemented various energy-saving initiatives across facilities, production processes, and buildings, including equipment upgrades, process optimization, water recycling, lighting improvements, and energy-saving practices, thereby reducing energy consumption and greenhouse gas emissions.

PTI evaluates energy performance from an operational efficiency perspective by analyzing the relationship between revenue growth and electricity consumption. In 2025, the Company's energy intensity decreased by 2.58% compared with 2024, reflecting continuous improvements in energy efficiency. Going forward, PTI will continue to enhance energy efficiency and advance the adoption of renewable and alternative energy sources as part of its long-term sustainability and decarbonization strategy.

PTI Energy Consumption and Energy Intensity



PTI Energy Consumption in 2025

Energy Type	Consumption Amount	Energy Conversion (GJ)	Description
Electricity	724,555,807.600 kWh	2,608,400.907	Electricity consumption increased by 12,421,398.400 kWh (44,717.034 GJ) compared with 2024. Electricity intensity was 14.643 kWh/NT\$1,000. Non-renewable energy was 685,728,882 kWh (2,468,623.975 GJ). Renewable energy (solar energy) was 38,826,925.600 kWh (139,776.932 GJ).
Natural gas	476,478.000 m³	18,448.813	Consumption increased by 48,919 m³ (1,894.100 GJ) compared with 2024.
Diesel	56,128.000 L	2,119.190	GHG data verified through third-party assurance.
Gasoline	13,967.160 L	460.916	GHG data verified through third-party assurance.

Note:

1. Electricity unit conversion: 1 kWh = 0.0036 GJ

2. Natural gas unit conversion: 1 GJ = 1 m³ x 9,250 kcal x 4,185.8518 ÷ 10⁹

3. Diesel unit conversion: 1 GJ = 1 L x 0.82 (density) x 11,000 kcal/kg x 4,185.8518 ÷ 10⁹

4. Gasoline unit conversion: 1 GJ = 1 L x 0.033

5. Electricity intensity (kWh/NT\$1,000) = Electricity consumption (kWh) ÷ Individual revenue (NT\$1,000)

Renewable Energy Usage

With regard to renewable energy (solar energy) utilization, PTI generated a total of 3,481,396.600 kWh (12,533.028 GJ) of renewable energy in 2025, all of which was self-generated and self-consumed. In addition, 35,345,529 kWh (127,243.904 GJ) of renewable electricity was procured through power wheeling arrangements. As a result, PTI’s total renewable energy consumption in 2025 reached 38,826,925.600 kWh (139,776.932 GJ), accounting for more than 5% of its total electricity consumption and achieving the Company’s interim target. The increased use of renewable energy also contributed to reducing greenhouse gas emissions associated with electricity consumption.

Renewable Energy Usage Target

- The proportion of renewable electricity reached 5% in 2025 and is targeted to reach 15% by 2030.
- In line with the RE100 initiative, PTI aims to achieve 100% renewable energy by 2050.



Energy Conservation and GHG Reduction

PTI actively implements energy-saving and greenhouse gas reduction initiatives. Each year, energy-saving targets are established to enhance electricity efficiency, and supporting measures and incentive mechanisms are provided to encourage management and employees to jointly participate in energy conservation efforts. In line with the principles of measurability, reportability, and verifiability, PTI carries out energy-saving and carbon reduction initiatives, aligning UN Sustainable Development Goal 13: Climate Action, to combat climate change and its impacts. In 2025, PTI achieved electricity savings of 20,255,665 kWh, resulting in an estimated reduction of approximately 9,439.14 MTCO₂e (Note). A total of 161 energy-saving and carbon reduction measures were implemented across two major areas facility operations and manufacturing processes to reduce energy losses and greenhouse gas emissions.

Note: The carbon dioxide equivalent (CO₂e) is calculated based on the 2025 electricity emission factor (0.466 kg CO₂e/kWh) announced by the Taiwan Ministry of Economic Affairs Energy Administration.

PTI Energy Conservation and Carbon Reduction Measures in 2025

Category	Item	Description of Measures	Number of Measures	Power Consumption Reduction (Unit: kWh)	Carbon Emission Reduction (Unit: MTCO ₂ e)
Facility Energy Savings	System Parameter Optimization	- Adjustment of adsorption time for dryers - Reduction of CDA pressure to 5.5 kg	21	1,083,880	505.09
	Lighting Energy Savings	Replacement of LED lighting	44	3,625,558	1,689.51
	HVAC Energy Savings	- Cooling water system converted to chilled water supply - Cleaning and maintenance of cooling towers	14	1,977,410	921.47
	Performance Improvement	- Replacement of pumps with IE3 and IE4 motors - Replacement of high energy-consuming equipment	25	2,437,407	1,135.83
	Standby Power Reduction	System standby operation in accordance with capacity planning	7	103,157	48.07
	Solar Energy	Installation of solar panels for self-generation and self-consumption at Datong Plant (3A, 3B, 3C, and 3D), Wenhua Plant 1 (P9), and Xinxing Plant (P10)	-	3,537,845	1,648.64
Production Equipment Energy Savings	Equipment Replacement	Replacement of high-efficiency components	2	461,838	215.22
	Energy Consumption Management	- Adjustment of CDA air curtain airflow - Adjustment of temperature control schedules	22	704,561	328.32
	Equipment Modification	Cancellation of WB vacuum generators and replacement with plant-wide HV system supply	26	6,324,009	2,946.99
Total			161	20,255,665	9,439.14

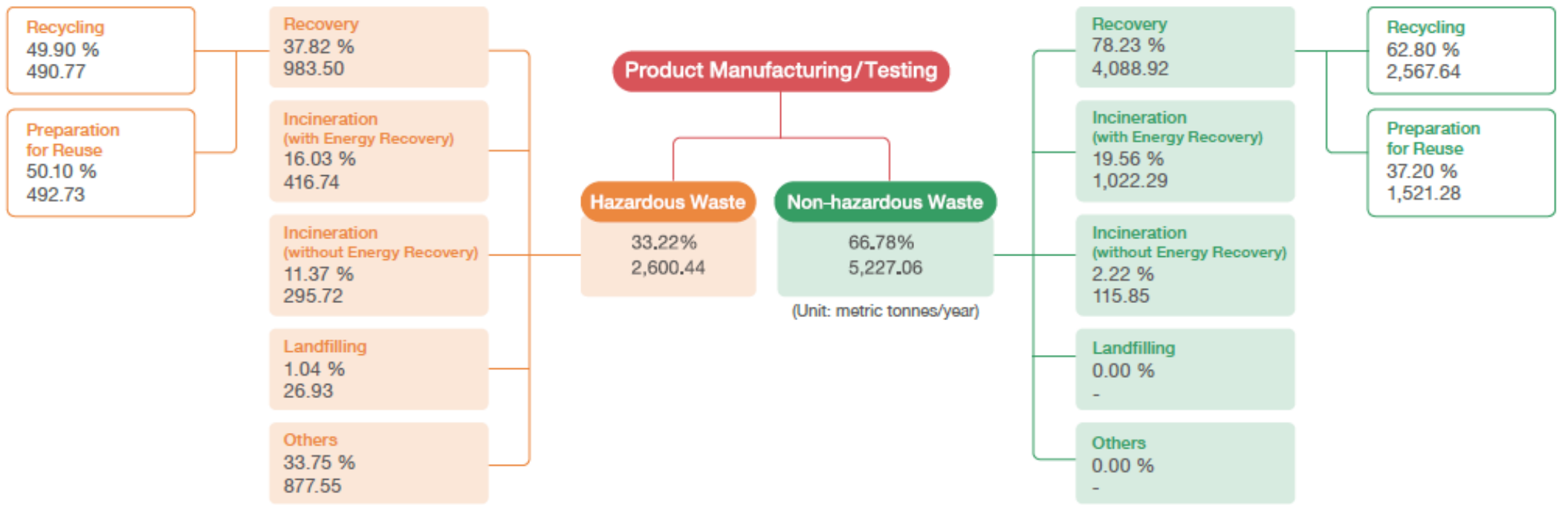
Mitigation Management | Advancing Circular Economy

