
KT&G TCFD Alignment & Plan

Version 2022-1

TCFD

TASK FORCE ON
CLIMATE-RELATED
FINANCIAL
DISCLOSURES

Alignment & Plan

2022. 08



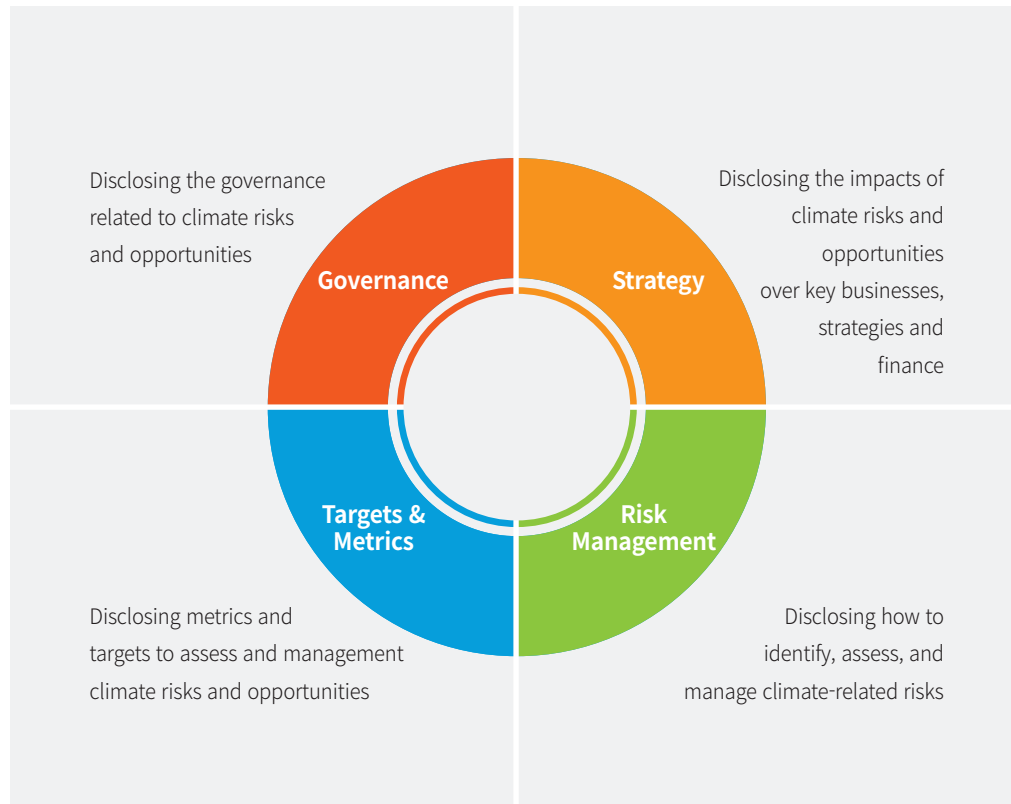
Disclaimer

This data includes predictive information on risk analysis and financial impact according to our business operations. It contains uncertainties that are premised on the analysis of internal and external business environmental changes, which might occur near in the future. In addition, as this material is based on preceding or reliable data source, we do not guarantee the accuracy or completeness of the material and its contents. Please be noted that this data cannot be used as evidence of legal responsibility for the investment result of investors under any circumstances.

TCFD Alignment Approach

After becoming TCFD supporter in 2020, we aim to fully engage in disclosing actual and potential financial impact caused by climate change, complying with regulations, and setting mitigation targets.

TCFD Recommendations



TCFD is an organization established by the International Financial Stability Board (FSB) that recommends companies to identify risks and opportunities related to climate change and disclose their financial impact.

