

FRONTKEN

Environment - Climate change

Frontken Corporation Sustainability
Development Report_FY2022

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Our future depends on what we do today

10-10-2022



ENVIRONMENT – CLIMATE CHANGE

The Global Risks Report 2022, for the first time, points to "Climate Action Failure" as the most severe risk the world will be facing in the next ten years. We care about the impacts of climate on company operations and the potential issues that it may present to society.

The greenhouse effect occurs naturally when heat from the Earth's surface is absorbed by greenhouse gases (GHGs) such as carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulphur hexafluoride (SF₆), hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs).

Greenhouse gases are naturally present in the air, and allow the Earth's atmosphere to be warm enough to support life. However, human activities such as burning of fossil fuels for energy and industrial production, and clearing of forests to raise livestock, increases the amount of GHGs in the atmosphere. These additional GHGs trap even more heat in the atmosphere, making the Earth warmer. Global warming leads to long-term climate change.

Scientists worry that the accumulation of these gases in the atmosphere has changed and will continue to change the climate. The risk of climate change depends on the physical and socioeconomic implications of a changing climate. Potential climate change risks have several effects including more severe weather patterns; damage to human-built environments, chaotic ecosystems, damage biodiversity; changes in patterns of drought and flood, with less potable water; inundation of coastal areas from rising sea levels; and more deaths from heat waves, storms, and contaminated water, and increased incidence of tropical diseases.

Scientists reach this conclusion by looking at two trends. First, global surface temperature data show that Earth has warmed 0.5 °C (1 °F) over the past 100 years. At the same time, atmospheric concentrations of GHGs such as CO₂ have increased by about 30% over the past 200 years.

The threat of climate change is being addressed globally by the United Nations Framework Convention on Climate Change (UNFCCC): the long-term objective is 'to stabilise atmospheric greenhouse gas concentrations at a level that would prevent dangerous anthropogenic interference with the climate system'.

According to the Intergovernmental Panel on Climate Change (IPCC), to keep global warming below 2 °C, emissions of carbon dioxide (CO₂) and other greenhouse gases (GHGs) must be halved by 2050 (compared with 1990 levels).

Our climate change management focuses internally on strengthening own capabilities in both mitigation and adaptation capabilities, and externally on both supply chain carbon reduction, and providing customers with low carbon services to form our major management strategies.

OUR CLIMATE CHANGE MANAGEMENT

Frontken Group will in accordance with our environmental policy and measures committed to:

- (a) Reduce the energy used in our operations; including improved energy efficiency in our buildings, facilities, equipment and tooling;
- (b) Implement alternative or renewable energy technologies such as solar panels, where practical to provide additional sustainable energy for our facilities;
- (c) Engage with all the stakeholders including the supply chain to combat climate change;
- (d) Work with suppliers to reduce the carbon embedded in all consumables such as chemicals, packaging materials, the carbon footprint of our equipment and supply chain suppliers to minimise their carbon impacts
- (e) Set targets to reduce our carbon emissions including scope 1, scope 2 and scope 3.
- (f) Report our greenhouse gas emissions, targets, results and activities openly and in accordance with the Greenhouse Gas Protocol.



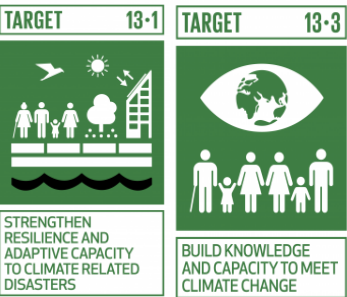
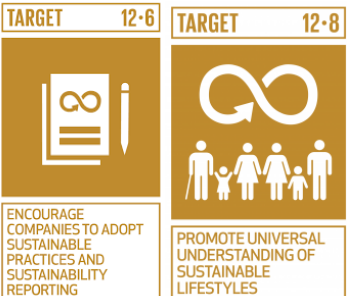
We pledged to reduce our Emissions Intensity (EI) – the amount of GHGs emitted per dollar revenue – by 50 per cent by 2050, and to stabilise emissions with the aim of peaking around 2050; and to achieve Net Zero Emissions by 2060.

