KT&G - Water Security 2023

W0. Introduction

W0.1

(W0.1) Give a general description of and introduction to your organization.

KT&G is headquartered in South Korea and is growing as a global company beyond the domestic market with its business in tobacco, nutraceuticals, cosmetics, biopharmaceuticals, and real estate. KT&G is listed on the securities market of the Korea Stock Exchange, and its total sales were about KRW 5.85 trillion as of 2022. The breakdown of the sales share by business segment is as follows: 61.1% for tobacco, 23.7% for nutraceuticals, and 15.6% for the rest including cosmetics and real estate.

KT&G is striving to create social value and promote sustainability activities based on its corporate philosophy of 'Exemplary Company', 'Progressive Company', and 'Inclusive Company'. These values are the driving force behind our efforts to create social value as well as the basis for our various activities to strengthen sustainability. In this way, we contribute positively to society through various social initiatives and strive to fulfill our environmental responsibilities by developing eco-friendly products, saving resources, and efficiently managing energy use.

On the global front, KT&G has secured a strong foothold in over 120 countries, powered by high-quality products, robust distribution networks, and advanced marketing strategies. With manufacturing facilities strategically located in Russia, China, and Indonesia, we are well-positioned to cater to the increasing global demand.

Recognizing the implications of our diverse business operations on the environment, we proactively and strategically address issues related to climate change and greenhouse gas emissions. Our goal is to manage these factors responsibly and sustainably.

In an ever-changing market, we constantly evolve and innovate, striving for global excellence. This relentless pursuit of change and innovation, coupled with our commitment to sustainability and creating social value, augments our competitive edge and cements our status as a global market leader.

W-FB0.1a/W-AC0.1a

(W-FB0.1a/W-AC0.1a) Which activities in the food, beverage, and tobacco and/or agricultural commodities sectors does your organization engage in?

Processing/Manufacturing
Distribution

W0.2

(W0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date
Reporting year	January 1 2022	December 31 2022

W0.3

(W0.3) Select the countries/areas in which you operate.

Indonesia
Republic of Korea
Russian Federation
Turkey

W0.4

(W0.4) Select the currency used for all financial information disclosed throughout your response.

KRW

W0.5

(W0.5) Select the option that best describes the reporting boundary for companies, entities, or groups for which water impacts on your business are being reported.

Companies, entities or groups over which operational control is exercised

W0.6

(W0.6) Within this boundary, are there any geographies, facilities, water aspects, or other exclusions from your disclosure?

Yes

W0.6a

(W0.6a) Please report the exclusions.

Exclusion	Please explain
Offices and some minor facilities	Facilities operated as offices or warehouses in our domestic and international business sites were excluded from the report, as the related water consumption amount is considered insignificant, mainly involved with basic services such as WASH (water access, sanitation, and hygiene services). It is not considered as a significant exclusion in the report, and the water usage subject to such exclusion amounts to less than 1% of KT&G's total water consumption (549.80ML).

W0.7

(W0.7) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?

Indicate whether you are able to provide a unique identifier for your organization.	Provide your unique identifier
Yes, an ISIN code	KR7033780008

W1. Current state

W1.1

(W1.1) Rate the importance (current and future) of water quality and water quantity to the success of your business.

	Direct use importance rating	Indirect use importance rating	Please explain
Sufficient amounts of good quality freshwater available for use	Important	Important	Water is an essential resource for KT&G to grow high-quality leaf tobacco, the raw material for cigarettes, and produce tobacco products. Considering the nature of leaf tobacco as a crop, stable production and quality are only guaranteed by availability of high-quality water. In the manufacturing process of cigarettes, tobacco processing takes place, which consists of moisturizing and drying of leaf tobacco. A proper control of moisture content in the tobacco has a decisive impact on the quality of the product. Therefore, securing sufficient amounts of freshwater is essential for this process. Water is also used in operating various facilities at our manufacturing sites, including cooling towers and boilers. In conclusion, in the tobacco business, KT&G's main business area, production can be disrupted if we fail to secure sufficient amounts of good quality freshwater. Water is also an important resource in the supply chain, not only in the direct manufacturing sites. Water is used by suppliers to grow leaf tobacco and produce required materials. The quality of the raw materials from the supply chain determines the quality of the final product. KT&G's tobacco business cannot be completely free from water dependence due to the nature of its business, but it is expected to become less and less dependent. This is supported by increasing water efficiency in production facilities, advances in recycling technologies, and KT&G's commitment to water targets. KT&G has set a water goal of reducing water withdrawals by 20% by 2030 compared to 2020. Given that water withdrawals are closely linked to water dependency, it is likely that water dependency will decrease.
Sufficient amounts of recycled, brackish and/or produced water available for use	Neutral	Neutral	Water is an important resource for KT&G's business, but recycled water has a relatively lower level of importance compared to good quality freshwater. While recycled water is underused compared to freshwater, it can be promoted to be used for operating facilities where water quality is not that critical. In the supply chain, recycled water can also be of great benefit to the suppliers that produce tobacco-related materials. In addition, using recycled water may contribute to decrease in use of quality freshwater, also helping to reduce water dependence of the business and saving costs. While our dependence on recycled water will persist to be lower compared to that of good quality freshwater, it is likely to remain at a similar level as it is today, given that the utilization of recycled water can reduce overall water dependency.

W-FB1.1a/W-AC1.1a

(W-FB1.1a/W-AC1.1a) Which water-intensive agricultural commodities that your organization produces and/or sources are the most significant to your business by revenue? Select up to five.

Agricultural commodities	% of revenue dependent on these agricultural commodities	Produced and/or sourced	Please explain
Tobacco	61-80	Sourced	As of 2022, about 61.1% of KT&G's annual sales were generated from the tobacco business. Leaf tobacco, tobacco sheets, and tobacco by-products all require water. The main sourcing countries for leaf tobacco, the most important raw material, are India, Malawi, and Brazil.

W1.2

(W1.2) Across all your operations, what proportion of the following water aspects are regularly measured and monitored?

	% of sites/facilities/operations	Frequency of measurement	Method of measurement	Please explain
Water withdrawals – total volumes	100%	Monthly	KT&G's six domestic sites monitor their internal water meters on a daily basis and register their monthly water withdrawals in the company's new integrated management system based on monthly bills issued by their water suppliers. The three overseas sites (Indonesia, Turkey, and Russia) monitor total water withdrawals by summing up the monthly bills from each water supplier and entering them into the manual registry or ERP system.	The monitoring rate(%) is per site, and the aforementioned site refers to a manufacturing plant of our products. 100% of water withdrawals are measured and monitored across all our operations.
Water withdrawals – volumes by source	100%	Monthly	The water suppliers issue water withdrawal bills to the company monthly. The bills are then entered into a manual registry or internal system and both domestic manufacturing sites and overseas sites are monitored by The Energy & Environment Department. In Russia and Turkey, daily water withdrawals are monitored using water meters and then confirmed once again through monthly bills from water suppliers.	The monitoring rate(%) is per site, and the aforementioned site refers to a manufacturing plant of our products. Water withdrawals volumes by source are 100% measured and monitored across all our operations.
Entrained water associated with your metals & mining and/or coal sector activities - total volumes [only metals and mining and coal sectors]	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Produced water associated with your oil & gas sector activities - total volumes [only oil and gas sector]	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Water withdrawals quality	100%	Yearly	KT&G consults with testing organizations to assure quality of groundwater and tap water at withdrawal stage in domestic business sites. We request analyses only from organizations that have fulfilled legal standards to ensure that water quality within legal limits. The test items include chlorine and turbidity for tap water, and about 15 items for groundwater, including hydrogen ion concentration and nitrate nitrogen.	The monitoring rate(%) is per site, and the aforementioned site refers to a manufacturing plant of our products. Water withdrawals quality is 100% measured and monitored across all our operations.
Water discharges – total volumes	100%	Monthly	We monitor total water discharges in two ways. The sites which have their own wastewater treatment plants monitor water discharges on a daily basis using internal water meters and sum them up for monthly management. For those outsourcing all of their water discharges, the total volume is summed up on a monthly basis for monitoring and management, based on bills issued by the outsourced treatment companies.	The monitoring rate(%) is per site, and the aforementioned site refers to a manufacturing plant of our products. Total volume of water discharges is 100% measured and monitored in KT&G.
Water discharges – volumes by destination	100%	Monthly	All water discharges from the five sites with their own wastewater treatment plants are released to surface water (freshwater), and the volume is measured every day through meters and summed up monthly for monitoring. Sites that without their own wastewater treatment plants outsource the treatment service to third-party companies. Throughout the treatment process, the discharges are measured, and we receive the result. It is then uploaded to the management system on a monthly basis.	The monitoring rate(%) is per site, and the aforementioned site refers to a manufacturing plant of our products. Water discharge volumes by destination are 100% measured and monitored in KT&G.
Water discharges – volumes by treatment method	100%	Monthly	At the five sites with their own wastewater treatment plants, all incoming water to wastewater treatment plants is discharged after primary physical/chemical treatment and secondary biological treatment, and the volumes of monthly inflow and outflow are recorded in Excel spreadsheets. Those without their own wastewater treatment plants outsource their entire wastewater treatment and monitor the discharges based on bills issued by the outsourced companies.	The monitoring rate(%) is per site, and the aforementioned site refers to a manufacturing plant of our products. Water discharge volumes by treatment method are 100% measured and monitored in KT&G.
Water discharge quality – by standard effluent parameters	100%	Quarterly	The sites with wastewater treatment plants conduct water quality tests that include about 20 items such as PH and BOD for raw water and discharges based on internal standards and ISO14001 system standards. For overseas sites, we recognize country-specific regulations of water discharges and manage them accordingly complying with the legal standards. When handling outsourcing, we review reports submitted by the contractor to ensure that the water quality meets legal criteria.	The monitoring rate(%) is per site, and the aforementioned site refers to a manufacturing plant of our products. Water discharge quality by standard effluent parameters is 100% measured and monitored in KT&G.
Water discharge quality – emissions to water (nitrates, phosphates, pesticides, and/or other priority substances)	51-75	Quarterly	For domestic sites, every quarter, we conduct water quality tests that include about 20 items such as PH, BOD and COD for raw water and discharges based on ISO14001 system standards and our internal standards. We also test the discharge of pollutants such as nitrates and phosphates from the leaf tobacco crop into water.	The monitoring rate(%) is per site, and the aforementioned site refers to a manufacturing plant of our products. 'Water discharge quality – emissions to water' is 51% to 75% measured and monitored in KT&G.
Water discharge quality – temperature	Not monitored	<Not Applicable>	<Not Applicable>	KT&G did not conduct temperature measurement and monitoring of discharged water quality until 2022, but started temperature measurement and monitoring of water quality in June 2023, starting with domestic manufacturing sites.
Water consumption – total volume	100%	Monthly	KT&G monitors daily water consumption using internal water meters installed in all operations and manages monthly consumption based on bills issued by tap water and groundwater withdrawal sources. For both domestic and overseas plants, the Energy & Environment Department enters the information into the internal system and finally monitors it.	The monitoring rate(%) is per site, and the aforementioned site refers to a manufacturing plant of our products. Total volume of water consumption is 100% measured and monitored in KT&G.
Water recycled/reused	100%	Monthly	In late 2021, KT&G began monitoring monthly water recycled using flow meters while supplementing related facilities such as pumps and pipes. The amount of water recycled in KT&G has been steadily increasing.	The monitoring rate(%) is per site, and the aforementioned site refers to a manufacturing plant of our products. Total volume of water recycled is 100% measured and monitored in KT&G.
The provision of fully-functioning, safely managed WASH services to all workers	100%	Yearly	We strictly comply with the legal hygiene standards of the countries and regions where our domestic and overseas business sites are located, treat sewage in accordance with relevant laws and regulations, and provide WASH-related services for our employees' human rights to water and sanitation. Five domestic business sites are certified annually with ISO14001 and ISO45001 certifications for hygiene and occupational health and safety standards.	The monitoring rate(%) is per site, and the aforementioned site refers to a manufacturing plant of our products. The provision of fully-functioning, safely managed WASH services to all workers is 100% measured and monitored in KT&G.