KT&G Alignment Approach

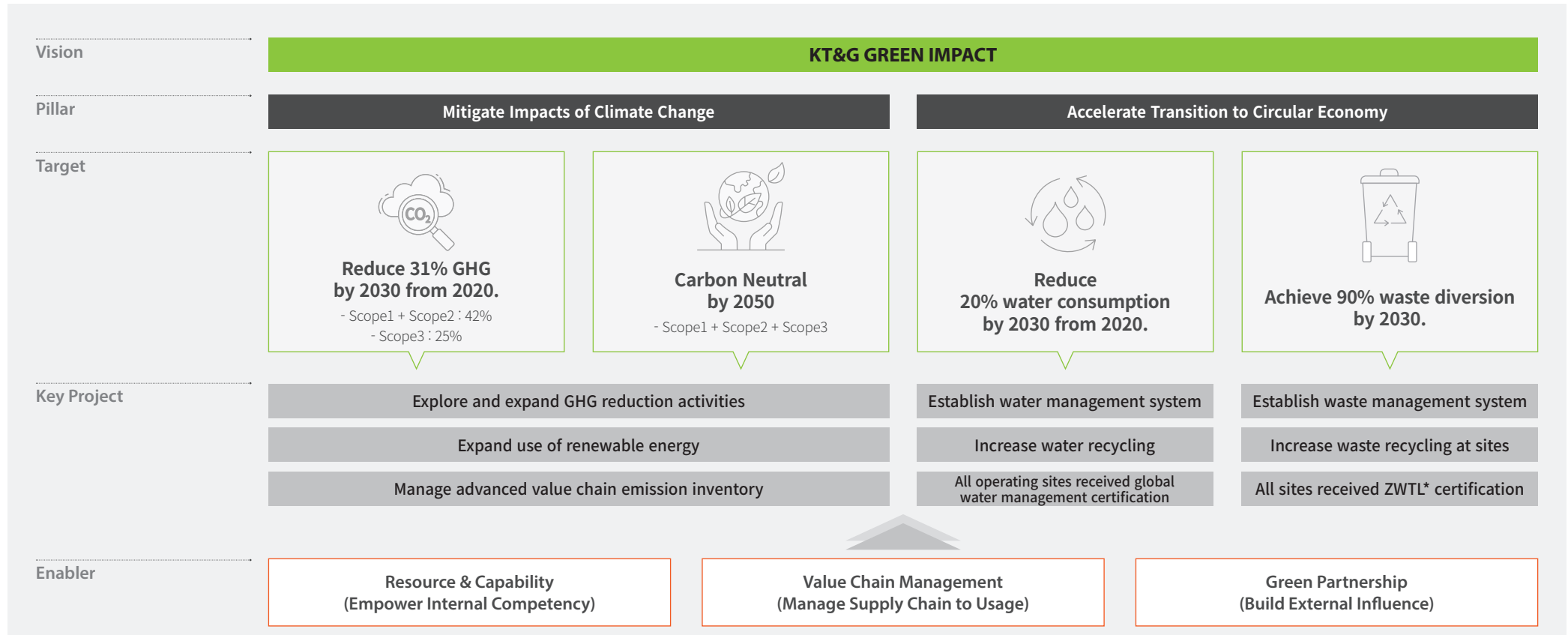


To respond to the growing demand of international stakeholders, KT&G is actively participating in tackling climate change. Also, we are committed to increasing disclosure on how we are addressing the effects of climate change by establishing a management system that complies with TCFD recommendations. We will continue updating the TCFD alignment status to effectively communicate with internal and external stakeholders.

KT&G Environmental Management Vision & Strategy

KT&G has established our Environmental Management Vision & Strategy that includes commitment to our mid- and long-term environmental strategy to tackle climate change and transit to the circular economy and also to promoting our “Green Impact.”