We advocate and act upon the principles of operational transparency and respects shareholder rights. We believe that the basis for successful corporate governance is a sound and effective Board of Directors. We also Linked shareholders' interests and ESG (including climate change management) achievements to Frontken corporate executives' compensation by introducing the employee restricted stock awards (RSAs) issuance plan approved by the Board and the Shareholders.

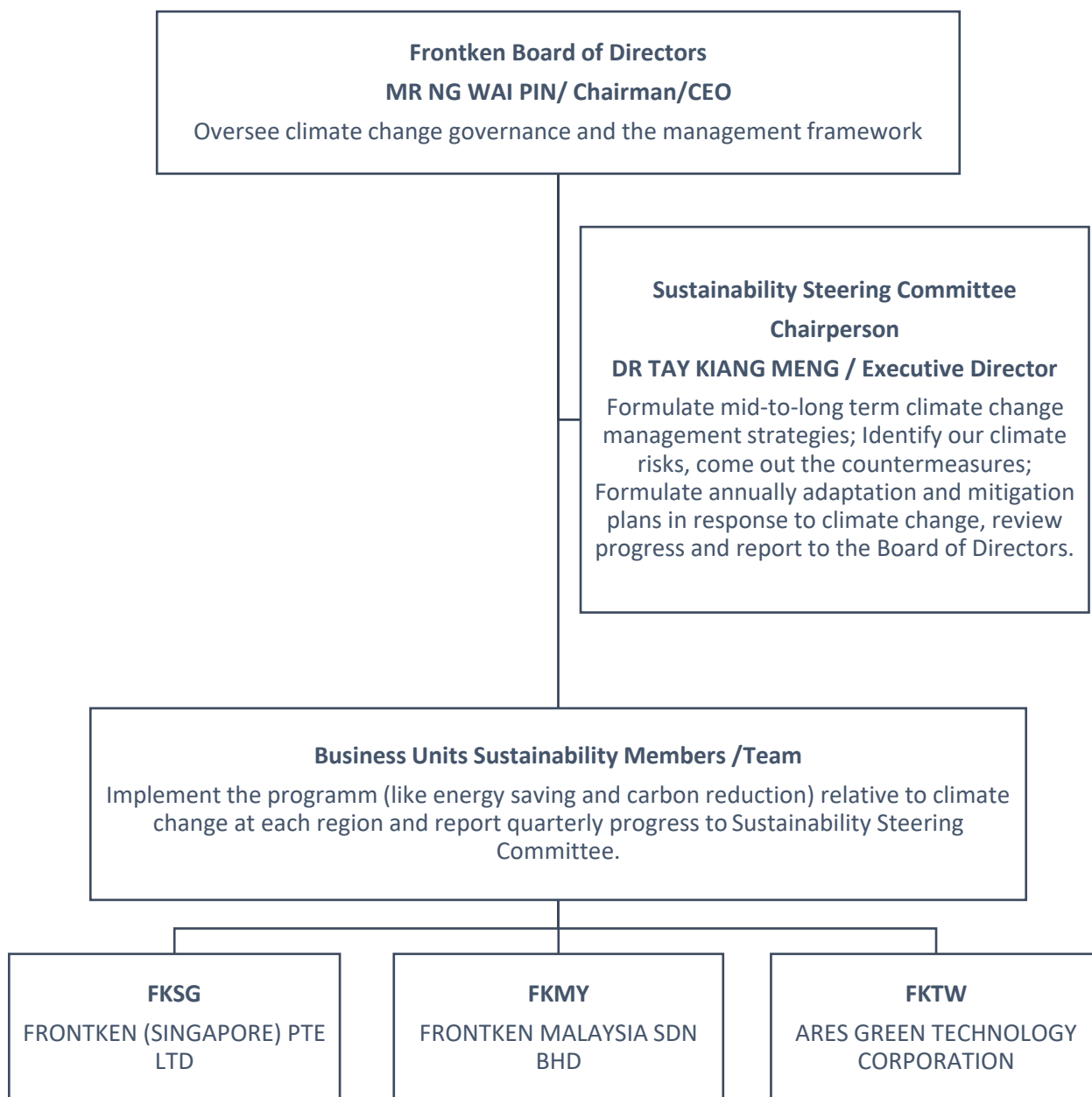
We will continuously introduce specific initiatives to significantly reduce our gas emissions. Our Target is to continuously reduce our carbon footprint and our impact on climate change by decreasing our GHG emissions and improving energy efficiency.