W1.2b

(W1.2b) What are the total volumes of water withdrawn, discharged, and consumed across all your operations, how do they compare to the previous reporting year, and how are they forecasted to change?

	Volume (megaliters/year)	Comparison with previous reporting year	Primary reason for comparison with previous reporting year	Five-year forecast	Primary reason for forecast	Please explain
Total withdrawals	733.01	About the same	Increase/decrease in efficiency	Lower	Increase/decrease in efficiency	Considering the importance of water resources, KT&G regularly manages total volumes of water withdrawals, water discharges, water consumption. For rational water resource management, water-related data will be evaluated annually according to the following criteria and reported in a consistent manner. - Much lower(less than -10%), Lower(-10 to -5%), About the same(within ±5%), Higher(5 to 10%), Much higher(more than +10%) In 2022, water withdrawals were about 1.4% lower than the previous year, which corresponds to "About the same" in terms of change. However, the volume itself has decreased, which is in line with KT&G's goal of reducing water withdrawals through increased water use efficiency. Also, considering the target of reducing total water withdrawals by 20% by 2030, it is likely that KT&G's total volume of water withdrawn in 5 years will be 10% or more lower than the current level, which corresponds to 'Lower' in the change criterion. Year-on-year change (%) = [733.01(A) - 743.32(B)] / 743.32(B) * 100 = -1.4 - A: Total withdrawals in 2022 (megaliters/yr) - B : Total withdrawals in 2021 (megaliters/yr) All operations in KT&G register their monthly water withdrawals in the company-wide new integrated management system based on monthly bills issued by respective water suppliers, and the annual volume is calculated by aggregating them.
Total discharges	183.22	About the same	Increase/decrease in efficiency	Lower	Increase/decrease in efficiency	Considering the importance of water resources, KT&G regularly manages total volumes of water withdrawals, water discharges, water consumption. For rational water resource management, water-related data will be evaluated annually according to the following criteria and reported in a consistent manner. - Much lower(less than -10%), Lower(-10 to -5%), About the same(within ±5%), Higher(5 to 10%), Much higher(more than +10%) In 2022, discharges increased by about 2.3% year-over-year, which corresponds to “About the same” according to the change criterion. The water discharges were expected to decrease along with KT&G’s water withdrawals reduction goal, but since it is still in the beginning, the decrease in water withdrawals was not large enough to lead to a decrease in total discharges. However, considering the target of reducing total water withdrawals by 20% by 2030, it is likely that KT&G's total discharges will be 10% or more lower in five years through increased water use efficiency, which is equivalent to 'Lower' in the change criteria. Year-on-year change (%) = [183.22(A) - 179.13(B)] / 179.13(B) * 100 = 2.3 - A: Total discharges in 2022 (megaliters/yr) - B : Total discharges in 2021 (megaliters/yr) We monitor total water discharges in two ways. The sites which have their own wastewater treatment plants monitor water discharges on a daily basis using internal water meters and sum them up for monthly management. For those outsourcing all of their water discharges, the total volume is summed up on a monthly basis for monitoring and management, based on bills issued by the outsourced treatment companies. Annual discharges are calculated by summing the monthly discharges.
Total consumption	549.8	About the same	Increase/decrease in efficiency	Lower	Increase/decrease in efficiency	Considering the importance of water resources, KT&G regularly manages total volumes of water withdrawals, water discharges, water consumption. For rational water resource management, water-related data will be evaluated annually according to the following criteria and reported in a consistent manner. - Much lower(less than -10%), Lower(-10 to -5%), About the same(within ±5%), Higher(5 to 10%), Much higher(more than +10%) Water consumption in 2022 decreased by approximately 2.6% compared to the previous year, which is equivalent to "About the same" according to the change criterion. Considering KT & G's goal of reducing water withdrawals, the reduced withdrawals are leading to a reduction in consumption. While the reduction is not significant yet, we are on track to meet the KT&G water goal. Also, given the target of reducing total water withdrawals by 20% by 2030, it is likely that KT&G's total consumption in five years' time will be at least 10% lower than current level, which is equivalent to 'Lower' according to the change criterion. Year-on-year change (%) = [549.80(A) - 564.19(B)] / 564.19(B) * 100 = -2.6 - A: Total consumption in 2022 (megaliters/yr) - B: Total consumption in 2021 (megaliters/yr) KT&G has installed water meters in its entire business sites in Korea and abroad to monitor water consumption on a daily basis, and manages monthly consumption in an integrated way based on bills from each tap water and groundwater source. Annual water consumption is calculated by aggregating the monthly consumption, which corresponds to the aggregation of the data calculated by region.

W1.2d

(W1.2d) Indicate whether water is withdrawn from areas with water stress, provide the proportion, how it compares with the previous reporting year, and how it is forecasted to change.

	Withdrawals are from areas with water stress	% withdrawn from areas with water stress	Comparison with previous reporting year	Primary reason for comparison with previous reporting year	Five-year forecast	Primary reason for forecast	Identification tool	Please explain
Row 1	Yes	1-10	Much lower	Other, please specify (Indonesia, in which total water withdrawals amounted to 175,903 tons in 2021, was excluded from the areas with water stress as its water stress index was lowered to “Low” in 2022.)	Lower	Increase/decrease in efficiency	WRI Aqueduct	As of 2022, among KT&G's nine domestic and overseas manufacturing sites, the only site located in a water-stressed area is the Turkey site, with 17,308 tons of water withdrawals in 2022 or 2.4% of KT&G's total water withdrawals (733,014 tons). The scope of total water withdrawals includes all direct operations in KT&G. Water is an essential resource for KT&G to grow tobacco, a raw material for cigarettes. Without access to quality water, cigarette production can be disrupted. KT&G has set a management goal of achieving KRW 10.2 trillion in total sales by 2027, and given the importance of tobacco to KT&G's business, high sales growth of more than 10% per year and a consequent increase in water consumption is expected. However, considering advances in water-related technologies, such as water reuse, and KT&G's commitment to reducing water consumption, the increase of water usage against sales growth is likely to slow. In this sense, KT&G has set its internal change index to "Higher/lower +-10%". - Much lower (less than -10%), Lower(-10 to -5%), About the same(within ±5%), Higher(5 to 10%), Much higher (more than 10%) KT&G uses the WRI Aqueduct Tool to analyze water based on 13 indicators divided into three categories (Physical risk quantity, Physical risk quality, and Regulatory and reputational risk). The WRI Aqueduct Tool is a CDP-recognized water risk analysis tool, and a water stress region is defined in relation to the baseline water stress and baseline water depletion indicators. Water stress regions are determined with baseline water stress being ‘High’(40-80%) or higher, or with baseline water depletion being ‘High’(50~75%) or higher. KT&G conducts water risk analysis every year, and in 2022, we conducted water risk analysis for a total of 38 business sites(Based on region: 43 sites), including domestic and overseas manufacturing sites, overseas leaf tobacco farms, and domestic core material partners. We also analyzed the baseline water stress and baseline water depletion indicators separately to determine water stress regions. As a result, we found that the baseline water stress of the manufacturing site in Turkey was ‘Extremely High’ (>80%), indicating that it belongs to a water stress region.