Mid- to Long-term Environmental Management Vision & Strategy



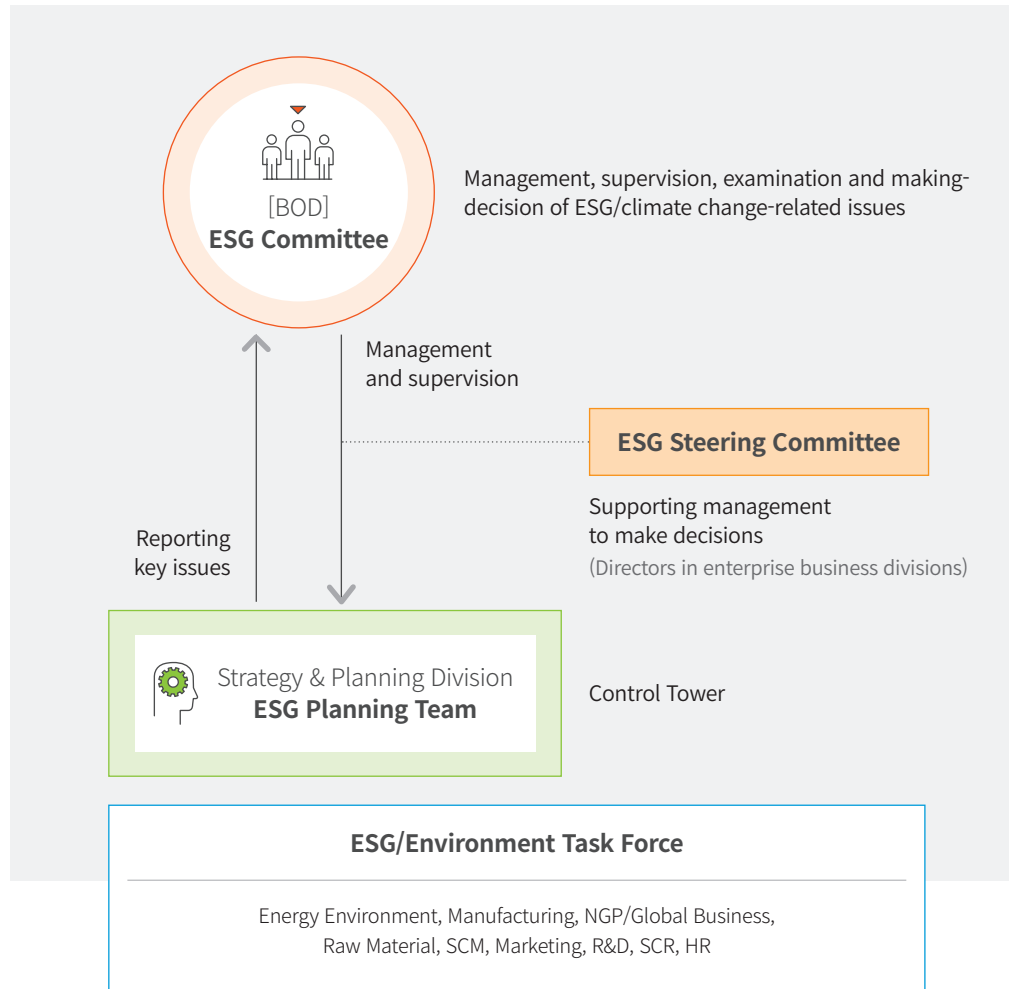
1) Zero Waste to Landfill

KT&G has established sustainable environmental management strategies to create shared values for our own and stakeholders. We aim to minimize the environmental impact and accelerate transition to circular economy across our operations and overall value chain. In particular, we have set mid- to long-term targets and have derived key projects in the field of tackling climate change, mitigating GHG emissions, and water and waste management. We will build our internal competence, manage the value chain and build external partnerships to systematically implement the projects to achieve our targets and goals.

1 Governance

KT&G has reorganized the governance to take actions against mid- and long-term climate change-related risks and has the ESG Planning Team under the Strategy & Planning Division as a Control Tower to discuss ESG issues comprehensively within the company.

Climate Change Organization and R&R



ESG Committee

Since September 2020, KT&G has discussed the ESG issues at the Board of Directors (BOD). For more in-depth discussion, KT&G established the ESG Committee in the BOD in February 2022. The ESG Committee examines the direction of the mid- and long-term strategy for tackling climate change depending on the enterprise ESG approach and manages and supervises the approval and implementation of major tasks every year.

ESG Steering Committee

As an organization supporting chief officers to make decisions by consisting of directors from all business divisions, it discusses issues to reinforced climate change response from the aspects of enterprise integration.

ESG Planning Team

As the ESG control tower directly under the CFO, the team is responsible for establishing an ESG/environmental management system that meets global standards.

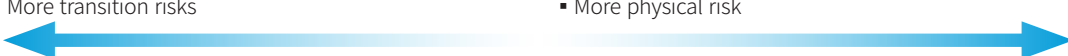
ESG/Environment Task Force

The Task Force, which is composed of a working-level consultative body from all business fields, holds meetings for major ESG issues to establish and implement detailed strategic tasks and future plans depending on the ESG targets.