- (a) Short Term Goal by 2025 ; - Reduce 10% our Emissions Intensity (EI) – the amount of GHGs emitted per dollar revenue. (Baseline data FY2020).
- (b) Medium Term Goal by 2035; - Reduce 25% our Emissions Intensity (EI) – the amount of GHGs emitted per dollar revenue. (Baseline data FY2020).
- (c) Long Term Goal by 2050; - Reduce 50% our Emissions Intensity (EI) – the amount of GHGs emitted per dollar revenue. (Baseline data FY2020).

Contributing to the Sustainable Development Goals

 <p>TARGET 7-1</p> <p>UNIVERSAL ACCESS TO MODERN ENERGY</p>	<p>7.1 = ensure universal access to affordable, reliable and modern energy services.</p>
 <p>TARGET 8-4</p> <p>IMPROVE RESOURCE EFFICIENCY IN CONSUMPTION AND PRODUCTION</p>	<p>8.4 = Improve progressively, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead.</p>
 <p>TARGET 13-1</p> <p>TARGET 13-3</p> <p>STRENGTHEN RESILIENCE AND ADAPTIVE CAPACITY TO CLIMATE RELATED DISASTERS</p> <p>BUILD KNOWLEDGE AND CAPACITY TO MEET CLIMATE CHANGE</p>	<p>13.1 = Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.</p> <p>13.3 = Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.</p>
 <p>TARGET 12-6</p> <p>TARGET 12-8</p> <p>ENCOURAGE COMPANIES TO ADOPT SUSTAINABLE PRACTICES AND SUSTAINABILITY REPORTING</p> <p>PROMOTE UNIVERSAL UNDERSTANDING OF SUSTAINABLE LIFESTYLES</p>	<p>12.6 = Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle</p> <p>12.8 = ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature</p>