W-FB1.2e/W-AC1.2e

(W-FB1.2e/W-AC1.2e) For each commodity reported in question W-FB1.1a/W-AC1.1a, do you know the proportion that is produced/sourced from areas with water stress?

Agricultural commodities	The proportion of this commodity produced in areas with water stress is known	The proportion of this commodity sourced from areas with water stress is known	Please explain
Tobacco	Not applicable	Yes	KT&G's main product, tobacco, is made from leaf tobacco. As leaf tobacco is a crop that requires high-quality water, it can be vulnerable to water stress depending on the region where it is grown. Therefore, regular water stress analysis is required. KT&G analyzes water risk every year using the WRI Aqueduct Tool, and the water stress region is defined based on the baseline water stress and baseline water depletion indicators among the 13 water-related indicators. To become a water stress region, the baseline water stress must be ‘High’ (40~80%) or higher, or the baseline water depletion must be ‘High’ (50~75%) or higher. KT&G conducted water risk analysis for a total of 38 sites(Based on region: 43 sites), including 9 domestic and overseas manufacturing sites, 12 overseas leaf tobacco farms, and 17 domestic core material suppliers, and analyzed the baseline water stress and baseline water depletion indicators separately to determine water stress regions.

W-FB1.2g/W-AC1.2g

(W-FB1.2g/W-AC1.2g) What proportion of the sourced agricultural commodities reported in W-FB1.1a/W-AC1.1a originate from areas with water stress?

Agricultural commodities	% of total agricultural commodity sourced from areas with water stress	Please explain
Tobacco	11-25	The main sourcing countries for leaf tobacco, the main ingredient in KT&G's cigarettes, are India, Malawi, Brazil, and Tanzania, and the WRI Water Risk analysis found that 10,817 tons, or about 24.5% of the total 44,191 tons of leaf tobacco procured as of 2022, is sourced from water-stressed areas. To ensure stable procurement of raw materials, we identify water-stressed regions and conduct water risk analysis every year, and the results are actively utilized for KT&G's supply chain management strategy, such as managing suppliers in water-stressed regions and establishing backup plans and response systems (e.g. adjusting the proportion of procurement by region). These supply chain risks are not managed independently, but are comprehensively managed in connection with company-wide business risks. In the future, the proportion of cigarettes sourced from water-stressed regions will gradually decrease as the forecast on water-stressed regions gets more accurate and the response system becomes more sophisticated.

W1.2h

(W1.2h) Provide total water withdrawal data by source.

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Primary reason for comparison with previous reporting year	Please explain
Fresh surface water, including rainwater, water from wetlands, rivers, and lakes	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	It is not applicable as KT&G only utilizes two water sources, official municipal water from a third party and renewable groundwater.
Brackish surface water/Seawater	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	It is not applicable as KT&G only utilizes two water sources, official municipal water from a third party and renewable groundwater.
Groundwater – renewable	Relevant	247.07	Lower	Other, please specify (KT&G is reducing its total water withdrawals and lowering the share of groundwater in its total water withdrawals.)	The data has been derived through direct calculation. KT&G uses renewable groundwater as a water source at two domestic sites (Sintanjin and Yeongju) and one overseas site in Indonesia, and the amount of water withdrawn from this source in 2022 accounted for 33.7% of the total. - Much lower(less than -10%), Lower(-10 to -5%), About the same(within ±5%), Higher(+5~10%), Much higher(more than +10%) In 2022, groundwater withdrawals decreased by -8.4% compared to the previous year, which falls into the range of -5 to -10%, so it is categorized as 'Lower'. Year-on-year change (%) = [247.07(A) - 269.68(B)] / 269.68(B) * 100 = -8.4 - A: Total water withdrawals in 2022 (megaliters/yr) - B : Total water withdrawals in 2021 (megaliters/yr) KT&G utilizes only two water sources, official municipal water supply from a third party and renewable groundwater, and is gradually reducing the proportion of groundwater.
Groundwater – non-renewable	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	It is not applicable as KT&G only utilizes two water sources, official municipal water from a third party and renewable groundwater.
Produced/Entrained water	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	It is not applicable as KT&G only utilizes two water sources, official municipal water from a third party and renewable groundwater.
Third party sources	Relevant	485.95	About the same	Other, please specify (KT&G is reducing total water withdrawals and increasing the share of official municipal water from a third party as a percentage of total water withdrawals.)	For third-party sources, we are taking water from official municipalities. The data has been officially collected by the municipality and the amount of water withdrawn is regularly monitored. The amount of water withdrawn is reflected in the water bill. KT&G uses municipal water as a water source at six domestic and two overseas sites, and the total amount of withdrawals in 2022 from this source was 66.3%. The water consumption in 2022 increased by 2.6% year-on-year, which is equivalent to 'About the same' as the change rate falls within the range within ±5%. Year-on-year change (%) = [485.95(A) - 473.64(B)] / 473.64(B) * 100 = 2.6 - A: Total water withdrawals in 2022 (megaliters/yr) - B: Total water withdrawals in 2021 (megaliters/yr) KT&G utilizes only two water sources, official municipal water supply from a third party and renewable groundwater, and is gradually increasing the proportion of municipal water.

W1.2i

(W1.2i) Provide total water discharge data by destination.

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Primary reason for comparison with previous reporting year	Please explain
Fresh surface water	Relevant	54.67	Higher	Other, please specify (There is some variation in the proportion of discharge destinations from year to year, but not much.)	The data was derived through direct calculation. Among KT&G's nine domestic and overseas business sites, Sintanjin 1 plant discharges wastewater to rivers after primary treatment at its own wastewater treatment plant. In 2022, the volume of discharges increased by 6.1% year-on-year, falling within the range of +5% to 10%, thus falling under the category of 'Higher'. Year-on-year change (%) = [54.67(A) - 51.55(B)] / 51.55(B) * 100 = 6.1 - A: Total water discharges in 2022 (megaliters/yr) - B : Total water discharges in 2021 (megaliters/yr) KT&G utilizes only two types of discharge destinations in the process: third-party destinations and surface water (freshwater). There is some variation in the proportion of discharge destinations from year to year, but not much.
Brackish surface water/seawater	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	It is not applicable as KT&G discharges water only to surface water (freshwater) and to third-party destinations.
Groundwater	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	It is not applicable as KT&G discharges water only to surface water (freshwater) and to third-party destinations.
Third-party destinations	Relevant	128.54	About the same	Other, please specify (There is some variation in the proportion of discharge destinations from year to year, but not much.)	Regarding third-party destinations, we use official municipal wastewater treatment plants to collect the data. The municipal treatment plant collects and monitors the volume of water discharged on a regular basis. With the exception of Sintanjin 1 plant, eight of our plants primarily treat wastewater at their own wastewater treatment plants before discharging it to sewage treatment plants or outsource the entire amount to third parties. In 2022, the discharged volume increased by 0.8% from the previous year, which falls within the range of ±5% change rate, thus corresponding to 'About the same'. Year-on-year change (%) = [128.54(A) - 127.58(B)] / 127.58(B) * 100 = 0.8 - A: Total water discharges in 2022 (megaliters/yr) - B: Total water discharges in 2021 (megaliters/yr) KT&G utilizes only two types of discharges: discharge to third parties and discharge to surface water (freshwater), and there is a slight change in the proportion every year, which is not significant.

W1.2j

(W1.2j) Within your direct operations, indicate the highest level(s) to which you treat your discharge.

	Relevance of treatment level to discharge	Volume (megaliters/year)	Comparison of treated volume with previous reporting year	Primary reason for comparison with previous reporting year	% of your sites/facilities/operations this volume applies to	Please explain
Tertiary treatment	Relevant	48.25	Lower	Increase/decrease in efficiency	21-30	The Sintanjin 1 plant uses its own wastewater treatment plant for tertiary treatment of wastewater for water discharged from the manufacturing process of tobacco products. The plant conducts primary treatment to remove sewage, sand, oil, grease, etc. suspended in the wastewater using physical and chemical methods, secondary treatment to remove nutrients such as nitrogen and phosphorus through biological treatment, and tertiary treatment to remove residual organic matter and SS (suspended solids) by filtering the secondary treated water with sand and activated carbon. The Sintanjin 1 plant regularly conducts water quality tests for the tertiary treated wastewater. In accordance with ISO14001 criteria related to water quality management, we implement tests for about 20 items such as PH and BOD and manage wastewater quality by applying an 80% level, which is stricter than the national legal standard. [Setting Criteria of Change] KT&G has set a target of achieving KRW 10 trillion in sales by 2027, which requires an increase in sales by more than 10% each year, and consequently, an increase in water consumption is also expected. However, given the target of reducing water withdrawals by 20%, the increase in water usage in relation to sales is likely to be low. With all things considered, we have set the internal criteria for water-related changes as "Much higher/lower ±10%". The details of the criteria are as follows: - Much lower (less than -10%), Lower (-10 to -5%), About the same (within ±5%), Higher (+5 to 10%), Much higher (more than +10%)