2 Strategy

KT&G identifies the impacts of climate change over us by analyzing climate scenarios. We are establishing a strategic alignment plan against climate change and reinforcing the management system of risks and opportunity factors.

KT&G Climate Scenarios

	1 1.5°C Scenario	2 +2.0°C Scenario
Overview	<ul style="list-style-type: none"> The immediate transition to a carbon-neutral economy begins to limit global warming to well below 2°C above pre-industrial levels under the Paris Agreement as a global measure. 	<ul style="list-style-type: none"> Currently, no policy measures above the levels disclosed in each country are implemented, so a temperature increase above 2.6°C is applied.
Main assumptions	<ul style="list-style-type: none"> The world is working together to achieve carbon neutrality, and various initiatives and key measures are implemented to reduce emissions. 	<ul style="list-style-type: none"> Although the transition risks are relatively low because climate change-related policy measures that cause transition risks are not implemented, the physical risks caused by climate change occur more frequently and extremely.
Rising temperature compared to pre-industrial levels	<ul style="list-style-type: none"> Rising the temperature by 1.5°C-2.0°C compared to pre-industrial levels 	<ul style="list-style-type: none"> Rising temperature by more than 2.6°C compared to pre-industrial levels
Risk-taking tendency	<ul style="list-style-type: none"> More transition risks 	<ul style="list-style-type: none"> More physical risk
Applied climate scenario models	<p>Transition risks-based scenario model IEA Net Zero Emissions by 2050 Scenario (NZE)</p> <p>Physical risk scenario model IPCC WG2 AR5 CMIP5 mean model - RCP 2.6</p>	<p>Transition risks-based scenario model IEA Stated Policies Scenario (STEPS)</p> <p>Physical risk scenario model IPCC WG2 AR5 CMIP5 mean model - RCP 4.5</p>

Analysis of Climate Change Scenarios

The analysis of climate change-related scenarios makes clearer the impacts of climate change over us in uncertain future, and helps resilience to cope with such issues depending on scenarios.

KT&G's climate change scenarios include climate change-related physical and transition scenarios to meet the TCFD recommendations and evaluate risks, opportunities, and resilience in various climatic and environmental conditions. Our climate change scenarios were modeled for a longer-term situation by 2050 including by 2030 as corporate long-term point, and they were analyzed by referring to the scenarios disclosed through the International Energy Agency (IEA) and the Intergovernmental Panel on Climate Change (IPCC).

2 Strategy

As the carbon-dependent economy moves toward a low-carbon economy, this leads various changes in policy, technology, market, and reputation, and accordingly, changes in KT&G's business environment can lead to various transition risks.

Climate Change Transition Risks

Analysis of Impacts of KT&G's Transition Risks Depending on Climate Scenarios

Risk Classification	Risk	Scenarios	Planning Period				
			2025	2027	2030	2050	
Transition risks	Regulation	Carbon pricing	1	Low	Medium	High	Low
			2	Low	Low	Low	Low
		Strengthening the obligation to report GHG emissions	1	Low	Low	Low	Low
			2	Low	Low	Low	Low
	Technology	Obligations and regulations of the existing products and services	1	Low	High	High	Low
			2	Low	Low	Low	Low
		Introduction of lower carbon alternatives to existing products and services	1	Low	Low	Low	Low
			2	Low	Low	Low	Low
	Market	Changes in consumer behavior	1	Low	High	High	High
			2	Low	Low	Low	Low
		Rising raw material costs	1	High	High	High	High
			2	Low	High	High	High
	Reputation	Changes in consumer preferences	1	High	High	High	High
			2	Low	Low	Low	Low
		Prejudice against business field	1	Low	Low	High	Low
2			Low	Low	Low	Low	
Increase in stakeholders' concerns or negative views	1	Low	High	High	High		
	2	Low	Low	Low	Low		

1 1.5°C Scenario
2 +2.0°C Scenario

Risk impact level: Low, Medium, High

Transition risks

In order to evaluate the transition risks due to climate change, KT&G analyzed climate scenarios by setting assumptions for policies, carbon prices, and energy mixes suggested by the IEA as key variables. The transition to the low-carbon economy increases the possibility of rising carbon prices, new regulations related to GHG emissions, and risks related to market and reputation, and such risks are observed to be relatively higher in the 1.5°C scenario with higher transition risks. The impacts of technology or litigation risks are limited in both scenarios, but it is necessary to identify the trend and the current status through continuous monitoring because they have less importance as potential risk factors. Accordingly, KT&G has introduced the internal carbon pricing system to mitigate the impacts of risks to prepare against risks arising from carbon regulations and increased carbon prices in the future, and also has responded to relevant risks by setting mid- and long-term goals and making investments to reduce GHG emissions.