FCB CLIMATE CHANGE MANAGEMENT FRAMEWORK

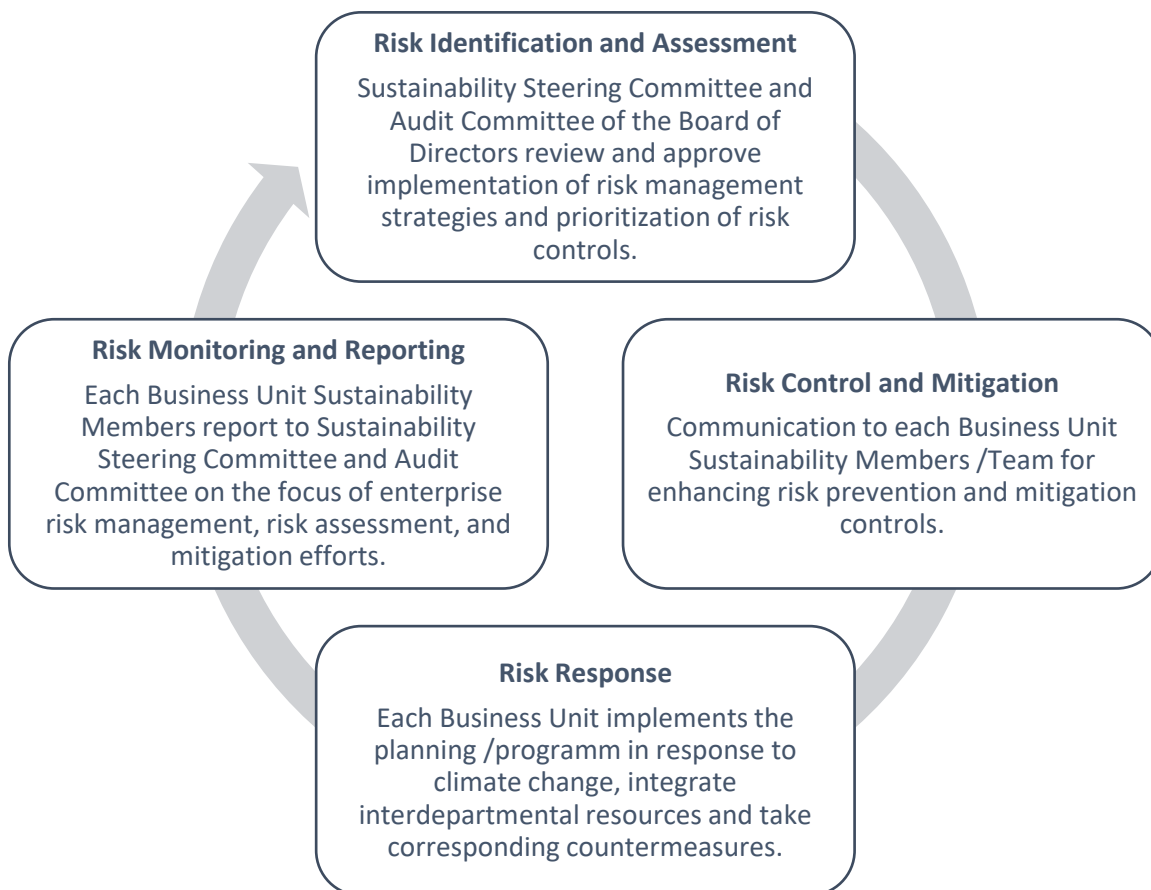


The Board of Directors plays the role of overseeing and providing guidance to the Company's comprehensive climate change and sustainable management strategies. At Frontken, the Board is responsible for overseeing climate change governance and the management framework. The Sustainability Steering Committee is our top organization in climate change management. Frontken Executive Director – Dr Tay Kiang Meng is responsible to Sustainability Steering Committee for formulating mid-to-long term climate change management strategies; identifying our climate risks, formulating annually adaptation and mitigation plans in response to climate change, management the focuses, and countermeasures; integrating interdepartmental resources for climate action; reviewing progress, discussing future plans, and reporting to the Board of Directors.

TOTAL RISK MANAGEMENT

To fulfil long-term sustainability responsibilities, Frontken has developed an Enterprise Risk Management (ERM) Program to integrate and manage potential risks that may affect operational and profitability strategies, operations, finances, and hazards (including climate change, utility supply, earthquake, fire, chemical spill, etc.). We also perform a quantitative risk assessment according to the possibility of climate risks and severity of impact on operations to identify risk levels and major climate risk events. The Business Units Sustainability Members /Team report results of the climate risk/ opportunities and financial impact assessment to the Sustainability Steering Committee Chairperson annually to make prioritize and adopt risk control measures, crisis management, and business continuity management to help strengthen our resilience to climate risks.

