TCFD Report

Taskforce on Climate-related Financial Disclosure

PT Great Giant Pineapple

2024

Introduction

TCFD Reporting Guidance

Introduction

PT. Great Giant Pineapple (GGP), founded in 1979, operates the world's largest fully integrated canned pineapple production facility, combining plantations and factories in a single site. As an agricultural company, GGP is deeply committed to addressing climate change.

The ongoing effects of climate change have major implications for the plantation sector, influencing production, crop quality, and the long-term viability of GGP's operations. Although climate change presents risks to existing business frameworks, it also opens up opportunities for proactive companies to gain a competitive edge.

GGP is taking on the challenge of driving the industry toward sustainability while maintaining transparency in reporting its advancements

TCFD Reporting Guidance

Purpose of this document

GGP'S main goal is to achieve Zero Emissions by 2050. Decarbonization and reducing carbon emissions are the main agenda in GGP's sustainability strategy. GGP has designed a long-term strategy and roadmap until 2030 to reduce Greenhouse gas emissions from operations carried out by all its business units.

This Report describes how climate change may impact our business and how we can successfully transition to a lower-carbon technology and adapt to a warming world. Our understanding of the challenges around climate change continues to evolve and we will update our mitigation plans accordingly

To demonstrate our commitment to climate resilience and action to our stakeholders, we are initiate on our TCFD disclosure journey to share GGP approach towards Net Zero, particularly on identification, management, and respond to the financial challenges and opportunities posed by climate change.

Governance

Governance

- GGP responds to the risks and opportunities of climate change by developing energy transition and climate change governance, which is directly supervised by the Board of Directors (BOD). The Company's commitment to the energy transition has been developed into an organizational function that involves multi-divisions and is implemented jointly throughout GGP's business processes. The establishment of the Sustainability Division strengthens sustainability governance at GGF. Decisions related to sustainability, including environmental management, energy transition, and consultation processes, originate from recommendations from the Sustainability Division.

- GGP has a strong risk management organization. The Risk Management and Internal Audit Unit is led by the Unit Head, who reports directly to the President Director. The Risk Management Division carries out regular evaluations related to identification and mitigation opportunities, including climate risks. As a check and balance, the Internal Audit Unit carries out checks on the implementation of sustainability carried out by each division and business unit.

- The Board of Commissioners has an important role in overseeing the management of the energy transition and climate change to ensure effective climate change management in the Company. The GGP Board of Directors reports on the progress of transition implementation and consults regarding decisions that need to be taken regarding the energy transition strategy to the Board of Commissioners. The climate change and sustainability issue is include in the agenda of BoC at least annually.

- A strong commitment is also demonstrated by the direct involvement of the President Director, who provides direction and makes decisions on the energy transition program to address the challenges and opportunities of climate change. The risks and opportunities of climate change are a strategic business issue led by the President Director as part of the Board of Directors with direct supervision from the Board of Commissioners. These climate-related issues include climate-related risks to the Company and financial performance, energy transition planning towards renewable energy and GHG emission reduction roadmaps to support the national net zero emissions goal.

Strategy & Risk Management

Risk Identification, Assessment, and Management

GGP realizes the importance of addressing and managing climate risks. For this reason, GGP has identified climate-related risks and opportunities, both energy transition risks and physical risks, due to the negative impacts of climate change. Identification of risks and opportunities is carried out in the business, strategy and financial planning in the short, medium and long term. These risks are mapped, measured, mitigated and managed to ensure the achievement of the climate targets set in the Net Zero Emission 2050 roadmap.

Risk management system in GGP, consist of several stages as follows:

- The Risk Management Division, together with the Risk Champion, identifies current risks originating from the company's long-term (internal) and external strategic materiality, including the issue of climate change
- The Management and Risk Management Division will analyze and prioritize the level of risks that are material to the business
- Evaluation of business risks and opportunities will conducted based on risk criteria and risk appetite identified
- After assessing the company's risks, the risk owner is responsible for managing and reporting progress to the risk management division. The Climate-related risk also reported in this stage with its impact (quantitative, qualitative, or monetary) affected the operation and mitigation plan
- The Risk Management Division prepares a summary risk evaluation report, which will be submitted to the Board and executive management

Methodology to Assess the Impacts of Climate-related Risks

GGP conduct a Transition and Physical Risk Assessment to quantify exposure to the following risk categories. This assessment is based on the financial, emissions, and climate modelling data available at the time of analysis