	Relevance of treatment level to discharge	Volume (megaliters/year)	Comparison of treated volume with previous reporting year	Primary reason for comparison with previous reporting year	% of your sites/facilities/operations this volume applies to	Please explain
Secondary treatment	Relevant	108.97	Higher	Increase/decrease in efficiency	51-60	KT&G's three domestic manufacturing plants (Yeongju, Gwangju, and Gimcheon) and an overseas plant in Indonesia are equipped with their own wastewater treatment plants, where secondary treatment is conducted for the wastewater from the production process before discharging it to third-party destinations. In compliance with legal standards of wastewater quality, we conduct primary treatment to remove sewage, sand, oil, grease, etc. suspended in wastewater using physical and chemical methods, and secondary treatment to remove nutrients such as nitrogen and phosphorus through biological treatment. We regularly conduct water quality tests for the wastewater. In accordance with ISO14001 criteria related to water quality management, we implement tests for about 20 items such as PH and BOD. In the case of overseas operations, we recognize country-specific wastewater regulations and manage the water discharges accordingly. For wastewater treatment that is outsourced to a third party, we review the reports submitted by the contracting company to ensure the water quality meets the legal standards. [Setting Criteria of Change] KT&G has set a target of achieving KRW 10 trillion in sales by 2027, which requires an increase in sales by more than 10% each year, and consequently, an increase in water consumption is also expected. However, given the target of reducing water withdrawals by 20%, the increase in water usage in relation to sales is likely to be low. With all things considered, we have set the internal criteria for water-related changes as "Much higher/lower ±10%". The details of the criteria are as follows: - Much lower (less than -10%), Lower (-10 to -5%), About the same (within ±5%), Higher (+5 to 10%), Much higher (more than +10%)
Primary treatment only	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>	KT&G's four domestic manufacturing plants (Sintanjin 1, Yeongju, Gwangju, and Gimcheon) and its Indonesian plant treat wastewater generated from the production process to the secondary or tertiary stage before discharging it, and provide data on the volume and ratio of water discharges by each treatment stage. For other manufacturing plants, the wastewater treatment is entirely outsourced to third-party companies. None of KT&G's plants equipped with their own wastewater treatment plants treat wastewater only up to the primary stage before discharging it, so "Primary treatment only"is not applicable to KT&G.
Discharge to the natural environment without treatment	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>	KT&G's four domestic manufacturing sites (Sintanjin 1, Yeongju, Gwangju, and Gimcheon) and its Indonesian plant treat wastewater generated during the production of tobacco products to the secondary or tertiary stage before discharging it, and provide data on the amount and rate of discharge separated by treatment stage. For other manufacturing sites, the entire amount is outsourced to a third-party company. KT&G internally manages wastewater quality by applying the 80% level, which is stricter than the domestic legal standard, and does not discharge wastewater into the natural environment without treatment, so this treatment method is not applicable to KT&G.
Discharge to a third party without treatment	Relevant	26	About the same	Increase/decrease in efficiency	11-20	KT&G's two domestic plants (Sintanjin 2 and Cheonan) and two overseas plants (in Russia and Turkey) do not have their own wastewater treatment facilities, so all wastewater from the production process is treated by third-party contractors. We recognize wastewater-related regulations in each country, including domestic ones, and require third-party contractors to manage wastewater in accordance with legal standards. We also review reports submitted by third-party contractors to ensure that water quality meets legal standards. [Setting Criteria of Change] KT&G has set a target of achieving KRW 10 trillion in sales by 2027, which requires an increase in sales by more than 10% each year, and consequently, an increase in water consumption is also expected. However, given the target of reducing water withdrawals by 20%, the increase in water usage in relation to sales is likely to be low. With all things considered, we have set the internal criteria for water-related changes as "Much higher/lower ±10%". The details of the criteria are as follows: - Much lower (less than -10%), Lower (-10 to -5%), About the same (within ±5%), Higher (+5 to 10%), Much higher (more than +10%)
Other	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>	KT&G manages wastewater generated throughout the manufacturing process based on our strict internal standards and does not treat wastewater in any way other than the methods reported in this report.

W1.2k

(W1.2k) Provide details of your organization's emissions of nitrates, phosphates, pesticides, and other priority substances to water in the reporting year.

	Emissions to water in the reporting year (metric tonnes)	Category(ies) of substances included	List the specific substances included	Please explain
Row 1	1.2	Nitrates Phosphates	<Not Applicable>	KT&G's main product, tobacco, are produced from leaf tobacco, and the leaf tobacco crop contains nitrates. Most pollutants are emitted to water during the tobacco production process. According to WRI Water Risk Atlas, none of KT&G's domestic manufacturing sites are adjacent to water-stressed regions, so there are no cases of pollutant emissions taking place in water-stressed regions. In addition, KT&G's domestic manufacturing sites conduct and manage quarterly water quality tests on raw and discharged water for about 20 items, including PH, BOD, and COD, in accordance with the ISO14001 system and internal standards.

W1.3

(W1.3) Provide a figure for your organization's total water withdrawal efficiency.

	Revenue	Total water withdrawal volume (megaliters)	Total water withdrawal efficiency	Anticipated forward trend
Row 1	5851400000000	733.01	7982701463.82723	KT&G is continuously establishing and expanding water recycling facilities with the goal of reducing total domestic water withdrawals by 20% compared to 2020 by 2030. With recycled water in replacement of the existing water sources, it is expected to reduce water consumption and withdrawals, which in turn will increase water withdrawal efficiency.

W-FB1.3/W-AC1.3

(W-FB1.3/W-AC1.3) Do you collect/calculate water intensity for each commodity reported in question W-FB1.1a/W-AC1.1a?

Agricultural commodities	Water intensity information for this produced commodity is collected/calculated	Water intensity information for this sourced commodity is collected/calculated	Please explain
Tobacco	Not applicable	Yes	As the tobacco business depends on water-dependent leaf tobacco as a raw material, it is important to continuously check and monitor the stability of water resources in the supply chain. As part of its Sustainable Tobacco Program (STP) management process, KT&G requests and collects water-related data from its overseas leaf tobacco suppliers, including the volume of water withdrawals used in the leaf tobacco cultivation process (m3) and the amount of leaf tobacco produced (ton). Water intensity is calculated by dividing the volume of water withdrawals used in the leaf tobacco cultivation process (m3) by the amount of leaf tobacco produced (ton). KT&G utilizes the two data sets to calculate the water intensity of each of its leaf tobacco suppliers, and then calculates a final water intensity that reflects each supplier's share of KT&G's total leaf tobacco supply.

W-FB1.3b/W-AC1.3b

(W-FB1.3b/W-AC1.3b) Provide water intensity information for each of the agricultural commodities identified in W-FB1.3/W-AC1.3 that you source.

Agricultural commodities
Tobacco

Water intensity value (m3/denominator)
210.26

Numerator: Water aspect
Total water withdrawals

Denominator
Tons

Comparison with previous reporting year
This is our first year of measurement

Please explain
KT&G calculated its water intensity for the first time in this reporting year. As part of its Sustainable Tobacco Program (STP) management process, KT&G requests and collects water-related data from its overseas leaf tobacco suppliers, including the volume of water withdrawals in the leaf tobacco cultivation process (m3) and the amount of leaf tobacco produced (ton).

Water intensity is calculated by dividing the volume of water withdrawals used in the leaf tobacco cultivation process (m3) by the amount of leaf tobacco produced (ton). KT&G utilizes the two data sets to calculate the water intensity of each of its leaf tobacco suppliers, and then calculates a final water intensity that reflects each supplier's share of KT&G's total leaf tobacco supply.

KT&G uses the internally calculated water intensity to understand the level of irrigation system utilization by country/region in its supply chain and to infer the correlation between water intensity and growth and quality of leaf tobacco to guide its purchasing decisions.

In the short term, if current leaf tobacco farming practices are maintained, water intensity is expected to remain the same or increase as water withdrawals from leaf tobacco cultivation are likely to increase due to rising uncertainty from climate change. However, in the medium to long term, we expect to reduce our overall water intensity by reducing water from the cultivation thanks to the potential development of more efficient farming methods and irrigation systems.

To improve water intensity, KT&G regularly collects and updates the related data from its tobacco supply chain to identify water consumption by each supplier and explore ways to improve it. In cooperation with our major leaf tobacco suppliers, we check if water saving training is delivered to leaf tobacco farmers and provide any support if necessary. In addition, STP(Sustainable Tobacco Program), of which KT&G is a member, trains leaf tobacco farmers in the latest standard farming methods and is working to develop new farming methods and irrigation systems that can be more water efficient than the current ones.

W1.4

(W1.4) Do any of your products contain substances classified as hazardous by a regulatory authority?

	Products contain hazardous substances	Comment
Row 1	No	

W1.5

(W1.5) Do you engage with your value chain on water-related issues?

	Engagement	Primary reason for no engagement	Please explain
Suppliers	Yes	<Not Applicable>	<Not Applicable>
Other value chain partners (e.g., customers)	Yes	<Not Applicable>	<Not Applicable>

W1.5a

(W1.5a) Do you assess your suppliers according to their impact on water security?

Row 1

Assessment of supplier impact

Yes, we assess the impact of our suppliers

Considered in assessment

Basin status (e.g., water stress or access to WASH services)
Supplier dependence on water
Supplier impacts on water availability
Supplier impacts on water quality

Number of suppliers identified as having a substantive impact

64

% of total suppliers identified as having a substantive impact

76-99

Please explain

KT&G conducts ESG assessments that include water security-related items for new and existing suppliers. For regular ESG assessments, a third-party organization conducts an on-site visit after the supplier's self-assessment to verify and evaluate the supplier-provided data according to the ESG Evaluation Indicators Guidelines.

Related to water resources, there are five evaluation items in the environmental section: water and wastewater management regulations, water consumption and discharge measurement and monitoring, business water dependence, and supplier watershed status. We evaluate suppliers' actual impact on water security by comprehensively considering the purchase volume and their responses to the evaluation items. To become a supplier with a substantial impact on water security, a company must pass the evaluation items and a total purchase price must be KRW 100 million or more.

W1.5b

(W1.5b) Do your suppliers have to meet water-related requirements as part of your organization’s purchasing process?

	Suppliers have to meet specific water-related requirements	Comment
Row 1	Yes, water-related requirements are included in our supplier contracts	<Not Applicable>

W1.5c

(W1.5c) Provide details of the water-related requirements that suppliers have to meet as part of your organization's purchasing process, and the compliance measures in place.