Waste Management

Based on waste disposal manifest reporting data, PTI generated a total of 7,827.50 metric tonnes of waste in 2025, while waste generation intensity decreased by 12.7% compared with the baseline year, exceeding the 2025 target of a 7% reduction from 2018 levels. Hazardous waste totaled 2,600.44 metric tonnes, primarily comprising wastewater generated from wafer cleaning processes, while non-hazardous waste totaled 5,227.06 metric tonnes, mainly consisting of inorganic sludge from wastewater treatment.

By expanding recycling and reuse partners and optimizing treatment pathways, PTI achieved a 97.8% non-hazardous waste recycling rate in 2025 (78.2% without energy recovery), exceeding the >85% target and maintaining zero waste to landfill for non-hazardous waste. Hazardous waste recycling increased to 53.8% (37.8% without energy recovery).

PTI Waste Generation and Disposal



Adaptation Management | Water Sustainability

PTI sources water from municipal water supplies and groundwater. Although its facilities are not located in water-stressed areas, the Company recognizes the potential impact of water use on local communities and therefore complies with all applicable regulations governing water withdrawal and wastewater discharge. To address growing water-related challenges associated with climate change, PTI implements a water management strategy focused on reduction, reuse, and recycling, improving water efficiency and promoting water conservation across its operations.

Water Risks and Opportunities

Risk Type		Potential Risks	Response Measures	Opportunity Benefits
Transition Risks	Policy and Legal	- Wastewater quality and discharge control. - Water conservation fee charges.	- Monitor government policies and regulations. - Continuous system optimization. - Increase recycled water volume and improve recycling efficiency.	Enhancing corporate water compliance.
	Technology/Market	- Customer and consumer behavior shifts. - Advanced technology investment and R&D.	- Effective water resource management. - Expand new business opportunities.	Investment in low water consumption products and process development.
	Reputation	Corporate reputation.	Strengthen corporate resilience and competitiveness.	Enhancing corporate image and reputation.
Physical Risks	Acute	- Increased intensity and frequency of natural disasters (typhoons, heavy rainfall) causing employee absence, facility damage, and resource supply disruption. - Water source impacts leading to water quality changes.	- Implement ISO 22301 Business Continuity Management System risk assessment. - Establish operational measures to improve management efficiency. - Contract with water truck companies for emergency supply; develop alternative water source contingency plans. - Implement ISO 46001 Water Efficiency Management System at Datong Plant (3C).	- Enhancing water recycling and reuse. - Enhancing disaster response capabilities to strengthen operational resilience.
	Chronic	Rising average temperatures and sea levels causing water scarcity.	- Increase recycled water volume and improve recycling equipment efficiency. - Effective utilization of water resources.	Improving water resource efficiency and developing alternative water sources.

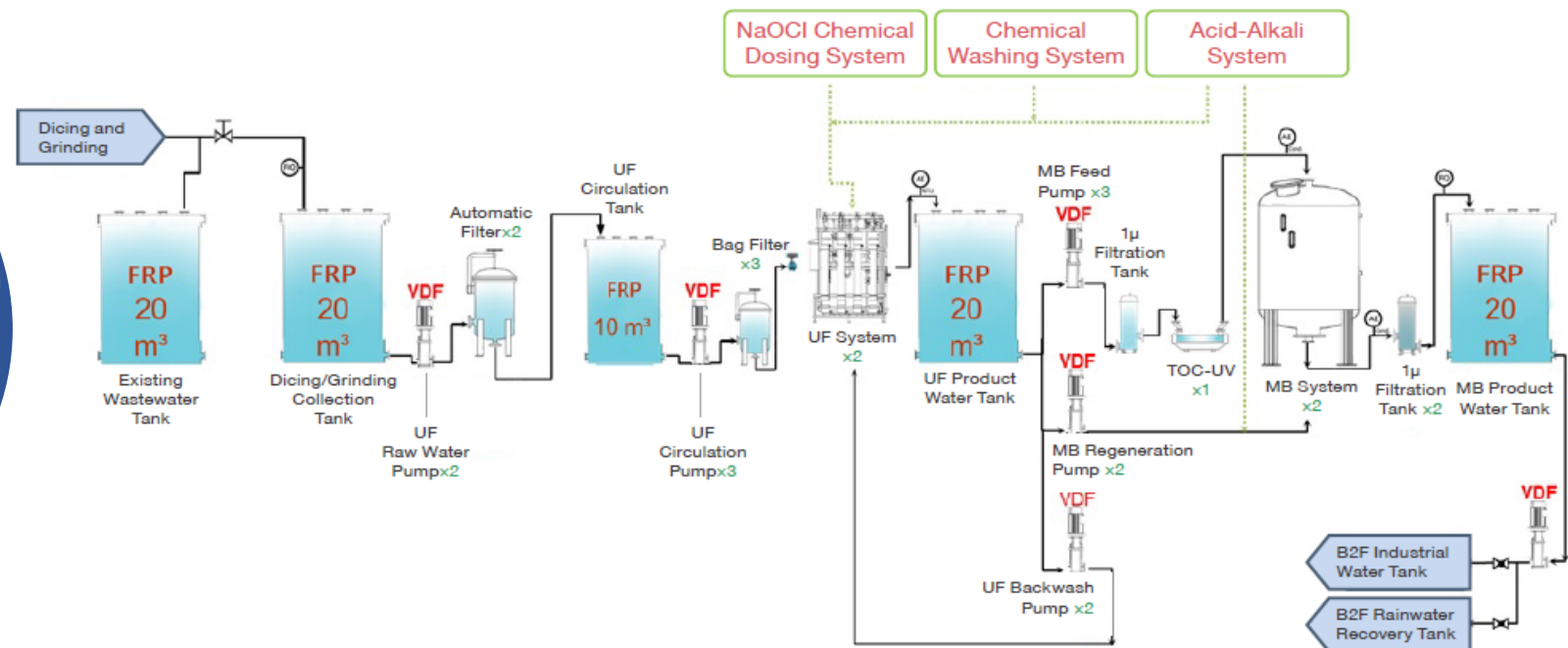
Process Water Conservation

In 2025, PTI's total water withdrawal was 3,276.266 megaliters, an increase of 258.740 megaliters from 2024 due to production growth. PTI has obtained ISO 46001 certification and established a water governance framework to monitor water use and manage water-related risks. Relevant information is regularly reviewed by the Sustainability Development and Risk Management Committee and reported to the Board of Directors annually.