TCFD Risk Categories	Major Characteristics	Metrics Considered
1. Policy Risk Exposure	Risk of policy action to encourage low-carbon transition in direct operations or upstream supply chain (e.g. through carbon taxes)	• Carbon Pricing Risk Exposure
2. Market Risk Exposure	Increased costs for key suppliers	• Median EBITDA at risk for key supplier sectors due to carbon pricing • EBITDA at risk for key suppliers due to carbon pricing
3. Physical Risk Exposure	Increasing frequency and severity of climate hazards generating financial impacts on company assets	• Modelled Average Annual Loss • Relative risk (%) • Absolute Risk (mio USD) • Results provided at Enterprise Level, Asset Level, and by Climate Hazard

Climate-related Scenario Analysis – Transition Risk

The TCFD identifies increased pricing of GHG emissions and increased operating costs (e.g. higher compliance costs) as examples of climate-related policy risks.

High Carbon Price Scenario	Moderate Carbon Price Scenario	Low Carbon Price Scenario
This scenario represents the implementation of polices that are considered sufficient to reduce GHG emission in line with the goal of limiting climate change to 2°C by 2100. This scenario is based on research by OECD and IEA (2017)	This scenario assumes that policies will be implemented to reduce greenhouse gas emissions and limit climate change to 2C in the long term, but with action delayed in the short term. This scenario draw on research by OECD and IEA along with assessments of the sufficiency of country Nationally Determined Contribution	This scenario represents the full implementation of country Nationally Determined Contributions under the Paris Agreement, based on research by OECD and IEA (2017). Prices in this scenario are considered likely to be insufficient to achieve the goals of the Paris Agreement

Climate-related Scenario Analysis – Policy Risk Exposure

Carbon pricing risk is dependent on both the total amount of GHG emission from a location and potential carbon price increases at the location.

a. Under the high carbon price (2°C) scenario, GGP could face a carbon risk of as much as $2.45 mil per annum by 2027, $3.00 mil per annum by 2030, and $4.52 mil per annum by 2040
b. This trend is driven by a combination of increasing carbon prices despite the annum carbon emission intensity reduction target that GGP has set for its Processed Pineapple facility
c. Scope 1 emission have an outsized contribution to carbon pricing risk for GGP, and this continues to be trend in all future years analyzed

Figure 1. Carbon Pricing Risk at Enterprise Level with GHG Reduction Goals Achieved

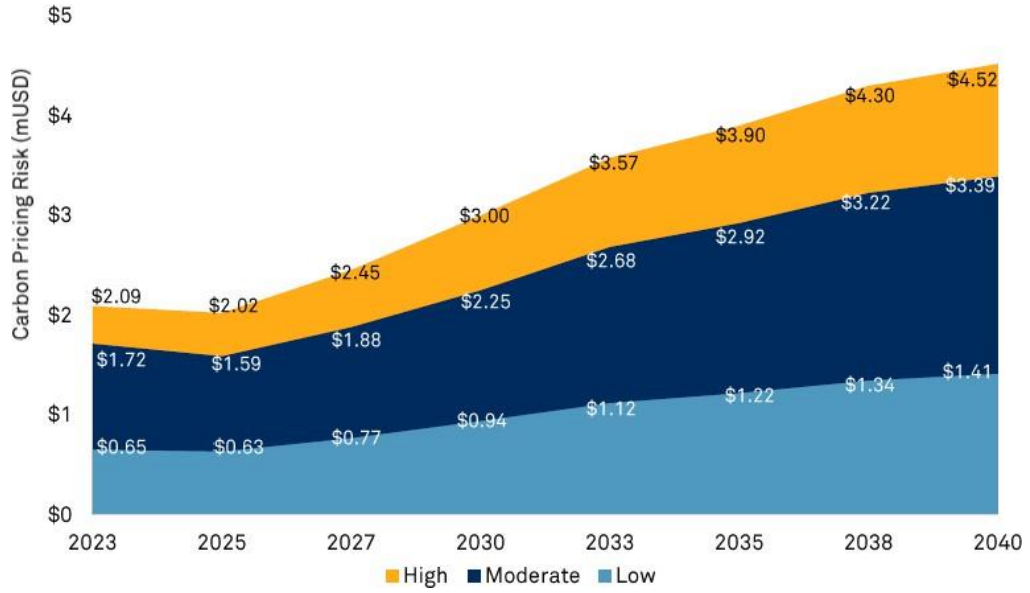
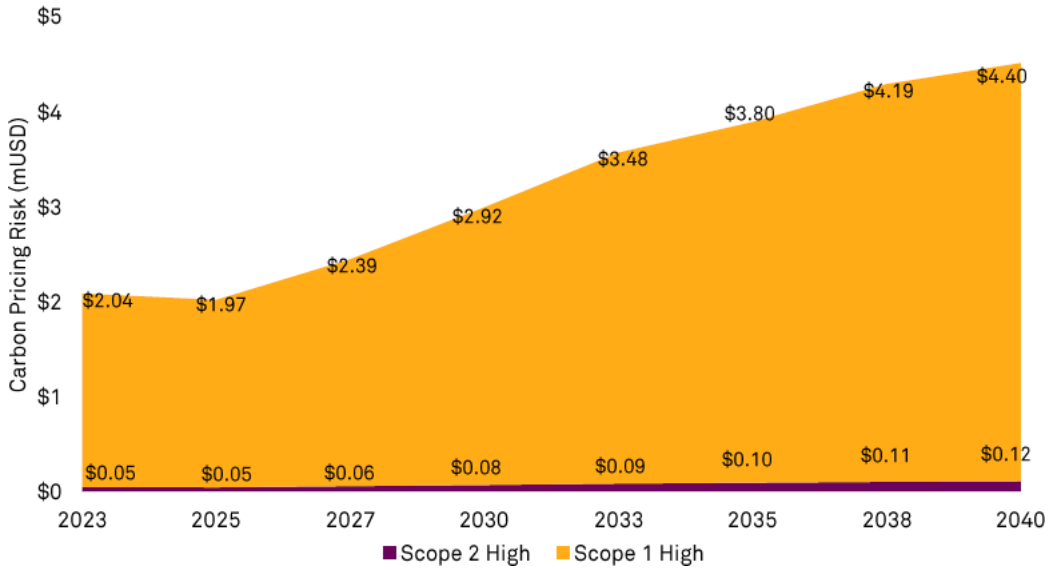