Water-related requirement
Setting and monitoring water pollution-related targets

% of suppliers with a substantive impact required to comply with this water-related requirement
100%

% of suppliers with a substantive impact in compliance with this water-related requirement
51-75

Mechanisms for monitoring compliance with this water-related requirement
Off-site third-party audit
Supplier self-assessment

Response to supplier non-compliance with this water-related requirement
Retain and engage

Comment
KT&G requires suppliers to sign the 'KT&G Partner Code of Conduct', which includes water-related requirements, when signing a purchase contract, and the contract is only finalized when the supplier signs it. KT&G conducts regular comprehensive assessments that include ESG items for suppliers that have a substantial impact on water security, and requires them to set and monitor their own targets for water quality management. The regular comprehensive assessment is conducted by suppliers' self-assessment first, followed by an on-site visit by a third-party organization to verify and evaluate the data.

Water-related requirement
Setting and monitoring water withdrawal reduction targets

% of suppliers with a substantive impact required to comply with this water-related requirement
100%

% of suppliers with a substantive impact in compliance with this water-related requirement
51-75

Mechanisms for monitoring compliance with this water-related requirement
Off-site third-party audit
Supplier self-assessment

Response to supplier non-compliance with this water-related requirement
Retain and engage

Comment
KT&G requires suppliers to sign the 'KT&G Partner Code of Conduct', which includes water-related requirements, when signing a purchase contract, and the contract is only finalized when the supplier signs it. KT&G conducts regular comprehensive assessments that include ESG items for suppliers that have a substantial impact on water security, and requires them to set and monitor their own targets for water quality management. The regular comprehensive assessment is conducted by suppliers' self-assessment first, followed by an on-site visit by a third-party organization to verify and evaluate the data.

W1.5d

(W1.5d) Provide details of any other water-related supplier engagement activity.

Type of engagement
Innovation & collaboration

Details of engagement
Educate suppliers about water stewardship and collaboration

% of suppliers by number
76-99

% of suppliers with a substantive impact
100%

Rationale for your engagement
For successful water management cooperation with suppliers, KT&G not only conducts ESG assessments but also provides ESG training that could leverage suppliers' water management competencies. We strive to minimize risks in our supply chain by implementing ESG assessments in both the supplier quality (SQ) evaluation process for selecting new suppliers as well as regular assessments for existing suppliers.

The evaluation gives us a good opportunity to recognize what needs to be improved in the future. Based on the ESG assessments results, we support suppliers in identifying ESG improvement tasks, including water management, and carry out training/consulting activities to strengthen their ESG capabilities. Since 2021, we have also organized ESG workshops for suppliers to understand ESG system changes, manage ESG risks, and enhance synergies across the value chain.

In addition, among 77 direct suppliers, KT&G provides the training to 64 suppliers that have substantial impact on water security and have passed internal criteria (e.g. a total purchase amount of at least KRW 100 million)

Impact of the engagement and measures of success
Through the engagement activities, suppliers are not only informed of the ESG assessment results, but also receive support from KT&G to identify improvements in each evaluation item and are provided with training and consulting as needed. Through this virtuous cycle of training and assessment, KT&G encourages suppliers to effectively strengthen their ESG capabilities, including water management, from which KT&G's ESG goal is expected to be achieved at the same time with the suppliers' improvements identified in line with our mid- and long-term ESG goals.

KT&G's Supplier ESG Evaluation Indicators Guidelines provides scoring criteria and checklists for each evaluation item. Evaluated suppliers are provided with a list of improvement plans based on the evaluation results and on-site reviews. In 2022, the average score for the environment section, including water management, was 84.5 points.

The success of the engagement activities is determined by the average score of the environment section. As there are five evaluation items related to water management included in the environment section, it is useful to see the improvement in water management capabilities. In the case of wastewater, for example, we require each business site to identify wastewater and its characteristics, and to review records of measurement and management activities. If wastewater treatment is outsourced to a third party, we ask them to check the legal qualification (e.g. license) of the third party and the daily volume of discharges (outsourced volume), and assign differential scores accordingly.

Comment

W1.5e

(W1.5e) Provide details of any water-related engagement activity with customers or other value chain partners.

Type of stakeholder
Customers

Type of engagement
Education / information sharing

Details of engagement
Run an engagement campaign to educate stakeholders about the impacts on water that (using) your products, goods, and/or services entail

Rationale for your engagement
Customers are the end consumers of KT&G products, and our growth based on their satisfaction is the essence and purpose of our business activities. At the same time, being in charge of disposal of products after use, customers have a great impact on environmental pollution including water resources. Therefore, KT&G is implementing an engagement activity such as the 'Sseudam Sseudam' campaign together with the customers to cope with global environmental pollution caused by illegal littering of cigarette butts. The catchphrase means "Please throw cigarette butts in a trash bin, not on the street," and the campaign has been carried out since 2020 upon the recommendations of the Sangsang Realization Committee, an internal organization dedicated to corporate culture and ESG improvement.

Impact of the engagement and measures of success
To enhance consumer awareness, KT&G applied the ' Sseudam Sseudam' pictogram to 70 products sold in Korea from May 2021 to 2022. In addition, the company installed campaign signs in 46,000 convenience stores nationwide, and the catchphrase was attached to nearly 1,200 corporate vehicles. All installation and attachment activities involved with the campaign are regularly reported and counted in terms of campaign performance.

In addition to promoting the campaign, KT&G is also working on creating the relevant infrastructure. Focusing on transportation facilities such as airports and train stations, we installed a total of 425 smoking rooms nationwide from 2021 to 2022. We also installed 147 collection boxes for cigarette butts in six major cities across the country, including Seoul and Busan.

KT&G separately calculates the added value created through socio-economic and environmental activities. We invested about KRW 2.7 billion in the 'Sseudam Sseudam' campaign and succeeded in creating about KRW 9.2 billion in environmental value. In calculating environmental value, we reflected monetized value standards based on the latest global research conducted by BCG, S&P, etc.

We plan to install more collection boxes for cigarette butts nationwide and promote various related projects later on, such as the distribution of portable ashtrays.

W2. Business impacts

W2.1

(W2.1) Has your organization experienced any detrimental water-related impacts?

No

W2.2

(W2.2) In the reporting year, was your organization subject to any fines, enforcement orders, and/or other penalties for water-related regulatory violations?

	Water-related regulatory violations	Fines, enforcement orders, and/or other penalties	Comment
Row 1	Yes	Fines, but none that are considered as significant	KT&G monitors changes in water-related laws and regulations every year to keep abreast of the latest amendments, and continuously checks for regulatory violations by assigning each water-elated issue to a dedicated department. For example, in the case of water pollutants, the person in charge of KT&G's business sites shares all measurement results related to pollutants which are stipulated by laws and regulations with the Energy & Environment Department, the dedicated department. In this way, related data is managed in an integrated way while regulatory violations are checked at both business sites and headquarters.

W2.2a

(W2.2a) Provide the total number and financial value of all water-related fines.

Row 1

Total number of fines

1

Total value of fines

3680000

% of total facilities/operations associated

11.1

Number of fines compared to previous reporting year

Higher

Comment

KT&G was awarded a fine for one water-related regulatory violation during the reporting year. The relevant site is the Gwangju manufacturing site.

W3. Procedures

W3.1

(W3.1) Does your organization identify and classify potential water pollutants associated with its activities that could have a detrimental impact on water ecosystems or human health?

	Identification and classification of potential water pollutants	How potential water pollutants are identified and classified	Please explain
Row 1	Yes, we identify and classify our potential water pollutants	We recognize the importance of managing potential water pollutants generated in the process of cigarette production, and wastewater from our plants is treated in compliance with the law. We also continuously monitor relevant laws and amendments. We apply internal standards that are stricter than the law in consideration of the impact in the region where our business sites are located. For the Sintanjin plant, we keep our internal water quality management standards very strict, such as applying the permission level at 80% of the national legal standards. We evaluate compliance with standards related to water pollutants through global management systems such as ISO14001, and conduct water quality tests that include 20 items such as PH, BOD, and COD. Currently, five plants in Korea have obtained and maintained ISO14001 certification. Due to the nature of the industry, water pollution is likely to happen from fertilizers and pesticides used by suppliers in cultivation of leaf tobacco. In response, we apply stringent agricultural standards to farmers through the Korea Tobacco Grower Organization and supply only designated types of fertilizers for each crop type every year in consideration of water pollutants. In 2022, we joined the Global Leaf Tobacco Initiative's Sustainable Tobacco Program to strengthen our management of leaf tobacco farmers through supplier risk assessments and on-site inspections that consider water pollutants.	<Not Applicable>

W3.1a

(W3.1a) Describe how your organization minimizes the adverse impacts of potential water pollutants on water ecosystems or human health associated with your activities.

Water pollutant category
Inorganic pollutants

Description of water pollutant and potential impacts
As a raw material, leaf tobacco is essential in production of KT&G's major product, cigarettes. In the process of cultivating leaf tobacco, inorganic fertilizers that belong to inorganic pollutants may be used. If inorganic fertilizers are abused, they can adversely affect the soil around the farms, causing accumulation of salts and acidification of the soil. In addition, water in contact with inorganic pollutants such as potassium chloride and lime carbonate can flow into adjacent river basins and contaminate water sources. Contaminated water sources have potentially negative impacts not only on nature, but also on human health, including the agricultural population.