PTI has established wastewater recycling systems for sawing and grinding processes and continues to expand system capacity in line with production growth. Utilizing UF technology, the systems effectively recycle and reuse process wastewater, while highly reliable and easy-to-maintain components enhance recovery efficiency and operational performance. From 2018 to 2025, system performance consistently exceeded the 85% target. In 2025, the recycling rate reached 88.30%, and recycled process water volume totaled 1,556.691 megaliters, an increase of 1.84% compared with 2024.

HSP Plant 3 (P11B) Process Wastewater Recycling System

PTI has actively implemented process wastewater recycling in all plants by applying a Ultra-Filtration (UF) system to filter out insoluble solids through the hollow fiber membrane, to steadily recycle and reuse the wastewater from the dicing and grinding process.



Dicing/Grinding Recycling Water System Efficiency

In response to limited water resource availability, PTI has invested in process wastewater recycling systems across its facilities. The systems continue to be expanded in line with capacity growth and incorporate highly reliable, easy to maintain components to enhance water recovery and reuse efficiency. As a result, system performance has consistently exceeded the 85% target.

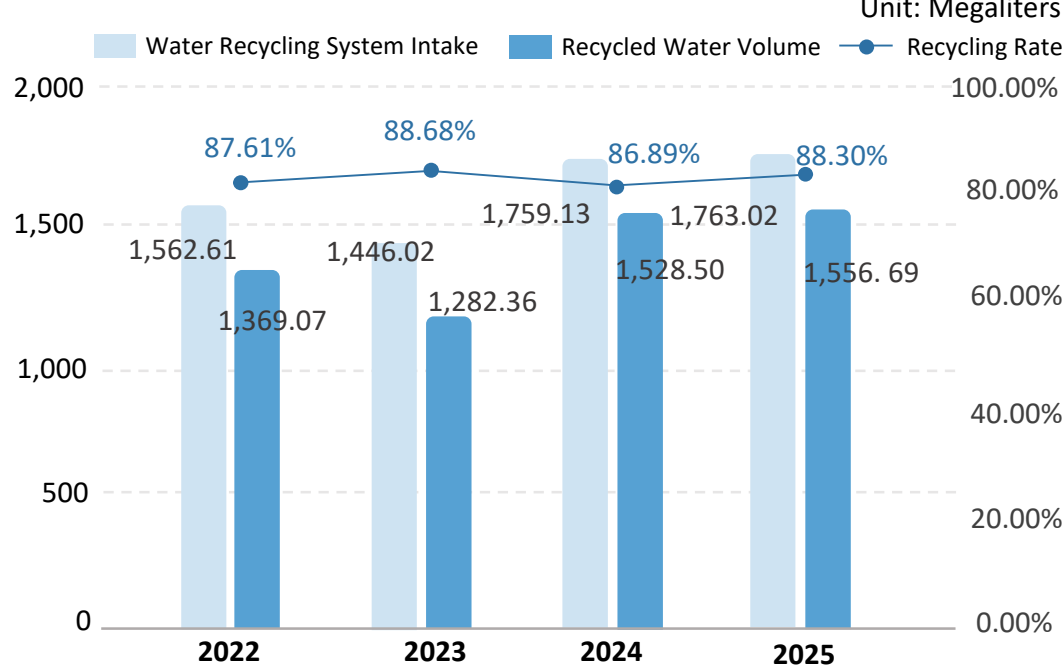


Enhancing Water Efficiency and Management

In addition to emergency response measures, PTI integrates water resource management into daily operations, actively improving water conservation and usage efficiency. Key water recycling initiatives include process wastewater reuse, greywater recycling, rainwater harvesting, and domestic water-saving practices, ensuring efficient water circulation and reducing overall consumption to enhance sustainability.

To strengthen water-saving efforts, the facilities are equipped with environmental and water-efficient systems, such as low-flow faucets, irrigation systems, and water-saving restroom fixtures. Regular awareness campaigns and employee training further reinforce water conservation, ensuring long-term effectiveness of these measures.

PTI Dicing/Grinding Recycling System Efficiency



Category	Description of Measures
Process Wastewater Recycling	Accounting for the majority of recycled water, the recovery efficiency reached 88.30% in 2025.
Reclaimed Water Reuse	Applied to cooling tower water, toilet water, etc.
Rainwater Harvesting	Storage and application for cleaning water, gardening plant watering, etc.
Domestic Water Conservation	Purchasing appliances and faucets with water-saving labels; promoting personal water-saving habits.

Adaptation Management

Clean Tech

Investing in Low-Carbon Innovation and Technology Development

To address the challenges posed by climate change, energy transition, and resource constraints, PTI continues to invest in low-carbon technology innovation and process optimization. The Company focuses on the development of advanced packaging technologies, including Fan-Out Panel-Level Packaging (FOPLP), Through-Silicon Via (TSV), fine-line interposers, and Chip-on-Wafer (CoW) processes, while strengthening capabilities in High Bandwidth Memory (HBM), logic devices, and heterogeneous integration packaging. Through continuous innovation and collaboration with customers and suppliers, PTI enhances resource efficiency, supports low-carbon product development, and strengthens its long-term climate resilience and competitiveness.

Strategy

- Annually identify climate-related risks and opportunities based on the TCFD framework (please refer to Chapter 4 “Climate Risk Management” of this report).
- Adopted and implemented the development strategy of “Clean Tech”.
- Invested in the development of “Clean Tech”, such as FOPLP and advanced packaging.



Ratio of R&D Expense to Revenue	Investment in R&D Expenses such as FOPLP, Advanced Packaging, etc.	Annual Revenue	Annual Revenue in FOPLP, Advanced Packaging, etc.
■ R&D expenditures accounted for 4.73% of net operating revenue in 2025. ■ R&D expenditures accounted for 71% of total operating expenses in 2025.	■ In 2025, R&D expenditures on Fan-Out Panel-Level Packaging (FOPLP) and advanced packaging technologies accounted for 55.18% of total R&D expenditures and continued to grow.	■ PTI's standalone revenue totaled NT\$49.483 billion in 2025, an increase of 4.6% compared with 2024.	■ In 2025, revenue from Fan-Out Panel-Level Packaging (FOPLP) and advanced packaging accounted for less than 5% of total revenue, while continuing to demonstrate strong growth momentum.

The Sustainable Path of Green Manufacturing Innovation

FOPLP Technology Highlights: Defining Sustainability with Efficiency

Fan-Out Panel-Level Packaging (FOPLP) enhances production efficiency while reducing energy and material consumption, supporting low-carbon and energy-efficient electronic devices.