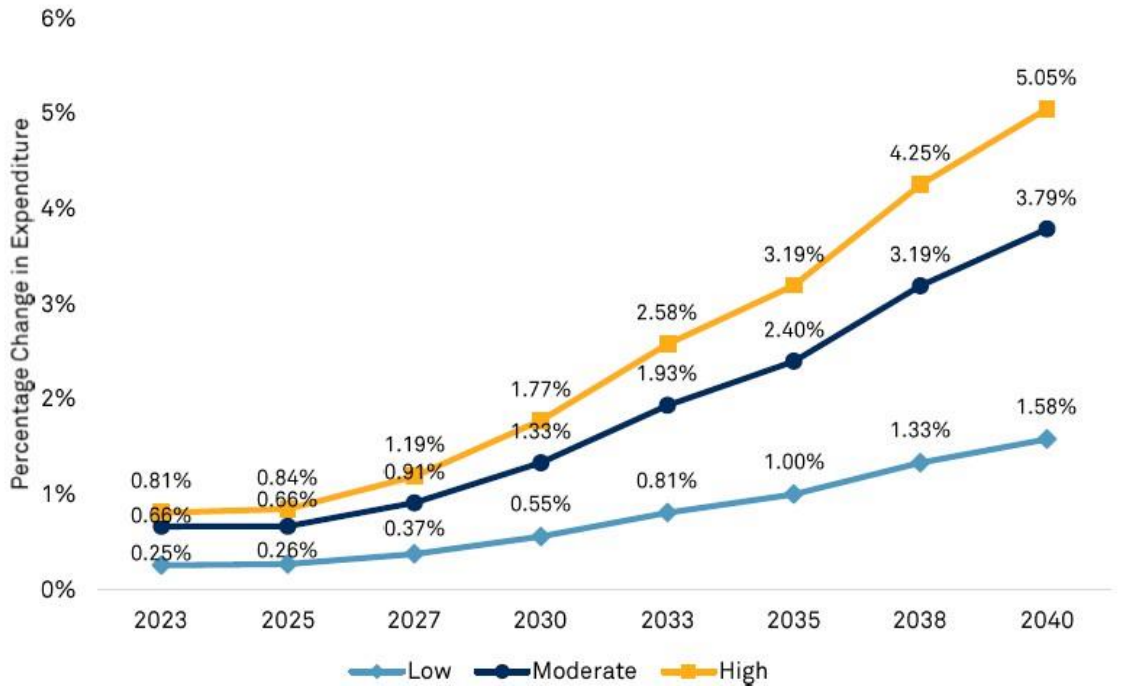
Figure 2. Carbon Pricing Risk Breakdown by Scope for High Price Scenario



Climate-related Scenario Analysis – Policy Risk Exposure

Under the high carbon price (2°C) scenario, the carbon pricing risk as a percentage of operating expenditure increases to 1.19% by 2027, 1.77% by 2030, and 5.05% by 2040 which could erode the operating profit margins by approximately 1% by 2040 compared to the baseline, based on GGP's revenue and OPEX assumptions.