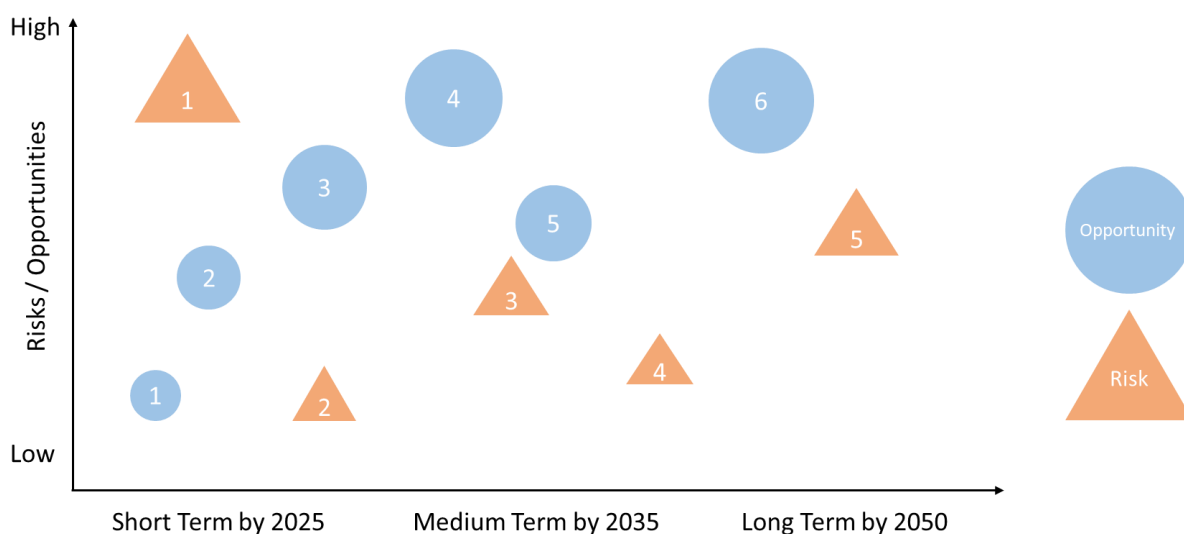
OUR SPECIFIC CLIMATE-RELATED RISK MANAGEMENT PROCESS



IDENTIFICATION AND ASSESSMENT OF CLIMATE RISKS AND OPPORTUNITIES

In compliance with the TCFD framework, Frontken has identified and assessed climate change risks and response measures across the corporation. We hold an internal meeting every six months to fully discuss the risks and opportunities of climate change and review our existing response plans. We also attend various lectures and forums/ workshops related to climate change every year to enrich our understanding on the transition risks, physical risks, and opportunities posed by climate change to our value chain.

CLIMATE RISKS AND OPPORTUNITIES MATRIX



- Opportunities:**
1. Improve plant energy efficiency
 2. Develop alternative or renewable energy technologies
 3. Drive low carbon green production
 4. Improve the reputation of the enterprise
 5. Participation in carbon trading market
 6. Increase resilience against natural disasters

- Risks (Transition /Physical Risks):**
1. GHG emissions restriction and carbon taxes/carbon fee
 2. Impact on company reputation
 3. Extreme weather caused by climate change, such as flood and drought
 4. Higher Natural Disaster Insurance Premium
 5. Rising Temperature

POTENTIAL FINANCIAL IMPACT

The potential financial impacts of climate change are categorized into transition risks, physical risks, regulatory risks, and climate opportunities. Transition risks are comprised of major carbon reduction costs from Frontken pathways to achieve Net Zero Emissions by 2060. For example, developing energy-saving and carbon reduction technologies, expenses for application projects, paying a premium for green energy, and purchasing carbon credits. Regulatory risks include risks from estimating potential future carbon fees according to local government's policies. Physical risks primarily consist of growing electricity costs from air conditioner use because of slowly rising global temperatures and the cost of responding to climate changes and disasters.