Value chain stage
Supply chain

Actions and procedures to minimize adverse impacts
Requirement for suppliers to comply with regulatory requirements

Please explain
Through the Korea Tobacco Growers Association (KTGO), KT&G applies strict agricultural standards to tobacco farmers in Korea and supplies all leaf tobacco farms with designated types of fertilizers for each crop type, considering the impact of potential water pollutants. We also monitor and manage the use of suitable compound fertilizers and by-product fertilizers in accordance with STP standards, and prohibit the use of commercially-available general compound fertilizers and livestock manure. KT&G collects the types and amounts of fertilizers used by farmers every year to measure the use of non-compliant fertilizers by leaf tobacco farmers, and evaluates whether the collected fertilizers are compliant with regulations.

Water pollutant category
Pesticides

Description of water pollutant and potential impacts
As a raw material, leaf tobacco is essential in production of KT&G's major product, cigarettes. During the process of cultivating leaf tobacco, pesticides are used to eliminate pests that hinder the growth of the crop. The pesticides containing harmful ingredients, such as perfluorinated compounds, can cause serious health problems such as cancer, thyroid disease, kidney dysfunction, and autoimmune diseases in people living near agricultural areas, not only confined to soil contamination. In particular, perfluorinated compounds do not degrade naturally forever, so they can have long-term adverse effects.

Value chain stage
Supply chain

Actions and procedures to minimize adverse impacts
Requirement for suppliers to comply with regulatory requirements

Please explain
Through the Korea Tobacco Growers Association (KTGO), KT&G imposes strict regulations for the use of pesticides on domestic tobacco farmers to prevent potential adverse environmental impacts, such as water pollution caused by hazardous chemicals contained in pesticides. Every year, we supply low-toxicity pesticides and KTGO-approved crop protection agents (CPAs) to all tobacco farms, and further, we even manage the disposal of pesticide packaging materials to ensure that pesticide residues do not cause soil contamination. We also use the list of pesticides and fungicides specified in the STP as a reference, and the list is updated annually. To prevent adverse environmental impacts from pesticides, KT&G manages to ensure that only pesticides that meet the standards for use between leaf tobacco production are used, and evaluates whether the pesticides used are in compliance with KTGO and STP regulations.

Water pollutant category
Other physical pollutants

Description of water pollutant and potential impacts
KT&G manufacturing sites produce cigarettes from leaf tobacco as the raw material, and wastewater is generated from the production process. The wastewater contains a lot of organic or suspended solids. If the pollutants flow into the neighboring river basin without proper treatment, water sources will be contaminated, which leads to adverse impact on the aquatic ecosystem including plants, fish, and amphibians living in the watershed.

Value chain stage
Direct operations

Actions and procedures to minimize adverse impacts
Beyond compliance with regulatory requirements

Please explain
To prevent potential water pollutants from wastewater, KT&G strictly complies with the legal standards for water quality in each country where its manufacturing sites are located. We continuously monitor relevant laws and amendments that must be complied with in the tobacco business, while applying internal management standards that are stricter than the law, considering the impact in each country or region where the business is located. For the Sintanjin plant, we keep our internal water quality management standards more stricter than the law, such as applying the permission level at 80% of the national legal level. We also evaluate compliance with water pollution-related standards through global management systems such as ISO14001, and conduct water quality tests that include about 20 items including PH, BOD, and COD. Currently, five domestic plants have obtained and maintained ISO14001 certifications.

W3.3

(W3.3) Does your organization undertake a water-related risk assessment?
Yes, water-related risks are assessed

W3.3a

(W3.3a) Select the options that best describe your procedures for identifying and assessing water-related risks.

Value chain stage
Direct operations
Supply chain

Coverage
Full

Risk assessment procedure
Water risks are assessed as part of an established enterprise risk management framework

Frequency of assessment
Annually

How far into the future are risks considered?
More than 6 years

Type of tools and methods used
Tools on the market
International methodologies and standards
Other

Tools and methods used
WRI Aqueduct
ISO 14001 Environmental Management Standard
Internal company methods

Contextual issues considered
Water availability at a basin/catchment level
Water quality at a basin/catchment level
Impact on human health
Water regulatory frameworks
Status of ecosystems and habitats
Access to fully-functioning, safely managed WASH services for all employees

Stakeholders considered
Customers
Employees
Investors
Local communities
Regulators
Suppliers

Comment
KT&G has conducted an assessment for all direct operations to be aligned with the TCFD recommendations based on its corporate risk management framework.

W3.3b

(W3.3b) Describe your organization's process for identifying, assessing, and responding to water-related risks within your direct operations and other stages of your value chain.

	Rationale for approach to risk assessment	Explanation of contextual issues considered	Explanation of stakeholders considered	Decision-making process for risk response
Row 1	KT&G is conducting water-related risk assessments for its direct operations and suppliers, but not yet for product use stages, where variables vary widely. All nine domestic and overseas sites are being assessed, and main suppliers that have a material impact on KT&G's financial status are being assessed for water risks. We use the WRI Aqueduct Tool to analyze water risk, and in 2022, we conducted the analysis for a total of 38 business sites(Based on region: 43 sites), including manufacturing plants, overseas leaf tobacco farms, and domestic core material suppliers. To determine water-stressed regions, we analyzed baseline water stress and baseline water depletion indicators, and our business site in Turkey was assessed as a water-stressed region. We systematically identify, evaluate, and manage the environmental impact of our business through the ISO14001 system, and five business sites in Korea have obtained and maintained the certification. In accordance with the Energy and Environment Business Site Guidelines, we apply internal management standards stricter than the law. For the Sintanjin plant, we keep our internal standards more stricter than the law, such as applying the permission level at 80% of the national legal level. KT&G defines risks with a financial impact on the company of KRW 100 million or more as substantial financial or strategic impacts. This amount is equivalent to 0.002% of the company's sales in 2022.	Water availability is managed as an important item as it directly affects the quality of tobacco products as well as raw material suppliers such as tobacco farms. Tobacco farms are located in various regions across the country, and water availability varies depending on the characteristics of the local watershed. The water quality of a watershed is closely linked to the country and local communities, so it is very important to include water quality issues in the risk assessment. A certain level of water quality is required for water used in production and business operations. We have obtained and steadily maintained ISO14001 certification, the global environmental management system, which includes water-related assessment. We have also begun preparations to obtain a certification from Alliance for Water Stewardship (AWS), the most recognized certification in the field of water resources worldwide. With the goal of obtaining the certification for Yeongju plant in 2024, we aim to acquire the certification for all operations. To prevent adverse effects on ecosystems and human health, we dispose of potential water pollutants discharged from chemical fertilizers and pesticides used in the tobacco production process in accordance with relevant laws and regulations and continuously keep abreast of relevant amendments. We also include WASH service (e.g. drinking water, sanitation) in our internal water risk management items.	As customer requirements on ESG issues are directly related to sales, we always include them in our risk assessment and operate various communication channels to listen to customers' voices. KT&G recognizes that employees' commitment is key to ESG performance, and our water-related internal standards, the Energy and Environment Guidelines, stipulate that employees can realize water-related opportunities. Failures to meet investors' expectations could create negative financial risks. Investors are demanding activities to reduce the adverse impacts of climate change, and KT&G communicates with the stakeholders in various channels, including submitting TCFD reports and participating in CDP. As the worst water risks usually involve violations of laws and regulations, regulators are considered as our stakeholders. Our domestic plants monitor water quality at a level stricter than the law, and we have obtained and maintained global environmental management system certifications such as ISO 14001 and ISO 45001. The supply chain is a key stakeholder in achieving our ESG goals. We regularly engage with our supply chain to gather their feedback and work on building their awareness of water-related issues. Water-related issues also affect local communities that share watersheds. For example, the use of pesticides with unsuitable ingredients can go beyond soil contamination and cause serious health problems for residents near the farming areas.	The results of the WRI water risk analysis and water-related risks identified from VOCs are reflected in the corporate management strategy. We have included water management as a core element in terms of our company-wide ESG management strategy and environmental management policy, and have established related goals and detailed action plans. The water resource action plans, such as water withdrawals reduction, water efficiency enhancement, and wastewater quality improvement, are included in the ESG management strategy and the environmental management policy. The ESG Planning Team regularly reports climate change issues and strategies, including water resources, to the COO. In accordance with the remuneration policy, we comprehensively evaluate quantitative and qualitative ESG performance and provide incentives ranging from 0% to 255% of the annual base salary to internal directors, including the CEO. For the CEO, in particular, a fixed percentage is reflected in the overall KPIs by averaging the evaluation results of a total of three reputable climate change and water management evaluation organizations, including CDP Water Security. In this way, we have established an ESG evaluation reward system that automatically links high incentives to successful water management performance such as water withdrawals and water consumption reduction.

W4. Risks and opportunities

W4.1

(W4.1) Have you identified any inherent water-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes, both in direct operations and the rest of our value chain

W4.1a

(W4.1a) How does your organization define substantive financial or strategic impact on your business?

In the process of assessing materiality of impact from an issue, KT&G evaluates business materiality, stakeholder materiality, and value chain impact and derives priorities and sets management direction accordingly. Business materiality refers to the impact on the company's revenue, costs, reputation, and regulatory compliances, while stakeholder materiality encompasses key stakeholders such as customers, investors, employees, suppliers, and governments, and is derived by analyzing their perceived importance and interest. Value chain impact is derived by assessing the impact of each issue on social, economic, and environmental performance in terms of the business value chain.

Based on this materiality assessment, climate change response activities are categorized as one of KT&G's core issues. In detail, we evaluate the impact materiality of the climate change risks on our business based on financial impact and likelihood, and manage the risks categorized and identified through this process. The assessment of ESG issues are reported to the BOD by the COO. In accordance with the company-wide delegation guidelines and procurement regulations, the risks with a potential financial impact worth of KRW 100 million or more are defined as substantial financial or strategic impacts on our business. This amount is equivalent to 0.002% of the sales revenue in 2022.