- FOPLP utilizes larger panel sizes to improve production efficiency and reduce energy and material consumption. It also supports thinner, lighter, and more compact designs for mobile and wearable devices.
- PTI established its FOPLP mass production facility in 2018 to support emerging applications such as 5G, artificial intelligence (AI), and automotive electronics. As demand for advanced packaging technologies continues to grow, FOPLP has become an important solution for enhancing manufacturing efficiency and supporting sustainable development. Through continuous investment in advanced packaging technologies, PTI strives to improve resource efficiency, promote low-carbon product development, and support sustainable manufacturing.

Advanced Packaging: Enabling Low-Carbon Manufacturing

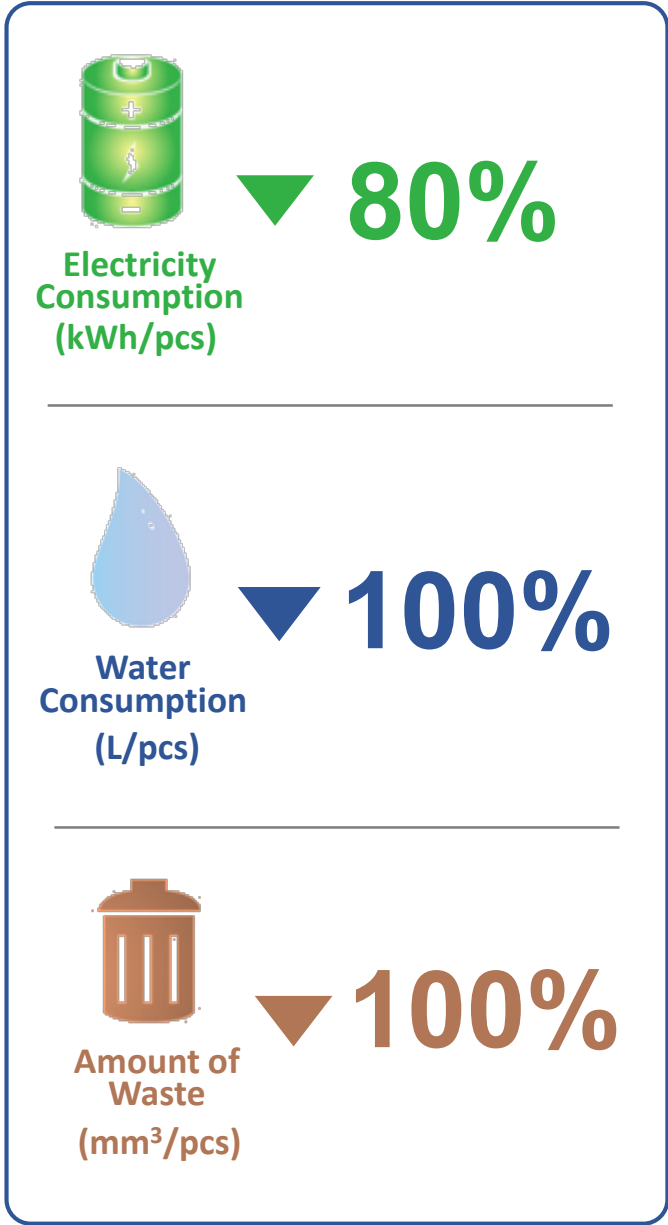
With the rapid growth of artificial intelligence (AI), high-performance computing (HPC), and high-speed connectivity applications, the semiconductor industry is increasingly focused on enhancing performance, energy efficiency, and manufacturing sustainability. As a critical link between wafer fabrication and system applications, advanced packaging plays an important role in improving resource efficiency and reducing product carbon footprints. PTI continues to strengthen its advanced packaging capabilities to support low-carbon manufacturing and sustainable development.

- PTI has long invested in the development of advanced packaging technologies and related capabilities. From the early stages of technology planning, the Company evaluates process efficiency and resource utilization while incorporating sustainable manufacturing considerations into its technology development strategy.

FOPLP Panel-Based Packaging Technology Innovation

- By utilizing rectangular panels, FOPLP reduces edge waste and improves material utilization. Compared with wafer-based packaging, it enables more chips to be processed simultaneously, enhancing manufacturing efficiency and flexibility.
- As part of its advanced packaging technology development, PTI evaluates panel-level packaging solutions from the perspectives of manufacturability and process efficiency. The Company also considers their impact on material utilization and resource efficiency, making advanced packaging one of the technological approaches that supports green manufacturing and sustainable development.

Low-Carbon Packaging Technology



As semiconductor wafer saw technology continues to evolve from traditional Blade Saw process to Stealth Dicing (SD) technology. In 2017, PTI began to gradually introduce this technology into the process and now the process has introduced 40% of Stealth Dicing technology which has significantly [reduced electricity consumption by 80%](#) and [save water consumption by 100%](#), as well as using this technology to destroy wafers to achieve [zero silicone waste emissions](#) and improve the quality of the process. Although the equipment cost is relatively high, we continue to implement ESG sustainability and actively invest in the development of this technology to achieve green and sustainable low-carbon goals.

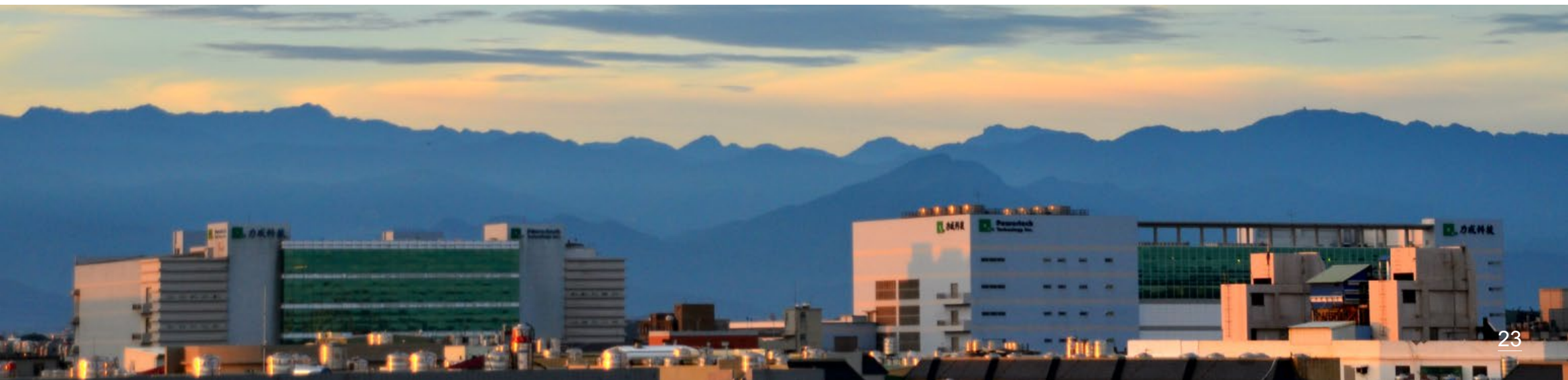
Wafer Dicing Technology Converts “Blade Saw” to “Stealth Dicing”

Items	Blade Saw	Stealth Dicing
Equipment Cost	Low	High
Cutting Damage Area	Large	Little
Waste Generation	High (326 mm ³ /pcs)	Low (0 mm ³ /pcs) (zero silicone)
Waste Treatment Cost	High	Low
Operating Time	Long (20 min/pcs)	Short (4 min/pcs)
Electricity Consumption	High (1.3 kWh/pcs)	Low (0.15 kWh/pcs)
Water Consumption	High (195 L/pcs)	Low (0 L/pcs)

Adaptation Management | Joint Carbon Reduction in the Supply Chain

In response to the 2050 net-zero carbon emission target, PTI actively promotes carbon emission data verification across its supply chain and sets specific carbon reduction targets to continuously improve management effectiveness. Through supplier code of conduct and annual social responsibility forum, we implement low-carbon management requirements, promote the joint implementation of carbon reduction commitments across the supply chain, and move towards sustainable development. In addition, PTI has participated in the program of “Advancing Low-Carbon and Smart Transformation in the Manufacturing Industry” (November 2023~August 2025), and a total of 14 companies have joined this carbon reduction action, which is expected to reduce carbon dioxide emissions by 5,866 metric tonnes by the end of the project in August 2025.