2 Strategy

The physical risks caused by climate change can affect the loss of capital such as KT&G's production facilities and various infrastructures and deterioration of productivity, and can also affect risks at the step of procurement such as prices of raw materials and supply chains.

Physical Risks from Climate Change

Analysis of Impacts of KT&G's Physical Risks Depending on Climate Scenarios

Risk Classification	Risk	Scenario	Planning Period				
			2025	2027	2030	2050	
Physical risks	Acute	Typhoon, hurricane	1	Low	Low	Low	Low
			2	Low	Medium	High	High
		Heavy rain and flooding	1	Low	Medium	High	High
			2	Medium	High	High	High
	Wildfire	1	Low	Low	Low	Low	
		2	Low	Low	Low	Low	
	Heat wave	1	Low	Low	Low	Low	
		2	Low	Low	Low	Low	
	Gradual	Change in rainfall	1	Low	Low	Low	Low
			2	Low	Low	Low	Low
Change in temperature		1	Low	Low	Low	Low	
		2	Low	Low	Low	Low	
Lack of water		1	Low	Low	Low	Low	
		2	Low	Low	Low	Low	
Rising sea level	1	Low	Low	Low	Low		
	2	Low	Low	Low	Low		

1 1.5°C Scenario
2 +2.0°C Scenario

Low Medium High
Risk impact level

Physical risks

To assess physical risks, KT&G identified the impacts of acute risks, including typhoons, hurricanes, heavy rains, and wildfires, and those of gradual risks, such as changes in rainfall or temperature and rising sea level. Unlike the transition risks, the physical risks were assessed to be higher than those in the +2.0°C scenario, and it was confirmed that the time of expansion of the impact was also earlier than that in the 1.5°C scenario. In addition, it was observed that the physical risks had less effects even under the 1.5°C scenario, but still had the impact. Accordingly, when major disasters such as typhoons or floods occur, KT&G organizes and operates emergency response action plans for each business site, including disaster recovery, while operating its own risk assessment to identify and assess harmful risk factors for each business site. In addition, we have established and operated the damage recovery manual by each situation at all business sites to rapidly recover from damage upon an event of a disaster.

2 Strategy

While climate change is a risk factor, it can also provide opportunity factors that can be used strategically. Climate change-related opportunities have a greater impact in the 1.5°C scenario as they occur primarily in the context of a transition to a low-carbon economy.

Opportunity Factors of Climate Change

Analysis of KT&G’s Opportunity Factors Depending on Climate Scenarios

Opportunity Classification	Opportunity	Scenario	Planning Period			
			2025	2027	2030	2050
Opportunity Factors of Climate Change	Products and Services	1	●	●	●	●
		2	●	●	●	●
	Resilience	1	●	●	●	●
		2	●	●	●	●
	Resource Efficiency	1	●	●	●	●
		2	●	●	●	●

1 1.5°C Scenario
2 +2.0°C Scenario

Opportunity Impact Level:
Low Medium High

Opportunity factor

Products & Services (O1)
 By enhancing product sustainability expanding sales of low-carbon products and reducing waste, it is expected that we will proactively respond to consumers’ needs for eco-friendly products and enhance resource circularity throughout the entire value chain.

Resilience (O2)
 By participating in global initiatives related to climate change and renewable energy, we can contribute to developing mid- and long-term risk mitigation solutions and strengthening its capabilities.

Resource Efficiency (O3)
 By enhancing production facility performance and improving energy efficiency, we could reduce operation costs and energy costs and contribute to the transition to the low-carbon industry.