W4.1b

(W4.1b) What is the total number of facilities exposed to water risks with the potential to have a substantive financial or strategic impact on your business, and what proportion of your company-wide facilities does this represent?

	Total number of facilities exposed to water risk	% company-wide facilities this represents	Comment
Row 1	3	26-50	KT&G has a total of nine facilities, including six manufacturing facilities in Korea (Sintanjin 1, Sintanjin 2, Yeongju, Gwangju, Cheonan, and Gimcheon) and one each in Indonesia, Russia, and Turkey, of which three facilities (Sintanjin 1, Indonesia, and Turkey) are exposed to water risks. According to WRI water risk analysis, the facilities located in Indonesia and Turkey were identified as exposed to potential water risks, with a risk level of "High" or higher in terms of water quality and a financial impact on KT&G exceeding KRW 100 million. In addition, while the overall water risk level of KT&G's domestic manufacturing sites is 'Low to Medium', the water stress index is higher than this at 'Medium to High'. Given the relatively high financial and water consumption share of the Sintanjin 1 plant out of the total domestic sites, the Sintanjin 1 plant was also determined to be exposed to potential water risks.

W4.1c

(W4.1c) By river basin, what is the number and proportion of facilities exposed to water risks that could have a substantive financial or strategic impact on your business, and what is the potential business impact associated with those facilities?

Country/Area & River basin

Republic of Korea	Other, please specify (South Korea Coast 1)

Number of facilities exposed to water risk
1

% company-wide facilities this represents
1-25

Production value for the metals & mining activities associated with these facilities
<Not Applicable>

% company's annual electricity generation that could be affected by these facilities
<Not Applicable>

% company's global oil & gas production volume that could be affected by these facilities
<Not Applicable>

% company's total global revenue that could be affected
41-50

Comment
According to the WRI Water Risk Analysis, the level of water risks exposed to Sintanjin 1 was identified to be low to medium, while the water stress index, a more specific indicator, was found to be at a higher level, medium to high. Given the share of revenue (45%) and water withdrawals (33%) of the Sintanjin 1 plant in KT&G's tobacco business, a continuous increase in the water stress index could have a substantive financial impact.

Country/Area & River basin

Indonesia	Other, please specify (Cisadane)

Number of facilities exposed to water risk
1

% company-wide facilities this represents
1-25

Production value for the metals & mining activities associated with these facilities
<Not Applicable>

% company's annual electricity generation that could be affected by these facilities
<Not Applicable>

% company's global oil & gas production volume that could be affected by these facilities
<Not Applicable>

% company's total global revenue that could be affected
1-10

Comment
According to the WRI Water Risk Analysis, the level of water risks exposed to our operations in Indonesia was assessed to be medium to high, with water quality risks being particularly high at 4.54 (High). The sales volume that can be affected in the event of a water risk is approximately KRW 350 billion, which significantly exceeds KT&G's internal threshold of KRW 100 million for material impact.

Country/Area & River basin

Turkey	Other, please specify (Gediz River)

Number of facilities exposed to water risk
1

% company-wide facilities this represents
1-25

Production value for the metals & mining activities associated with these facilities
<Not Applicable>

% company's annual electricity generation that could be affected by these facilities
<Not Applicable>

% company's global oil & gas production volume that could be affected by these facilities
<Not Applicable>

% company's total global revenue that could be affected
1-10

Comment
According to the WRI Water Risk Analysis, the level of water risks exposed to our operations in Turkey was medium to high, with the water quality risks being particularly high at 4.72 (Extremely High). The sales volume that could be affected in the event of a water risk is approximately KRW 25 billion, which significantly exceeds KT&G's internal threshold of 100 million for material impact.

W4.2

(W4.2) Provide details of identified risks in your direct operations with the potential to have a substantive financial or strategic impact on your business, and your response to those risks.

Country/Area & River basin

Republic of Korea	Other, please specify (South Korea Coast 1)

Type of risk & Primary risk driver

Chronic physical	Water stress

Primary potential impact
Increased operating costs

Company-specific description
Sintanjin plant is KT&G's largest manufacturing site. According to the WRI Water Risk Analysis conducted in 2022, the water stress index for the Sintanjin plant was identified as Medium to High. In the WRI Water Risk Analysis, water stress measures the ratio of total water withdrawals to available surface and groundwater supplies, and the higher the index, the higher the competition among water users in the basin. In fact, given the current location of the Sintanjin plant, where not only KT&G but also a number of industrial complexes and manufacturing plants are concentrated, any increase in water withdrawals by other neighboring plants would impose a water risk to KT&G.

Furthermore, given the large contribution of the Sintanjin plant to KT&G, the magnitude of the negative impact of water risks at the Sintanjin plant on KT&G's tobacco business is significant. In addition, the water stress index is likely to continue to increase, with the risk of "chronic water scarcity" in 2030 increasing by 0.43 points compared to 2025 in the climate change scenario analysis based on a 4.0°C scenario. Increased water withdrawals in certain basins will lead to water rate increases by the municipalities that take into account the water balance in the basin. Since the majority of the water withdrawals used by the Sintanjin plant consists of tap water (municipal water) supplied by the official municipality rather than groundwater, the increase in water rates will lead to an increase in the direct operating costs of the operations.

In addition, if the Sintanjin plant increases production by 5-15% in the future, it is likely that water withdrawals will increase in proportion to production if no action is taken. In this case, not only the cost of water supply will increase, but also the operating expenses (OPEX) for wastewater treatment will increase, thus leading to higher operating costs for the entire process of water withdrawal and discharge.

Timeframe
More than 6 years

Magnitude of potential impact
Medium

Likelihood
Likely

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure - minimum (currency)
37080735

Potential financial impact figure - maximum (currency)
111242205

Explanation of financial impact
The majority of the Sintanjin plant's water withdrawal consists of municipal water, and any increase in water consumption or increase in water rates will result in an increase in direct operating costs for the Sintanjin plant. If the Sintanjin plant increases production by 5-15% in the future, it is likely that water withdrawals will increase in proportion to production if no action is taken. In this case, not only will water costs increase due to increased water withdrawals, but also wastewater treatment operating expenses (OPEX) will rise, leading to higher operating costs for the entire water intake and discharge process.

As of 2022, the total water withdrawals of the Sintanjin plant is 238,103 tons and the water price is KRW 1,866/ton.
We assumed that the increase in water consumption would be proportional to the increase in production, and we applied the same logic to the wastewater to be treated.
The year of financial impact was set to 2030, eight years after the reporting year, and the 2030 Climate Change Scenario Analysis was considered in this process.

- Potential financial impact (minimum): Increase in municipal water consumption due to increased production * 5% * Municipal water price + Operating expenses per ton of wastewater treatment in 2022 (OPEX/ton) * Production (tons) * 5%.
- Potential financial impact (maximum): Increased municipal water consumption due to increased production * 15% * Municipal water price + Operating expenses per ton of wastewater treatment in 2022 (OPEX/ton) * Production (tons) * 15%.

Primary response to risk
Adopt water efficiency, water reuse, recycling and conservation practices

Description of response
In an effort to cope with the risk of water stress at the Sintanjin plant, KT&G is promoting activities to improve internal water use efficiency, reuse and recycle water, and conserve water. Increased water withdrawals from water-stressed regions and the resulting increase in overall operating costs are identified as water-related risks facing the Sintanjin plant, and to effectively respond to them, the operation needs to reduce the total water withdrawals through its own water-related targets and activities.

Activities to reduce water withdrawals are ongoing and we aim to reduce total water withdrawals by 20% by 2030 compared to 2020, even if production growth occurs. We are currently examining ways to utilize reused wastewater for cleaning dehydrators and dissolving chemicals, and have already completed replacement of water pipes and check valves for cooling water pumps to increase recovery rate of boiler condensate water. In addition, we have successfully developed a new high-pressure washer that minimizes water and energy use and time loss, through which we expect to effectively reduce water consumption in the future.

Among all water-related topics, water saving may be the easiest one for the internal employees to approach and come up with ideas for. KT&G has established an internal knowledge management system so that all employees can freely contribute their ideas. We gather employees' ideas on reducing water consumption, and plan to select the best ideas in consideration of future financial effects.

KT&G believes that through these activities, we can effectively respond to the risk of water stress. Increased water efficiency and water reuse will reduce the water withdrawals from the municipal water supplies, and given that the extent of water withdrawal is linked to water dependency, it is likely that the Sintanjin plant's water dependence will decrease in the future.

Cost of response
624900000

Explanation of cost of response
In response to the risk of water stress at the Sintanjin Plant, KT&G has been carrying out various activities for water use efficiency improvement, water recycling and conservation. There has been a significant amount of water consumed in the process of washing parts, and the development and introduction of a new automated washing device (21 units) have shown that water use can be reduced by 97% compared to the previous one. Although the initial investment cost is relatively high for the new high-pressure washers, it was found that the initial cost can be recovered within six years once in use, which is in line with our goal of reducing water consumption by 20% in 2030. In addition, we are collecting ideas for reducing water consumption from all KT&G employees using the internal knowledge management system, and plan to select and utilize best water-saving ideas in consideration of financial effects.

In conclusion, the total cost of the response activities in 2022 was KRW 624,900,000, and the details are as follows.
- Installation of new high-pressure washers to reduce water usage: KRW 616,000,000 (21 units newly installed)
- Replacement of pump equipments to increase water recovery rate: KRW 8,900,000
- Development costs of KT&G's internal knowledge management system: KRW 0 (utilizing the existing internal system)

Country/Area & River basin

Indonesia	Other, please specify (Cisadane)

Type of risk & Primary risk driver

Acute physical	Flood (coastal, fluvial, pluvial, groundwater)

Primary potential impact
Reduction or disruption in production capacity

Company-specific description
Acute physical risks such as floods negatively impact our business operations by causing delays in the production of tobacco products, difficulties in the logistics and transportation of finished products, and increased operating costs due to supply chain disruptions, and the resulting increase in direct and indirect costs lead to decrease of sales revenue.