- Work together with customers and suppliers to create a low-carbon and power saving production environment.
- Conduct an organizational greenhouse gas inventory and the product carbon footprint inventory to identify carbon emission hotspots in the product manufacturing process and make improvements.



4 Climate Risk Management

The identification of climate-related risks and opportunities is led by the Sustainability Development Management Department. After integrating external information with PTI's operational conditions to develop climate risk and opportunity assessment items, a TCFD workshop is convened, bringing together representatives from Plant Engineering, Environmental, Health and Safety (EHS), Research and Development (R&D), Sales and Marketing, Supply Chain Management, Sustainability, and Finance to review and discuss the assessments.

In 2025, a total of 10 climate-related risk factors and 8 climate-related opportunity factors were identified. Climate-related risks are assessed based on the likelihood of occurrence and the magnitude of potential impact. The two risks with the highest combined scores were classified as high risks. Climate-related opportunities are assessed using a similar approach, and the two opportunities with the highest combined scores were identified as material opportunities. PTI will continue to monitor relevant trends and developments on an ongoing basis.

Climate Scenario Setting

Climate-related risks and opportunities have a significant impact on the Company's strategy and financial planning. To formulate appropriate responses, PTI conducts both quantitative and qualitative climate scenario analyses. Using the 2°C scenario (2DS), the 1.5°C scenario, and the high-emissions scenario (RCP 8.5) as the basis for assessment, we evaluate the probability, potential scale, and site-specific implications of climate hazards. This comprehensive analysis helps identify potential physical and transition risks, as well as related opportunities under future climate conditions, thereby enhancing climate resilience and informing strategic planning.



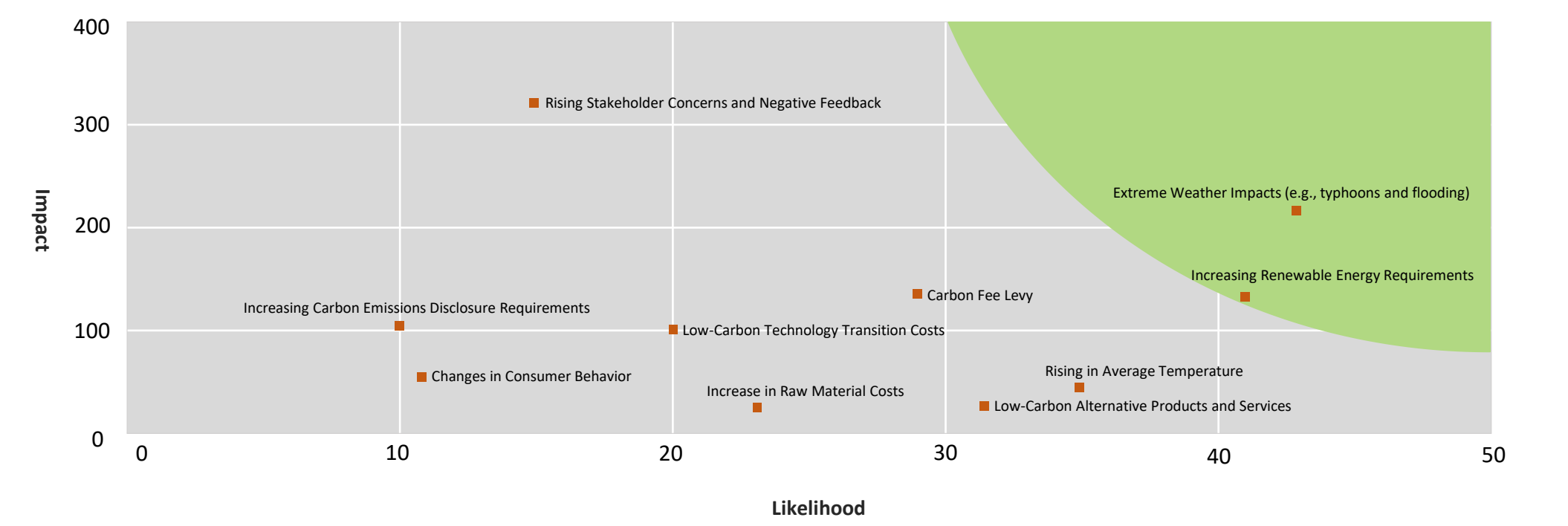
Process for Climate Risks and Opportunities Identification

Step 1**Issue collection and development of climate-related risk and opportunity assessment list****Step 2****Identification of climate-related risks and opportunities****Step 3****Assessment of severity and likelihood of climate-related risks and opportunities****Step 4****Prioritization of climate-related risks and opportunities****Step 5****Development of the risk and opportunity matrix****Step 6****Formulation of response strategies**

Climate-related Risks Identification

Results from the climate risk matrix indicate that the top two material risks are primarily concentrated in the categories of “Physical Risks” and “Transition Risks (Policy and Legal)”. Based on the combined assessment of likelihood of occurrence and severity of impact, the two risks with the highest overall scores are, in descending order, “Extreme Weather Impacts (e.g., typhoons and flooding)” and “Increasing Renewable Energy Requirements”. In response to these risks, PTI has established control measures, conducted resource reviews for response actions, and evaluated potential areas for further enhancement.