KT&G’s Plan for Realizing Opportunities

We aim to minimize the environmental load throughout the life-cycle of the product by developing products that meet consumer needs by utilizing eco-friendly materials and recycling returned NGP devices and promoting our sites to receive ZWTL certification.

By responding to global initiatives and external rating levels such as CDP Climate Change and CDP Water Security, we have strengthened internal capacity in environmental risk management such as mitigation in GHG emissions and water management.

We intend to reduce operating costs by mitigating GHG emissions through the improvement of energy efficiency and replacement to electric vehicles. Also, we aim to reduce GHG emissions throughout the value chain by distributing high-efficiency devices to tobacco leaf farms.

3 Risk Management

KT&G has established a climate change risk management process to cope with climate change. We plan to improve the risk management process by integrating it with the enterprise business strategy.

Climate Change Risk Management Process



01 Identification of risks and opportunities

KT&G uses its risk identification system to the level satisfying the TCFD Recommendations to analyze the possibility of physical and transition risks for each climate scenario, and assess risk impacts by considering the point of time in the short, mid and long term. It identifies potential risks and opportunities from climate change by evaluating importance on a quantified scale depending on the possibility and impact of occurrence.

02 Management and handling of risks

We manage identified risks by setting measures against risks by individual risk types as the possibility and impact of each risk are different. We set the measures against risks as acceptance, avoidance and reduction depending on the characteristic of each assessed risk to reduce the impact of the risk by detailed action plans in connection with such measures.

03 Monitoring and evaluation

We monitor the progress of the response activities to ensure that the activities of handling risks are working properly and evaluate their performance to derive progress against the targets and supplements.

04 Updating and reporting

We update the management list and materiality assessment on climate change-related risks and opportunity factors by monitoring climate change-related research data, climate, environment, and energy policy directions, and referring to response activities in the same industry, and opinions of engaged divisions, and report them to the ESG Committee.

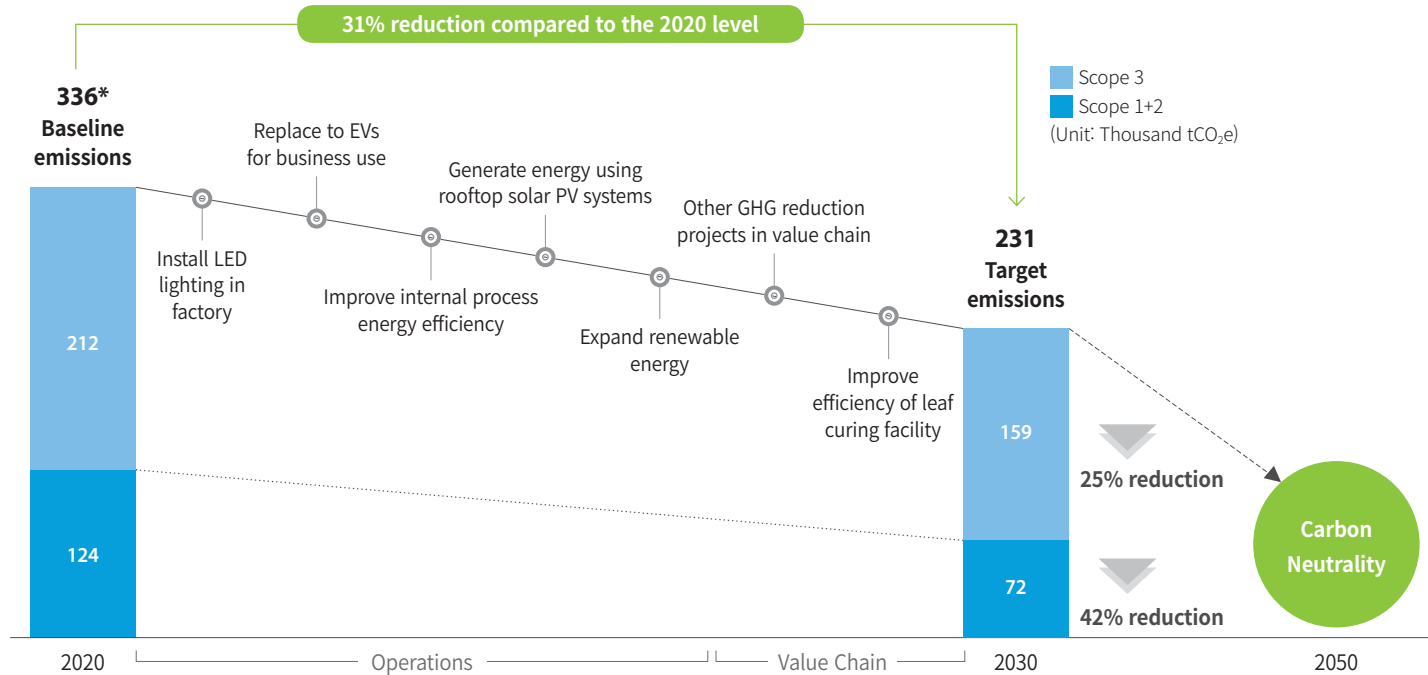
Integrated Management of Enterprise Risks from Climate Change