FINANCIAL IMPACT ANALYSIS OF CLIMATE CHANGE

<i>item</i>	<i>Climate Risks</i>	<i>Potential Financial Impact</i>	<i>Climate Opportunities</i>	<i>Potential Financial Impact</i>
<i>Transition Risks</i>	GHG emissions restriction and carbon taxes /carbon fee	Restriction on our production capacity expansion; Increase renewable energy and carbon credit costs; Increase in operation costs.	Select alternative or renewable energy technologies; Participation in Carbon Trading Market.	Satisfy customer demands for low-carbon production and realize the win-win goal; Early purchases of renewable energy may successfully increase operation capacity; Stock up on required carbon credits for future emissions.
	Impact on company reputation	Damage to company image when unable to meet stakeholder expectations.	Receive rewards for offsetting carbon	Improving the reputation of the enterprise can greatly increase the company's revenue and profits.
<i>Physical Risks</i>	Extreme weather caused by climate change, such as flood and drought.	Production affected (including supply chain), resulting in financial losses and a decrease in revenue.	Increase resilience against natural disasters.	Strengthen climate resilience and lower the risk of operation interruption and potential losses.
	Higher Natural Disaster Insurance Premium	Increase in operation costs.	Achieve our financial health and organizational health.	Take precautions to reduce financial risks.
	Rising Temperature	Increase in energy consumption, carbon emissions and production run cost.	Increase resilience against climate change and drive low carbon green production.	Save energy and reduce utilities costs; Greatly mitigate the negative impacts of climate change.

Specific actions:	Strongly support the initiatives of the international organizations on climate change, and abide by public policies and local laws and regulations;
	Improve energy efficiency to reduce the energy used in our operations;
	Work with related associations and government agencies to implement green energy technologies such as solar panels and purchase green energy;
	Engage with all the stakeholders including the supply chain to minimise the carbon impacts;
	Continue carrying out GHG reduction actions and set targets to reduce our carbon emissions;
	Continue investing in R&D for sustainable innovation;
	Insist on responsible green production and green innovations and use transparent disclosure to enhance the company's green reputation;
	Each business unit evaluates the risk level for drought and flood every year and come out risk mitigation measures accordingly;
	Implement FCB business continuity plan and update it regularly.

SCENARIO ANALYSIS

We have evaluated the impact of various GHG emission controls on our operations and the supply chain according to the worst-case scenario possible for transition and physical risks. We have taken the outcomes into consideration when determining the resiliency of strategies. In addition, we have also included potential growth in carbon emissions from business growth and new facilities expansion as well as existing carbon reduction actions into evaluations to analyse the potential financial impact of climate risks.

CLIMATE SCENARIO 1: TRANSITION RISKS – NET ZERO EMISSIONS

Assessment	<ul style="list-style-type: none"> Estimated costs for internal carbon reduction and purchasing green energy and carbon credits as company strives for Net Zero Emissions by 2060.
Assumption	<ul style="list-style-type: none"> Aggressive control of GHG emissions will allow the world to control rising temperatures to below 1.5°C by the end of the century and achieve Net Zero Emissions by 2060.
Risk Quantification	<ul style="list-style-type: none"> Increased costs in 2060 will account for 6~8% of annual revenue.
Impact to Decision Making	<ul style="list-style-type: none"> Internal carbon reduction measure; purchase renewable energy and carbon credits; collaborate with other parties for carbon offset; carbon reduction in the supply chain.

CLIMATE SCENARIO 2: PHYSICAL RISKS – DROUGHTS

Assessment	<ul style="list-style-type: none"> • Estimated frequency of future droughts, costs of maintaining alternative water sources, and potential operating losses to Frontken group.
Assumption	<ul style="list-style-type: none"> • GHG emissions continuing as usual will lead to rising temperatures of 3.2°C.
Risk Quantification	<ul style="list-style-type: none"> • Frontken group has estimated droughts to occur once every ten years and to have an impact of less than 2% of the average annual revenue.
Impact to Decision Making	<ul style="list-style-type: none"> • Internal water conservation; use of reclaimed water; alternative water sources.

Frontken has established climate indicators for GHG, energy use, and water resources to track management outcomes. As a leading provider of support services to the semiconductor industry, surface treatment and mechanical engineering solutions, serving a wide-range of industries in Singapore, Malaysia, Taiwan and other countries/regions, we are deeply aware of our responsibilities toward local and global environments. We strive to realize the sustainable development principle of common good for the ecosystem and continue to promote the four management initiatives of "Mitigation, Adaptation, Carbon Reduction in the Supply Chain, and Low-Carbon Services".