Climate-related Risks Matrix



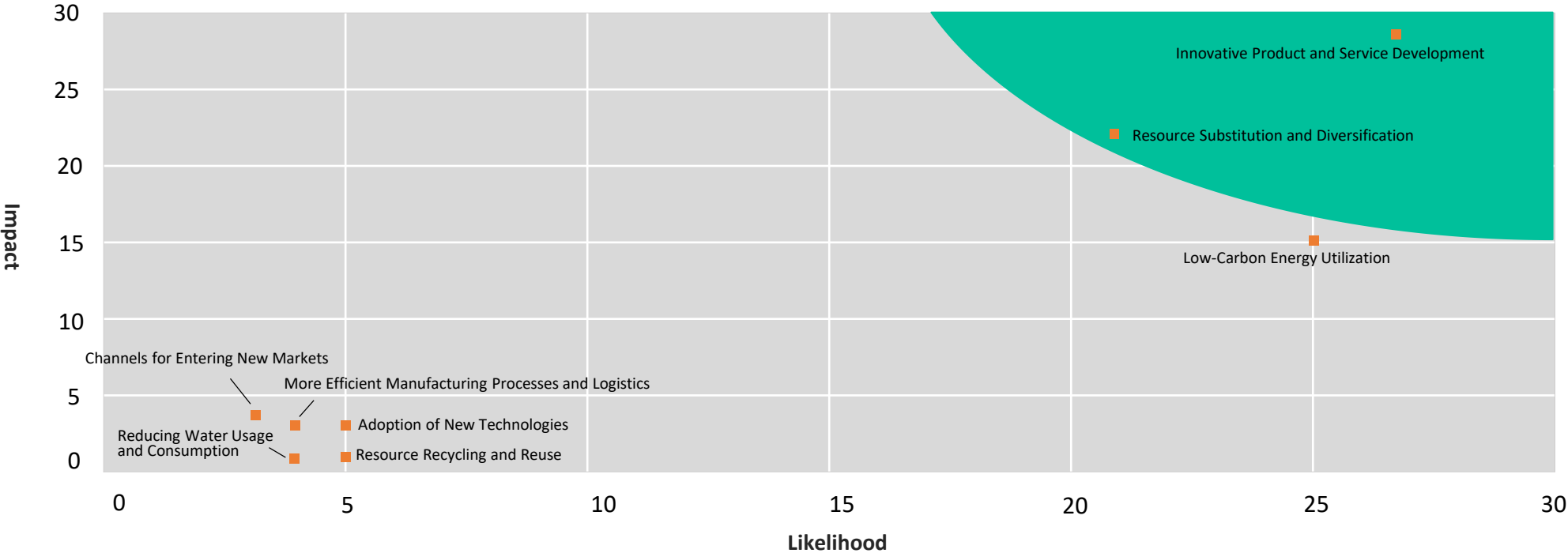
Climate-related risks are identified and categorized as follows:

Risk Type	Risk Factor	Time	Likelihood	Degree of financial impact	Ranking
Physical Risks	Extreme Weather Impacts (e.g., typhoons and flooding)	Short-Term	Very High	High	1
Transition Risks (Policy and Legal)	Increasing Renewable Energy Requirements	Short-Term	Very High	High	2

Climate-related Opportunity Identification

Results from the climate opportunity matrix indicate that the top two material opportunities are primarily related to the categories of “Products and Services” and “Energy Sources”. Based on the combined assessment of likelihood and impact, the two opportunities with the highest overall scores are “Innovative Product and Service Development” and “Resource Substitution and Diversification”. In response to these opportunities, PTI will continue to actively evaluate feasible approaches with the aim of maximizing the benefits arising from climate-related opportunities.

Climate-related Opportunity Matrix



Climate-related opportunities are identified and categorized as follows:

Opportunity Type	Opportunity Factor	Time	Likelihood	Degree of financial impact	Ranking
Products and Services	Innovative Product and Service Development	Short-Term, Medium-Term, Long-Term	Very High	High	1
Energy Sources	Resource Substitution and Diversification	Short-Term, Medium-Term, Long-Term	Very High	High	2

Climate-related Risk and Opportunity Matrix

PTI assesses climate-related risks and opportunities and evaluates their impact on organizational operations. Risks are prioritized based on their significance to enable effective resource allocation. For the identified climate risks and potential opportunities, the Company formulates concrete and actionable response strategies to enhance resilience, seize sustainable transition opportunities, and ensure robust corporate development.



Note: PTI defines short-term, medium-term, and long-term time horizons based on its operational and strategic planning cycles.

Climate-related Financial Impact Analysis

Type	Climate-related Risk (▲) / Climate-related Opportunity (★)	Potential Financial Impact	Response Plans	Administrative Cost
Physical Risk / Climate-related Opportunity	▲ Extreme Weather Impacts (e.g., typhoons and flooding) (short-term) ★ Resource Recycling and Reuse (short-term) ★ Reducing Water Usage and Consumption (medium-term)	■ Production is disrupted, resulting in financial losses and a decline in revenue. ■ Unstable raw material supply prices lead to increased operating costs.	■ Strengthen water resource management and monitoring, introduce the ISO 46001 Water Efficiency Management System, and reduce the risks of water shortages or flooding. ■ Implement waste circularity and reuse to reduce overall waste generation. ■ Operate the ISO 22301 Business Continuity Management System to enhance disaster response and recovery resilience.	Investment in water resource management, circular economy initiatives, and the development of disaster preparedness and response capabilities, with an annual investment of approximately NT\$10 million.
	▲ Rising Average Temperature (long-term)	■ Increases in electricity consumption, costs, and carbon emissions.	■ Reduce electricity consumption to achieve cost savings.	Implementation of ISO 50001 and various energy-saving and carbon-reduction measures, with an annual investment of approximately NT\$70 million.

Climate-related Financial Impact Analysis

Type	Climate-related Risk (▲) / Climate-related Opportunity (★)	Potential Financial Impact	Response Plans	Administrative Cost
Transition Risk / Climate-related Opportunity	▲ Increasing Renewable Energy Requirements (short-term) ★ Low-Carbon Energy Utilization (short-term)	■ Directly increases operational costs and requires additional investment in renewable energy infrastructure.	■ Established a renewable energy procurement project team. Set up renewable energy power generation facilities (solar panels) and energy storage facilities and procures Renewable Energy Certificates (RECs) to ensure a stable supply of renewable energy sources. ■ Continue to focus on renewable energy regulations, development trends, and customer requirements and plan follow-up management measures.	Investments in the installation, maintenance, and procurement certification of renewable energy facilities amount to approximately NT\$20 million annually.
	▲ Increasing Carbon Emissions Disclosure Requirements (short-term)	■ Increased operating costs due to customer and regulatory disclosure requirements.	■ Implement ISO 14064 greenhouse gas inventory and establish a carbon emissions inventory subject to third-party certification. ■ Conduct annual ISO 14067 product carbon footprint inventory for specific products and third-party certification to understand related product carbon emission hotspots. ■ Participate in the disclosure of climate-related information, such as CDP and self-prepared TCFD reports.	Greenhouse gas inventory and carbon information disclosure, with an annual investment of approximately NT\$1.6 million.
	▲ Carbon Fee Levy (short-term) ★ Resource Substitution and Diversification (short-term)	■ Increased operating costs (e.g., purchase/repairs of energy conservation and carbon reduction facilities and operating costs).	■ Establishing and operating an ISO 50001 Energy Management System. ■ Implement energy efficiency improvement projects and carry out energy saving and carbon-reduction measures such as replacing outdated equipment and plant facilities.	PTI implements ISO 50001 and carries out various energy-saving and carbon-reduction measures, with an annual investment of approximately NT\$70 million.
	▲ Low-Carbon Technology Transition Costs (medium-term) ▲ Changes in Consumer Behavior (medium-term) ★ Adoption of New Technologies (short-term)	■ Declining product orders and increased additional communication costs with customers.	■ Establish monitoring mechanisms for relevant regulations and emerging trends, and maintain effective communication and engagement with stakeholders through multiple channels. ■ Actively participate in domestic and international climate-related organizations or initiatives.	Research and monitoring of relevant regulations and trends, establishment of multiple communication channels, and participation in domestic and international initiatives, with an annual investment of approximately NT\$45 million.
	▲ Rising Stakeholder Concerns and Negative Feedback (medium-term)	■ Failure to meet stakeholder expectations, resulting in damage to corporate reputation.	■ Disclose the Company's sustainability efforts and climate change response measures in a transparent and public manner to enhance corporate image.	
	▲ Low-Carbon Alternative Products and Services (long-term) ★ Channels for Entering New Markets (medium-term) ★ More Efficient Manufacturing Processes and Logistics (medium-term) ★ Innovative Product and Service Development (short-term)	■ Increased R&D and operational costs. ■ Capacity planning creates constraints (reducing demand for certain existing services and technologies).	■ Invest in low-carbon and environmentally friendly products or processes. ■ Move toward green manufacturing processes and smart factory development.	Investment in research, development, and innovation of low-carbon manufacturing processes, as well as raw material development, with an annual investment of approximately NT\$100 million.
	▲ Increase in Raw Material Costs (long-term)	■ Rising energy and other raw material costs, leading to increased expenditures and declining profits.	■ Continuously seek diversified suppliers to stabilize market purchase prices. ■ Maintain ongoing communication with suppliers to control the extent of increases in material costs.	