KT&G manages risks from climate change by integrating them into the enterprise risk management system. We divide all risks into financial and non-financial risks, and classify risks from climate change into non-financial risks and manage them. We carry out regular company-wide risk assessment and irregular assessment and management when risks occur or the possibility of such occurrence is changed due to changes in the internal and external environment. Depending on the type of risk, we are responding through an organization dedicated to each field and also reporting risks from climate change to the CFO and the ESG Committee in the BOD through the ESG Planning Team.

4 Targets/Metrics

KT&G has made efforts actively to respond to climate change by setting the goals of reducing GHG emissions by 31% (Scope 1+2: 42%, Scope 3: 25%) by 2030 compared to the 2020 level based on SBT¹⁾ and achieving carbon neutrality by 2050.

Mid- and Long-term GHG Reduction Target and Implementation Plans



Reducing GHG emissions in business sites and entire value chain by 31% by 2030 compared to the 2020 level and achieving carbon neutrality by 2050

Key Consideration

- Direct operations and value chain
- Short-term feasibility
- Potential for reducing GHG emissions
- Cost-effectiveness of emission reduction compared to investment costs
- Internal resource & capability

*Calculating external emissions (Scope 3) by additionally analyzing value chain including the steps of procurement of foreign leaf tobacco and transportation in 2022

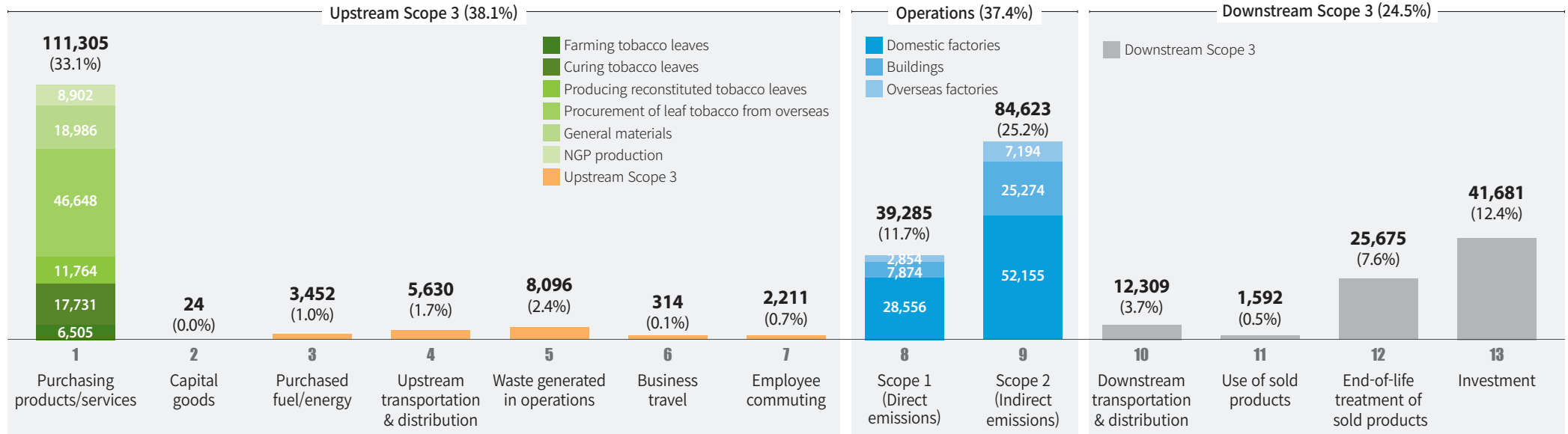
KT&G has set an emissions reduction target based on SBT according to the Paris Agreement, which aims to curb average global temperature increase below 2°C and limit to 1.5°C compared to the pre-industrial level. We aim to reduce emissions by 31% (scope 1+2 42%, scope 3 25%) in the entire value chain by 2030 compared to the 2020 level, and achieve carbon neutrality by 2050. To achieve our goals, we comprehensively consider the possibility to promote by item in the short term, the potential for reduction, effectiveness, etc., and we will proactively respond to climate change by improving energy efficiency in our operations and renewable energy power, etc.