Figure 3. Percentage change in OPEX at Enterprise Level



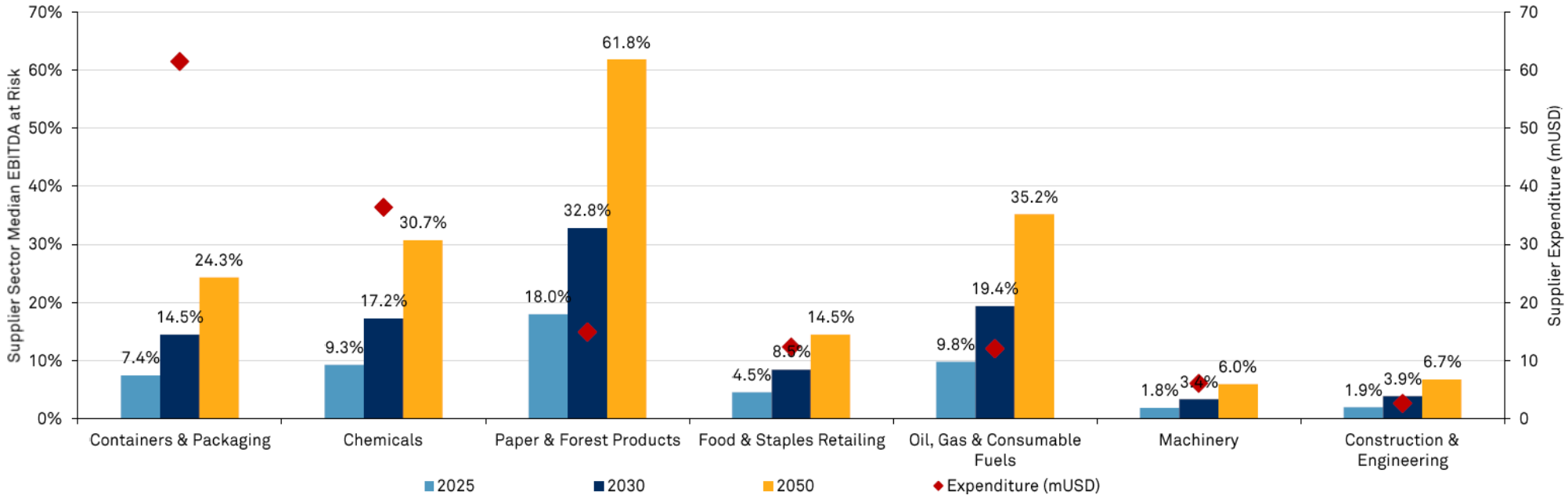
Transition Risk: Market Risk Exposure - Suppliers

The TCFD identifies changes in revenue mix and sources, resulting in decreased revenue, as an example of climate-related market risk. We have calculated the increased carbon pricing risk associated with the industries of GGP's suppliers and customers in future years under a 2°C scenario using a metric 'EBITDA at Risk'.

GGP's suppliers, if faced with increased carbon taxes may seek to pass these increase on via higher priced products.

This figure indicates the average % EBITDA at risk under a high 2C scenario for the GICS Industry name which PT GGP's suppliers operate.
Out of the 7 industries that GGP's suppliers are in, 5 of them have an EBITDA at Risk more than 10% by 2050. Two of these industries, namely Paper & Forest Products and Chemicals, are currently among GGP's top 3 industries by supplier expenditure.