5 Metrics and Targets

PTI is committed to corporate sustainability and actively engages in climate change mitigation. In response to the Paris Agreement’s goal of limiting global warming to well below 2°C and striving for 1.5°C, the Company has developed a climate strategy based on the IPCC Sixth Assessment Report (AR6) and other international references. Using 2020 as the baseline year, targets include a 5% carbon reduction by 2025, 15% by 2030, and achieving net zero emissions by 2050. Upholding the principles of uninterrupted operations and zero workplace injuries, the Company continues to enhance facility resilience and disaster adaptation, with clear adaptation goals. It also actively participates in CDP climate initiatives, monitors climate trends, and strengthens climate risk awareness to meet stakeholder expectations for sustainable development.

Develop Short, Medium and Long-Term Environmental Sustainability Plans

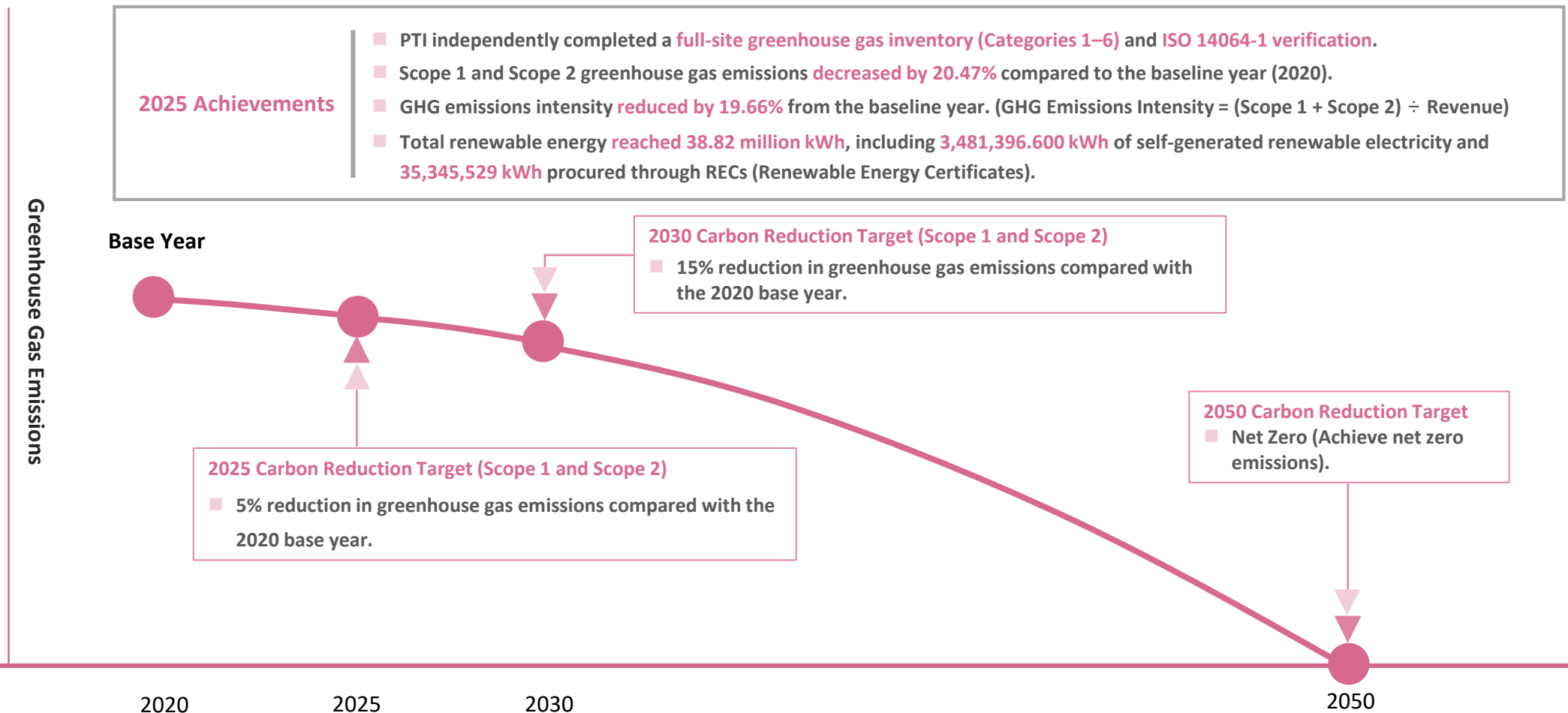
PTI upholds environmental sustainability and develops short-, medium-, and long-term plans for operations. Through action, it addresses key sustainability issues and strengthens its ability for long-term sustainable growth.

Pillar	Short-Term Plans (by 2026)	Medium and Long-Term Plans (2027-2030 and beyond)
Environmental	- Achieve an annual electricity-saving rate of 1.5%. - Rooftop solar power generation and renewable energy certificate procurement, totaling approximately 37.5 million kWh. - GHG emissions intensity decreased by 4% compared with 2020. - Absolute Scope 1 and Scope 2 GHG emissions reduced by 5% from the 2020 baseline. Reach 85% efficiency in water recycling for cutting and grinding processes. - Maintain >85% non-hazardous waste recycling rate. Reduce waste intensity by 8% compared to 2018.	- Achieve an annual electricity-saving rate of 1.5%. - Installation of rooftop solar power generation systems and procurement of renewable energy certificates (RECs) totaling approximately 112.5 million kWh; increase the renewable energy usage ratio to 15% by 2030 and achieve 100% renewable energy adoption by 2050. Reduce GHG emissions intensity by 6% from the 2020 baseline by 2030. - Reduce absolute Scope 1 and Scope 2 GHG emissions by 15% from the 2020 baseline by 2030. - Continue improving water reclaim system efficiency. - Strengthen water resource management through governance, risk management, pollution prevention, and water recycling. - Maintain >90% non-hazardous waste recycling rate. Reduce waste intensity by 12% compared to 2018.