Our future depends on what we do today

APPENDIX A - DATA

ENVIRONMENT			PERFORMANCE DATA	
SECTION	TARGET INDICATORS DATA	UNIT OF MEASURE	FY2020	FY2021
GHG EMISSION SCOPE 1,2 and 3	Scope 1 Direct Emissions from company facilities, fleets, etc; (tCO2e)	tCO2e	1,332	1,430
	Scope 2 : Indirect Emissions from electricity purchased and used by the company; (tCO2e)	tCO2e	10,188	10,375
	Scope 3 : Other Indirect Emissions from company activities via entities beyond its ownership or control (procurement, shipping, distribution, waste, etc.), as well as business travel and employee commuting; (tCO2e)	tCO2e	36,789	32,230
ENERGY DATA	(i) Total energy consumption data.	Mwh	19,958	21,288
	(ii) Internal carbon price : per tonne of greenhouse gas emissions (tCO2e).	USD	15	20
SCOPE 1 : GHG EMISSIONS INTENSITY (EI) PER REVENUE IN MILLION RM	(a) Short Term Goal by 2025 ; - Reduce 10% our Emissions Intensity (EI) – the amount of GHGs emitted per dollar revenue. (Baseline data FY2020). (kgCO2e per revenue in Million RM)	kgCO2e per revenue in Million	3,620	3,176
	(b) Medium Term Goal by 2035; - Reduce 25% our Emissions Intensity (EI) – the amount of GHGs emitted per dollar revenue in million RM. (Baseline data FY2020).	kgCO2e per revenue in Million	NA_TBD	NA_TBD
	(c) Long Term Goal by 2050; - Reduce 50% our Emissions Intensity (EI) – the amount of GHGs emitted per dollar revenue in million RM. (Baseline data FY2020).	kgCO2e per revenue in Million	NA_TBD	NA_TBD
SCOPE 2 : GHG EMISSIONS INTENSITY (EI) PER UNIT PRODUCTION	(a) Short Term Goal by 2025 ; - Reduce 10% our greenhouse gas (GHG) emissions per unit of production. (Energy consumption and GHG emissions baseline data FY2020). (kgCO2e per part)	kgCO2e per part	5.18	4.50
	(b) Medium Term Goal by 2035; - Reduce 20% our greenhouse gas (GHG) emissions per unit of production. (Energy consumption and GHG emissions baseline data FY2020).	kgCO2e per part	NA_TBD	NA_TBD
	(c) Long Term Goal by 2050; - Reduce 50% our greenhouse gas (GHG) emissions per unit of production. (Energy consumption and GHG emissions baseline data FY2020).	kgCO2e per part	NA_TBD	NA_TBD

ENVIRONMENT			PERFORMANCE DATA	
SECTION	TARGET INDICATORS DATA	UNIT OF MEASURE	FY2020	FY2021
SCOPE 3 GHG EMISSION DATA	Purchased goods and services	tCO2e	7,828	9,689
	Capital goods	tCO2e	20,962	17,697
	Fuel-and-energy-related activities (not included in scope 1 or 2)	tCO2e	2,348	2,432
	Upstream transportation and distribution	tCO2e	26	0
	Waste generated in operations	tCO2e	4,870	1,353
	Business travel	tCO2e	186	43
	Employee commuting	tCO2e	211	230
	Upstream leased assets	tCO2e	NA	NA
	Investments	tCO2e	NA	NA
	Downstream transportation and distribution	tCO2e	356	785
	Processing of sold products	tCO2e	NA	NA
	Use of sold products	tCO2e	NA	NA
	End of life treatment of sold products	tCO2e	NA	NA
	Downstream leased assets	tCO2e	NA	NA
	Franchises	tCO2e	NA	NA
	Other (upstream)	tCO2e	NA	NA
	Other (downstream)	tCO2e	NA	NA
	Total/no breakdown	tCO2e		36,789