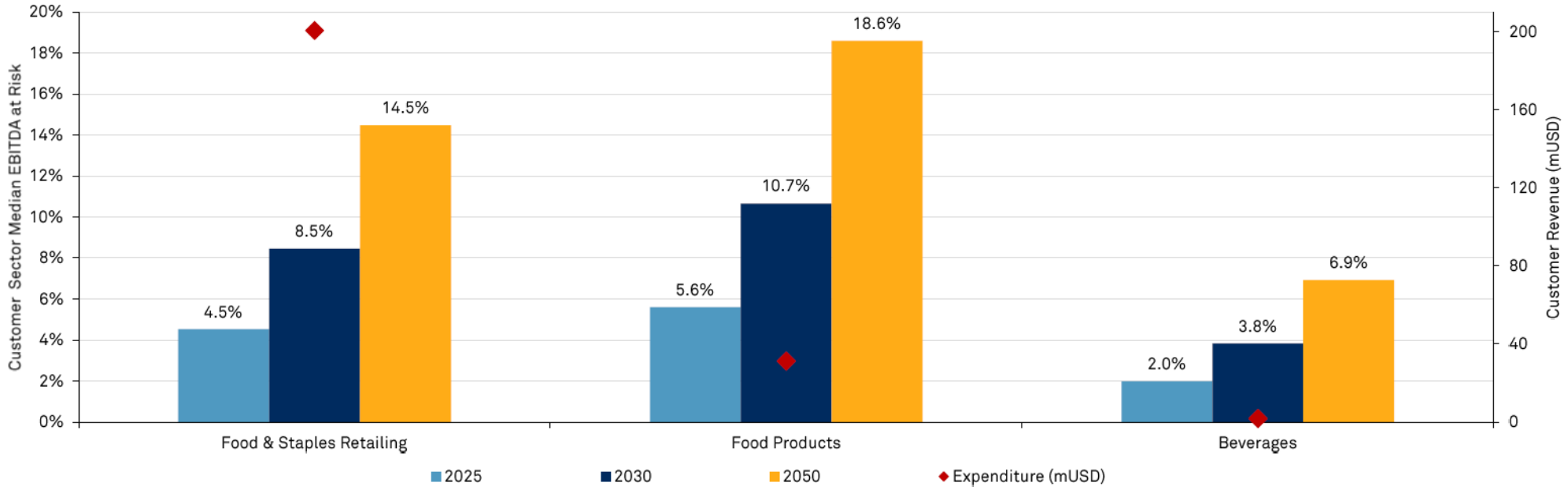
Figure 4. Average % EBITDA at Risk by GICS Name Under a 2C Scenario



Transition Risk: Market Risk Exposure - Customers

This figure indicates the average % EBITDA at risk under a high 2°C scenario for the GICS Industry name which GGP's suppliers operate.
Out of the 73 industries that GGP's customers are in, 2 of them have an EBITDA at Risk more than 10% by 2050, namely Food Products & Staples Retailing.

Figure 5. Average % EBITDA at Risk by GICS Name Under a 2C Scenario



Climate Change Implications and Risk Management

Summary of key transition risks and opportunities:

Transition Risk	Climate Drivers	Implication for GGP Business	Risk Mitigation Technique
Policy & Regulation	Carbon Tax	• Increasing cost in production for processed fruits and fresh fruits business	• Calculating internal carbon price based on the current regulation in Indonesia market opportunities • Utilizer renewable electricity generation in power plant unit
	Foreign trade restriction	• Limiting international market for GGP • Need more effort and competitive advantage to level up the sustainability level of the product to pass the import regulation	• Establishing clear climate strategy to address this issue • Mapping market expansion and assessing the requirements
Technology & Market	Technology Advancement	• Increasing the crop's yield for GGP's production	• Detailed assessment for technology and how it will fit with current and future operation
	Renewable Energy	• Market will be more concerned related to the lowering cost of green technology	• Finding collaboration and investment for green technology implementation in GGP
Reputational	Shareholder and Stakeholder Sentiment	• Reputation on stake that could affected GGP position in the market and funding access	• Disclosing GGP sustainability strategy through credible framework such as TCFD

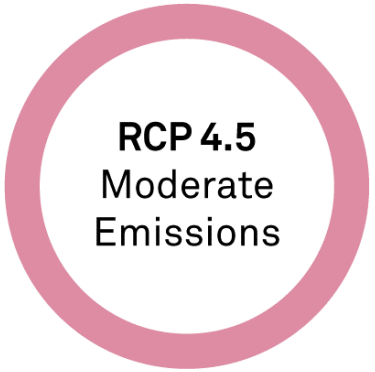
Physical Risk

Physical risks resulting from climate change can be acute or chronic. These risks may have financial impact for organizations emanating from damage to assets, interruption of operations, reduced revenue from decreased production capacity, and supply chain disruption.