1) SBT: Science Based Target

4 Targets/Metrics

KT&G's total GHG emissions in 2020 amounted to 336,197 tons, which was at the ratio of 37% from operations (Scopes 1 and 2) to 63% for the value chain (Scope 3), and advanced inventory and external verification have been conducted to strengthen the management of GHG emissions.

Total GHG emissions in entire value chain* (2020)



Scope 3: Upstream	Activity	Description
Scope 3: Upstream	1 Purchasing products/services	• Emissions from tobacco leaf farming, curing, production of reconstituted tobacco leaves, and procurement of tobacco leaves from overseas • Emissions from manufacturing of general materials and NGP devices
	2 Capital goods	• Emissions from the step of pre-manufacturing of OA equipment (printer, PC, multifunctional printer, etc.)
	3 Purchased fuel/energy	• Emissions from purchased fuel/energy production for domestic and overseas use
	4 Upstream transportation & distribution	• Emissions from fuel consumption of vehicles for domestic and overseas transportation and distribution of raw materials
	5 Waste generated in operations	• Emissions from waste treatment such as incineration, landfill, and recycling
	6 Business travel	• Emissions from fuel consumption of transportation means upon employees' business travel overseas
	7 Employee commuting	• Emissions from fuel consumption of transportation means upon employee commuting

Scope 1+2	Activity	Description
Scope 1+2	8 Scope 1 (Direct emissions)	• Emissions from the operation of tobacco production facilities (LNG) and operating vehicles (diesel, etc.) at domestic and overseas business sites
	9 Scope 2 (Indirect emissions)	• Emissions from electricity and steam consumption at business sites and buildings
Scope 3: Downstream	10 Downstream transportation & distribution	• Emissions from transportation means for final goods and logistics
	11 Use of sold products	• Emissions from electricity used charging NGPs
	12 End-of-life treatment of sold products	• Emissions from disposal of NGP (incineration)
	13 Investment	• Emissions due to ownership of shares out of total emissions of subsidiaries

* In 2020, the emissions in Scope 3 were the figure verified by DNV Business Assurance Korea (DNV) as a third-party verification organization, but may be changed later through advanced data management in the future.

Policy and stakeholder engagement & Next Step

KT&G will disclose the implementation status for TCFD Recommendations on the KT&G report or official website and update them frequently to communicate with our stakeholders more transparently.

Policy and stakeholder engagement

"KT&G will actively communicate with stakeholders by publishing annual results of its activities aimed at achieving carbon neutrality by 2050. We will also contribute to reducing greenhouse gas emissions by working with governments and related agencies to achieve the goals consistent with the Paris Agreement, which seeks to limit global average temperature rise to well below 2°C and limit it to less than 1.5°C."

Next Step to Enhance TCFD Alignment



We plan to continuously improve how to monitor climate-related risks by updating and changing data available in the analysis of climate-related scenarios **to minimize uncertainty caused by mid- and long-term climate change risks.**



We will **advance the climate-related risk management process** and examine the plan for responding to climate change according thereto to effectively manage and mitigate climate-related risks and identify new climate-related opportunities.



We will make efforts **to expand and manage the responsibilities for GHG emissions** due to our business activities in order to reduce the emissions in the value chain (Scope 3) by actively cooperating with business partners.



We promote an environmental management system that meets stakeholders' expectations **by transparently disclosing the performance of the mid- and long-term GHG reduction goal annually.**