ENVIRONMENT			PERFORMANCE DATA	
SECTION	TARGET INDICATORS DATA	UNIT OF MEASURE	FY2020	FY2021
WATER CONSERVATION	(a) Short Term Goal by 2025 ; - Reduce 10% our water consumption per unit of production. (Water consumption baseline data FY2019). (Cubic meter per part)	cum per part	0.12	0.11
	(b) Medium Term Goal by 2035; - Reduce 20% our water consumption per unit of production. (Water consumption baseline data FY2019).	cum per part	NA_TBD	NA_TBD
	(c) Long Term Goal by 2050; - Reduce 30% our water consumption per unit of production. (Water consumption baseline data FY2019).	cum per part	NA_TBD	NA_TBD
WATER DATA	(i) Disclosure of the number of incidents of non-compliance with water quality/quantity permits, standards and regulations	number of incidents	0	0
	(ii) Water management plan (including water recycling system)	Kilo Tonnes	49	68
	(iii) Water-stressed/scarce regions.	number	0	0
	(iv) Total water (effluent) discharge from facilities.	Cubic M	244,350	264,884
TOTAL WATER DISCHARGE DATA DISCLOSED BY DESTINATION	Ocean total discharge	Cubic M	0	0
	Surface Water total discharge	Cubic M	0	0
	Subsurface / well total discharge	Cubic M	0	0
	Off-site water treatment total discharge	Cubic M	244,350	264,884
	Beneficial / other use total discharge	Cubic M	0	0
	Total discharge	Cubic M	244,350	264,884
TOTAL WATER WITHDRAWAL DATA DISCLOSED BY SOURCE	Surface water from rivers, lakes, natural ponds	Cubic M	0	0
	Groundwater from wells, boreholes	Cubic M	0	0
	Used quarry water collected in the quarry	Cubic M	0	0
	Municipal potable water	Cubic M	244,350	264,884
	External wastewater	Cubic M	0	0
	Harvested rainwater	Cubic M	0	0
	Sea water, water extracted from the sea or the ocean	Cubic M	0	0
	Total Water Withdrawal	Cubic M	244,350	264,884

ENVIRONMENT			PERFORMANCE DATA	
SECTION	TARGET INDICATORS DATA	UNIT OF MEASURE	FY2020	FY2021
WASTE REDUCTION	(a) Short Term Goal by 2025 ; - Reduce 10% our waste generated in kg per unit of production. (Waste generated baseline data FY2019). (kg per part)	kg per part	0.4	0.4
	(b) Medium Term Goal by 2035; - Reduce 20% our waste generated in kg per unit of production. (Waste generated baseline data FY2019).	kg per part	NA_TBD	NA_TBD
	(c) Long Term Goal by 2050; - Reduce 50% our waste generated in kg per unit of production. (Waste generated baseline data FY2019).	kg per part	NA_TBD	NA_TBD
WASTE DATA	(i) Total waste generated and recycled.	Tonnes	49,161	67,847
	(ii) Total hazardous waste generated	Tonnes	631	705
	(iii) Total non-recycled waste generated	Tonnes	722	971
CHEMICAL MANAGEMENT	(a) Short Term Goal by 2025 ; - Increase usage of environmental friendly chemical in kg per unit of production by 10%. (Friendly chemical use baseline data FY2019=0.97). (kg per part)	kg per part	1.23	1.49
	(a) Short Term Goal by 2025 ; - committed compliance to proper handling, usage, storage and disposal of used chemicals in an environmental friendly manner.	compliance	100%	100%
	(b) Medium Term Goal by 2035; - Increase usage of environmental friendly chemical in kg per unit of production by 30%. (Friendly chemical use baseline data FY2019). (kg per part)	kg per part	NA_TBD	NA_TBD
	(c) Long Term Goal by 2050; - Increase usage of environmental friendly chemical in kg per unit of production by 50%. (Friendly chemical use baseline data FY2019). (kg per part)	kg per part	NA_TBD	NA_TBD