Modeled Physical Hazards		Spatial Resolution	Coverage
	**Temperature Extremes:** Changes in frequency of occurrence of temperature extremes. A temperature extreme event is generally defined as the occurrence of the temperature variable above (or below) a threshold value near the upper (or lower) ends ('tails') of the range of observed values of the variable.	25 x 25 km	Global
	**Coastal Flooding:** Changes in frequency of coastal flooding of various magnitudes. Extreme coastal high water depends on average sea level, tides, and regional weather systems. Extreme coastal high water events are usually defined in terms of the higher percentiles (e.g. 90th to 99.9th) of a distribution of hourly values of observed sea level at a station for a given reference period.	100,000 Coastal Segments	Global
	**Drought:** Changes in the frequency of drought conditions contributing to a period of abnormally dry weather long enough to cause a serious hydrological imbalance.	25 x 25km	Global
	**Wildfire:** Changes in the annual probability of the 90th percentile wildfire conditions, as compared to the baseline period (1980-2000) at the asset's location. Sustainable 1 calculates a widely-used wildfire index driven by the localized climate model data.	25 x 25km	Global
	**Tropical Cyclone:** Changes in the location and intensity of hurricanes or tropical cyclones, the general term for a strong, cyclonic-scale disturbance that originates over tropical oceans. This is currently available for the eastern Atlantic basin.	25 x 25km	North Atlantic, North America, North-West Pacific, Asian-Pac
	**Water Stress:** Changes in the WRI Aqueduct water stress index from current values to future values out to the 2040s.	River Basin	Global
	**Fluvial Flooding:** The annual probability of a 100-year riverine flood, relative to the historical baseline of 1950-1999. This metric uses three climate variables and four topographic variables	25 x 25km	Global

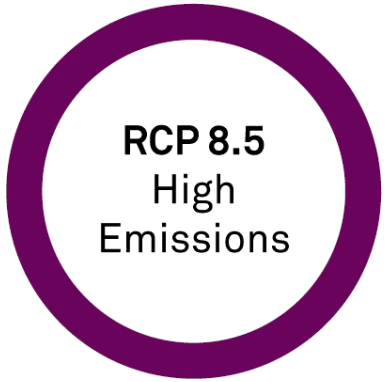
Physical Risk

We looks at climate scenarios RCP 4.5 and RCP 8.5 over decadal intervals from the 2020s to the 2090s



Moderate Emissions

Strong mitigation actions to reduce emissions to half of current levels by 2080. This scenario is more likely than not to result in warming in excess of 2 degrees Celsius by 2100



High Emissions

Continuation of business as usual with emission at current rates. This scenario is expected to result in warming in excess of 4 degrees Celsius by 2100

Physical Risk Financial Impact Metrics:

1

Relative risk (in %) is a function of hazard x vulnerability. Reported as a percent of asset value (calculated as Modelled Annual Average Loss/asset value), it provides a perspective on exposure and vulnerability across assets, independent of their value. It's possible for low-value assets to have high relative risk compared to more valuable assets

2

Absolute risk (in USD millions) is a function of hazard x vulnerability x asset value. This reflects the expected financial impacts in dollar terms. A very valuable asset with low hazard exposure and vulnerability could still hold substantial risk due to the high asset value.

Physical Risk

The financial impact caused by climate change are measured in a metric known as 'Modelled Average Annual Loss (MAAL)', which reports financial losses on an annual basis. It is the sum of climate-related expenses, decreased revenue, and/or business interruption arising from climate hazards affecting the assets of the company. Its impact function begins with an analysis of the hazards facing specific assets. Each asset type's vulnerability is characterized based on the specific ways ("impact pathways") in which a particular asset type is impacted by a given climate hazard. Impact functions, comprised of impact pathways, are assigned to mode the risk based on the hazard and vulnerability.

In 2030s, GGP has a Low level of physical risk in both scenarios, with an absolute risk of $2.1m and $2.4m in the RCP 4.5 and RCP 8.5 scenarios respectively. This translates into a relative risk of 2.1% and 2.4% respectively.

Temperature Extremes and Water Stress are the two major risks, accounting for 50% and 40% of the total financial impact in the 2030s, respectively. The percentage of GGP's asset value that is at risk by climate hazard is shown in Figure 7. The vast majority of the total value of the assets are considered to have a low level of risk to the hazards assessed.