Greenhouse Gas Reduction Targets

PTI continuously promotes energy efficiency and greenhouse gas reduction by setting measurable annual targets and implementing incentive mechanisms. Through tangible rewards, both managers and employees are encouraged to actively participate in sustainable energy management, fostering a low-carbon culture within the organization. Energy-saving and carbon-reduction efforts follow the principles of measurability, reportability, and verifiability, in alignment with UN Sustainable Development Goal 13: Climate Action. Using 2020 as the baseline year, the Company aims to reduce direct (Scope 1) and energy-related indirect (Scope 2) carbon emissions by 5% by 2025 and by 15% by 2030, with a goal to reach net zero by 2050. (For detailed decarbonization strategies and measures, please refer to Chapter 3: Climate Strategy in this report.)

PTI Net Zero Pathway



Key Indicators to Environmental Sustainability

Aspect	Indicator	Unit of Measure	2022	2023	2024	2025	Management of Measures and Targets
Water	Water withdrawal	m ³	2,967,257	2,780,544	3,017,526	3,276,266	■ Increase the utilization of water resources and water recycling capacity. ■ Establish a water recycling system to steadily recycle and reuse the process wastewater in the plants. Furthermore, water resource management performance is reviewed regularly. ■ Attain 85% water recycling system effectiveness from the dicing/grinding process.
	Water discharge	m ³	2,115,966	1,967,811	2,109,579	2,449,485	
	Water consumption (Total net fresh water consumption)	m ³	851,291	812,733	907,947	826,781	
	Water Intensity (Water withdrawal per individual revenue)	m ³ /NT\$ million revenue	56.30	65.77	63.78	66.21	
	Ultra-pure water usage	m ³	1,936,382	1,951,266	2,219,029	2,383,069.4	
	Process water recycling rate	%	87.61	88.68	86.89	88.30	
Energy	Total energy consumption	GJ	2,757,696.70	2,440,671.95	2,580,696.19	2,629,429.83	■ Continue to promote energy conservation programs and reduce electricity consumption by 1.5% per year. ■ Implement the ISO 50001 Energy Management System to improve energy efficiency and reduce energy consumption. ■ Use of renewable energy to reach 5% in 2025, 15% in 2030, and 100% in 2050.
	Purchased electricity	kWh	762,571,840	673,153,150	687,719,949	685,728,882	
	Total renewable energy consumption	kWh	146,196	8,535,594	24,414,460.20	38,826,925.60	
	Solar power generation	kWh	146,196	3,545,149	3,520,460.20	3,481,396.60	
	Purchased renewable energy	kWh	0	4,990,445	20,894,000	35,345,529	
	Energy savings	kWh	11,435,224	17,240,951	14,182,415	20,255,665	
Waste	Energy intensity (Total energy consumption per individual revenue)	GJ/NT\$ thousand revenue	0.052	0.057	0.055	0.053	■ Strengthen waste reduction at the source and waste recycling and reuse. ■ Improve pollution prevention and decrease the impact on the environment
	Non-hazardous waste recycling rate (with energy recovery)	%	-	91.5	95.7	97.8	
	Waste intensity (Industrial waste generation per individual revenue)	Metric tonne /NT\$ million revenue	0.15	0.15	0.15	0.16	
Emissions	Volatile organic compounds (VOCs)	Metric tonne	93.6	73.3	89.6	99.89	■ Implementation of ISO 14067 Carbon Footprint Verification. ■ Carbon reduction by 5% in 2025, 15% in 2030, and net zero in 2050.
	Total GHG emissions	MTCO ₂ e	717,364.83	656,970.43	610,376.98	940,460.86	
	Direct GHG emissions (Scope 1)	MTCO ₂ e	14,452.87	14,381.30	7,455.97	10,268.86	
	Indirect GHG emissions (Scope 2) (Location-based)	MTCO ₂ e	377,208.72	328,260.29	339,416.97	319,549.66	
	Indirect GHG emissions (Scope 3)	MTCO ₂ e	325,703.24	314,328.84	263,504.04	610,642.34	
	GHG emissions intensity ((Scope 1 + Scope 2) emissions per individual revenue)	MTCO ₂ e/NT\$ million revenue	7.43	8.10	7.33	6.67	
Emissions	Direct PFC emissions	MTCO ₂ e	6,216.56	6,627.15	3,187.09	3,934.60	

6 Prospect

As global attention to net-zero emissions and carbon reduction initiatives continues to grow, the responsibilities and influence of businesses in advancing environmental sustainability have become increasingly significant. Sustainability has gradually evolved into a core strategic pillar for maintaining long-term competitiveness. PTI fully recognizes the potential risks that climate change may pose to its operational performance and supply chain stability and has proactively implemented systematic management mechanisms and response measures. We continue to develop and promote medium- and long-term climate change mitigation and adaptation strategies, including the low-carbon transformation of products and services, increasing the use of renewable energy, and reducing carbon emissions and environmental impacts throughout our operations, thereby responding to global decarbonization trends and stakeholder expectations.

In addition, PTI continues to advance energy conservation and carbon reduction initiatives while extending its sustainability commitment across the entire value chain. Through close collaboration with employees, suppliers, and business partners, the Company actively promotes decarbonization and environmental stewardship, enhancing climate resilience and supporting sustainable growth. By integrating sustainability into its operations and value chain management, PTI aims to create long-term environmental and economic value while contributing to a more sustainable future.



7 Appendix

About the Report

The report aligns with the TCFD recommendations issued by the Financial Stability Board (FSB), covering the four core elements: governance, strategy, risk management, and metrics and targets. It is published in both Chinese and English on PTI's official website. For inquiries or feedback, please contact us.

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TCFD Disclosure Comparison Table

Dimension	TCFD Disclosure Recommendation	Chapter	Page
Governance	The board's oversight of climate-related risks and opportunities.	2 Climate Governance	06
	Management's role in assessing and managing climate-related risks and opportunities.	2 Climate Governance	06-09
Strategy	The climate-related risks and opportunities the organization has identified over the short, medium, and long term.	4 Climate Risk Management	27-28
	The impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	4 Climate Risk Management	25-28
	The resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2° C or lower scenario.	4 Climate Risk Management	24
Risk Management	The organization's processes for identifying and assessing climate-related risks.	4 Climate Risk Management	24
	The organization's processes for managing climate-related risks.	4 Climate Risk Management	24-28
	How processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	3 Climate Strategy 4 Climate Risk Management	10-23 27-28
Metrics and Targets	Metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	5 Metrics and Targets	29
	Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	3 Climate Strategy 5 Metrics and Targets	11-12 31
	Targets used by the organization to manage climate-related risks and opportunities and performance against targets.	5 Metrics and Targets	29-31



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United We Achieve

**Let us create new paths to sustainability one step at a time,
towards net zero carbon emissions.**