Figure 6. Modelled Average Annual Loss by Physical Risk Hazard

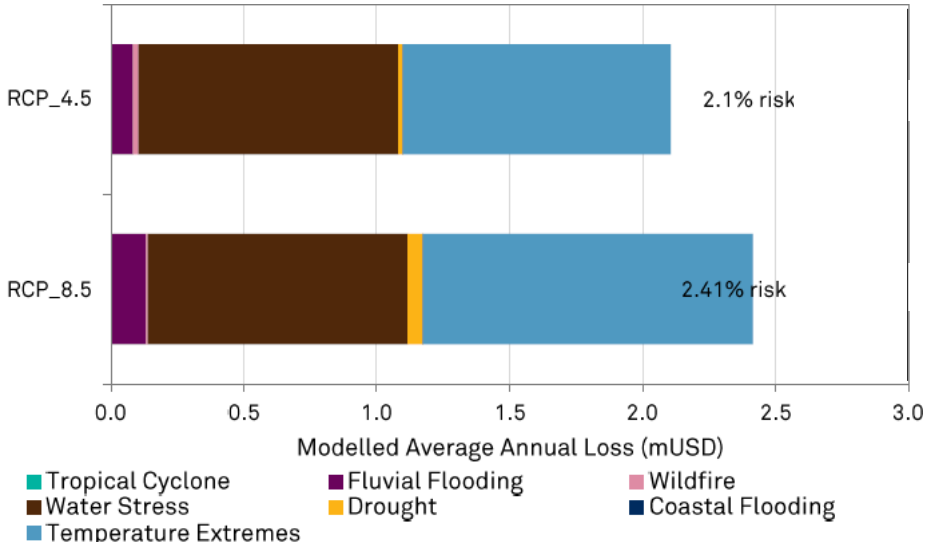


Figure 7. Percentage of total asset value by physical risk classification (RCP 4.5)

Climate Hazard	High	Moderate	Low
Tropical Cyclone	0%	0%	100%
Drought	0%	0%	100%
Wildfire	0%	0%	100%
Temperature Extremes	0%	0%	100%
Water Stress	0%	0%	100%
Fluvial Flooding	0%	0%	100%
Coastal Flooding	0%	0%	100%

Risk exposure classification thresholds have been defined as the following:
High > 15%, 15% > Moderate > 10%, Low < 10%

Climate Change Implications and Risk Management

Below are the top 3 climate hazards measured by the absolute risk. Overall **Temperature Extremes** present the highest risk to asset value in 2030. The risks from Water Stress and Fluvial Flooding follow, though the scale of the impact is quite small compared to Temperature Extreme

Hazard Type	Key Implications	Risk Management Techniques Considered
Water Stress	• Impact on operations • Impact on water availability for irrigation • Water stress may impact the fatality and growth of crops • Community risk during water stress periods	• Conduct water risk assessment • Explore opportunities for rainwater harvesting • Adopt water efficiency technology and promote water consumption efficiency • Explore opportunities to reuse or recycle wastewater within the plant/operations • Developing strategic water reservoirs to monitor water stock • Conserve water resource within the operations
Temperature Extreme	• Increase irrigation water demand due to high evapotranspiration • Impact on crop yield • Potential discomfort due to heat stress • Reduce working efficiency of employees • Overheating, reduce efficiency, and breakdown of equipment	• Consider extreme heat conditions in the emergency response plan • Provide training to employees to identify symptoms of heat stress and provide first aid • Evaluate existing temperature range of tools and equipment against projected extreme temperatures • Conserve water resource with cover crops to prevent high evaporation • Explore effective irrigation management system
Fluvial Flooding	• Erosion of top soil • Degradation of soil quality due to waterlogging • Impact on crop yield • Impact on operations and employees • Safety of employees • Temporary disruption access due to waterlogging of access roads	• Flood risk assessment to identify areas prone to flooding for all key assets • Implement plantation design which minimize flooding/waterlogging • Consider flood hazards in the emergency response plan • Prepare an emergency response that takes the safety of GGP field staff into account

Strategy

a. Target 2030 – Middle-Term

GGP has a target of gradually reducing GHG emissions to carry out sustainable production activities. In the short to medium term, emission intensity for all scopes is targeted to be reduced by 50% in 2030 from the 2021 baseline. The emission reduction plan is carried out by transitioning to renewable energy sources, saving energy in all production and operational sectors, as well as implementing an energy management system.

b. Target 2050 – Long-Term

GGP has the main goal of achieving Zero Emissions or NZE by 2050. GGP has increased the use of renewable energy sources through the development of in-house/internal energy-based technology. Carrying out carbon offset activities to increase carbon reduction capacity. Carrying out supply chain evaluations by encouraging low emission practices from products/distribution to suppliers and selecting suppliers who are committed to reducing GHG emissions.

Metrics

Metrics

a. GGP demonstrates its commitment to achieving emissions reduction through the establishment of short-term and long-term targets outlined in the roadmap towards NZE. The targets set within the energy transition program extend beyond technical aspects and encompass legal, financial, human resources, and information technology dimensions. Collaborative efforts across GGP's various business lines are being undertaken to accelerate the achievement of the NZE by 2050.

b. GGP employs relevant indicators and parameters as metrics to assess climate-related risks and opportunities. These metrics are transparently disclosed through sustainability reports. The disclosed metrics encompass:

Carbon Emission

Carbon emissions measurement serves as a fundamental metric for GGP to gauge the quantity of greenhouse gas emissions originating from its operational activities, including both direct emission (Scope 1) and indirect (Scope 2 and 3) emissions. Through monitoring greenhouse gas emissions and the realization of greenhouse gas emission reductions, GGP can effectively identify climate-related risks and identify opportunities to reduce their impact.

Scope	Category	Activity Type	UoM	FY 2024 Total CO2e (MT)
Scope 1	1.1	Stationary combustion	Ton CO_2e	259759
	1.2	Mobile combustion	Ton CO_2e	27236
	1.3	Industrial Processes	Ton CO_2e	
	1.4	Fugitive emissions	Ton CO_2e	69362
	1.5	Forestry and other Land Use, FOLU	Ton CO_2e	-37884
	Scope 1 – Total		Ton CO_2e	318473
Scope 2	2.1	Purchased electricity	Ton CO_2e	13120
	2.2	Purchased heat and steam	Ton CO_2e	
	Scope 2 – Total		Ton CO_2e	13120
Scope 3	3.1	Upstream transportation and distribution for goods	Ton CO_2e	8127
	4.1	Downstream transportation and distribution for goods	Ton CO_2e	114104
	Scope 3 – Total		Ton CO_2e	122232
Scope 1 + 2 + 3 = Total			Ton CO_2e	453826

Emission Reduction Roadmap

PT Great Giant Pineapple's net zero emission roadmap plan by 2050

Initiatives	2022	2023	2024	2025	2026	2027	2028	2029	2030	2040	2050
Scope 1		1. Energy Management 2. Sustainability Award	1. Energy Management 2. Sustainability Award 3. Compound Fertilizer 4. ESCO 5. Biogas Expansion 6. Urease Inhibitor	1. Energy Management 2. Sustainability Award 3. Compound Fertilizer 4. Minimum Tillage 5. Urease Inhibitor	1. Energy Management 2. Sustainability Award 3. Compound Fertilizer 4. Minimum Tillage 5. Urease Inhibitor	1. Energy Management 2. Sustainability Award 3. Compound Fertilizer 4. Minimum Tillage 5. Urease Inhibitor	1. Energy Management 2. Sustainability Award 3. Compound Fertilizer 4. Minimum Tillage 5. Urease Inhibitor 6. Natural Gas	1. Energy Management 2. Sustainability Award 3. Compound Fertilizer 4. Minimum Tillage 5. Urease Inhibitor	1. Energy Management 2. Sustainability Award 3. Compound Fertilizer 4. Minimum Tillage 5. Urease Inhibitor	1. Carbon Offsetting	1. Carbon Offsetting
Scope 2			1. Solar Panel (350 kWp)	1. Solar Panel (650 kWp)	1. Solar Panel (1 MW)						
Scope 3				1. Review Tinplate sourcing							
Emission Reduction (TCO_2e)											
Total Emission Reduction		**7,506**	**189,640**	**196,838**	**204,043**	**220,001**	**321,305**	**327,237**	**331,247**	**395,972**	**590,145**
Emission (TCO_2e)											
Total Emission	**590,145**	**582,639**	**400,505**	**393,307**	**386,102**	**370,144**	**268,840**	**262,908**	**258,898**	**194,173**	**0**

PT Great Giant Pineapple

Office
Sequis Tower Level 39-40 Jl. Jend Sudirman
Kav.71 Jakarta 12190, Indonesia

Plantation & Factory
Terbanggi Besar Km. 77, Lampung Tengah
34165, Indonesia