Timeframe
4-6 years

Magnitude of potential impact
Medium-low

Likelihood
More likely than not

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure - minimum (currency)
<Not Applicable>

Potential financial impact figure - maximum (currency)
<Not Applicable>

Explanation of financial impact
We have not specifically identified the potential financial impact of reduced capacity at our Indonesian plant.

Primary response to risk
Develop flood emergency plans

Description of response
By establishing flood emergency plans for the sites exposed to flood risk at its manufacturing sites in Indonesia, KT&G plans to provide emergency measures to prevent or mitigate negative impacts in the event of an actual flood. We will also continuously work on infrastructure maintenance in response to flood risks and provide consulting to help prevent major damages from sudden production disruptions.

Cost of response

Explanation of cost of response

Country/Area & River basin

Turkey	Other, please specify (Gediz River)

Type of risk & Primary risk driver

Acute physical	Drought

Primary potential impact
Reduction or disruption in production capacity

Company-specific description
In the event of an acute physical risk, such as a drought in the region, operating costs will increase due to delays in water withdrawal from external suppliers. In addition, in the event of drought, water supply is likely to be delayed more than expected due to the lower priority of manufacturing facilities compared to households and public buildings. Delays in water supplies will lead to production disruptions, which will reduce operating profit with increased direct and indirect costs.

Timeframe
4-6 years

Magnitude of potential impact
Medium-low

Likelihood
More likely than not

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure - minimum (currency)
<Not Applicable>

Potential financial impact figure - maximum (currency)
<Not Applicable>

Explanation of financial impact
We have not specifically identified the potential financial impact of reduced capacity at our turkish plant.

Primary response to risk
Adopt water efficiency, water reuse, recycling and conservation practices

Description of response
KT&G plans to increase investment in water reuse and recycling processes in response to acute drought for operations in Turkey and is considering installing devices that can use alternative water sources (rainwater, graywater) in water-scarce regions. In recognition that there are several alternative water sources around our manufacturing sites in Turkey, we plan to prepare and train employees to utilize them in the event of an emergency where groundwater is not available due to drought.

Cost of response

Explanation of cost of response

W4.2a

(W4.2a) Provide details of risks identified within your value chain (beyond direct operations) with the potential to have a substantive financial or strategic impact on your business, and your response to those risks.

Country/Area & River basin

India	Ganges - Brahmaputra

Stage of value chain
Supply chain

Type of risk & Primary risk driver

Chronic physical	Water stress

Primary potential impact
Increased production costs due to changing input prices from supplier

Company-specific description
Leaf tobacco, the raw material for KT&G's main product, tobacco, is a delicate crop that is divided into four stages: lower leaves, middle leaves, main leaves, and upper leaves, and can be affected by even small changes in climate conditions such as changes in precipitation and temperature. Stable production and quality are guaranteed when leaf tobacco is grown with sufficient amounts of quality water, and the quality of the final product, tobacco, is also greatly affected by the quality of raw materials procured from the supply chain. In other words, one of the success factors of KT&G's tobacco business, which is its main business, is the stable supply of high-quality leaf tobacco from the supply chain.

KT&G sources leaf tobacco from a total of 22 overseas countries. Representative leaf tobacco procurement countries include India, Malawi, Brazil, and Tanzania. However, according to the WRI Water Risk Analysis conducted in 2022, the Water Stress Index for India, a major leaf tobacco sourcing country, was identified as High. In the WRI Water Risk Analysis, the Water Stress Index measures the ratio of total water withdrawals to available water (surface water & groundwater). A high index indicates that there may be high competition for water resources among farms & manufacturers in the same watershed.

The high water stress index in India has the potential to make it more difficult for leaf tobacco growers to access adequate amounts of water and quality, which could negatively impact yield and quality of leaf tobacco. Fortunately, the majority of leaf tobacco cultivation in KT&G's Indian supply chain is based on natural rainfall, and we have not experienced a significant reduction in production due to water stress. However, KT&G has assumed that the water stress index in India, which is currently high, could increase over the next one to three years, which could adversely affect our business.

Timeframe
1-3 years

Magnitude of potential impact
Medium-high

Likelihood
Unlikely

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure - minimum (currency)
627666435

Potential financial impact figure - maximum (currency)
1255332870

Explanation of financial impact
The potential financial impact was calculated by assuming that leaf tobacco sourced from India would need to be urgently replaced from other sources, with two scenarios based on the severity of water stress: 10% of India's supply would need to be replaced and 20% would need to be replaced. We also assumed that the current high level of water stress would increase further in the next 1-3 years.

Emergency alternative procurement is likely to result in higher leaf tobacco prices compared to normal procurement due to the supplier's greater bargaining power. In addition, the tobacco industry typically sees spikes in global fertilizer and grain prices that are reflected in leaf tobacco prices one to two years later. Given the recent increase in fertilizer and grain prices, we expect a strong increase in global leaf tobacco prices over the next three years, with the possibility that the price increase from emergency procurement could be even higher. In addition, freight and import tariffs may also increase depending on the location of the alternative source, but we have excluded this from our calculations as the opposite is also possible.

*Since the procurement cost is confidential, we cannot mention the exact figure, so we have arbitrarily reflected a figure within ±20% of the cost.

- Potential financial impact (minimum): Average foreign leaf tobacco procurement cost in 2022 (per kg) * Estimated price increase rate due to emergency procurement (refer to Estimated Increase in Global Leaf Tobacco Price) * 10% of supplies from India in 2022
- Potential financial impact (maximum): Average foreign leaf tobacco procurement cost in 2022 (per kg) * Estimated price increase rate due to emergency procurement (refer to Estimated Increase in Global Leaf Tobacco Price) * 20% of supplies from India in 2022

Primary response to risk

Upstream	Increase supplier diversification

Description of response
The risk of water stress due to climate change can affect the production and cost of agricultural raw materials, and leaf tobacco is a delicate crop that can be greatly affected by even small changes in climate conditions, such as changes in precipitation and temperature. Therefore, a high dependence on a particular country/region for leaf tobacco sourcing has the potential to significantly compromise supply chain stability even in the event of localized climate change. Therefore, proactive responses to these potential supply chain risks are likely to be positive for the future stability of the tobacco business.

To respond to supply chain risks, KT&G sources leaf tobacco from a variety of countries and regions, and is continuously working to expand the diversity of its supply chain. We are also continuously monitoring various changes in the supply environment, including global climate change. Through a series of response activities, KT&G is mitigating its supply chain dependence on a specific country/region and effectively responding to water stress risks that may arise in the future, including the next 1-3 years, to enhance the resilience of the entire organization to water risks.

Cost of response
200000000

Explanation of cost of response
To respond to supply chain risks, KT&G monitors the price of raw materials such as global fertilizer prices and the climate change situation, and is continuously promoting 'supply chain diversification' to stably procure leaf tobacco from multiple countries/regions. We do not incur any response costs in the new contract process, and the total cost of purchasing leaf tobacco varies annually depending on the proportion of the leaf tobacco supply portfolio.

We are conducting climate change scenario analysis and WRI water risk analysis to predict global climate change risks and identify water risk areas, and refer to them in the process of expanding supply chain diversity. This process is being conducted as part of a comprehensive climate change & water management consulting and is supported by an external consulting firm specializing in climate change. The total cost of consulting services is approximately KRW 200,000,000. The climate change scenario analysis and WRI water risk analysis will be conducted annually.

W4.3

(W4.3) Have you identified any water-related opportunities with the potential to have a substantive financial or strategic impact on your business?
Yes, we have identified opportunities, and some/all are being realized

W4.3a

(W4.3a) Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business.

Type of opportunity
Efficiency

Primary water-related opportunity
Water recovery from sewage management

Company-specific description & strategy to realize opportunity
KT&G aims to reduce the water withdrawal at its domestic and overseas manufacturing sites by enhancing water recovery and reuse through effective sewage management. Water is an essential resource for KT&G to grow high-quality tobacco crops and produce tobacco products. To produce cigarettes, tobacco processing is required to moisturize the tobacco and then dry it. Properly controlling the moisture content in the tobacco has a decisive impact on the quality of the product, and a sufficient amount of water is required to perform this task reliably. As a result, the lack of sufficient water can seriously disrupt the business. Given this, enhancing water recovery and reuse through sewage management is a great opportunity to reduce the overall water dependence of the tobacco business, beyond simply minimizing water costs.

KT&G has established an environmental budget of KRW 10.1 billion by 2024, including expanding water recovery and reuse, and is implementing targeted activities in accordance with its annual financial plan. For the four domestic manufacturing sites that operate their own wastewater treatment plants, we are considering reusing purified wastewater from the treatment plants for cleaning dehydrators and dissolving chemicals. We analyze water consumption volume by use and carry out various activities to recover and save water based on the analysis.

As a result of analyzing water consumption by use, we identified opportunities to save water for sanitation and washing. Therefore, we replaced existing equipment with water-saving faucets and showerheads to save water used in shower facilities, toilets, and washrooms. We also improved water infrastructure by reducing the volume of toilet cisterns to save flushing water, which resulted in reductions ranging from 15 to 67% depending on the site. For wastewater reuse, we replaced pipes and cooling water pump check valves to increase the recovery rate of boiler condensate water. In 2022, we completed the application for a change in the wastewater license of the business site and will continue to improve pumps and piping facilities.

The benefits of expanding water recovery and reuse are not limited to a specific site, but apply to all nine manufacturing sites. It is also a great opportunity to reduce water dependence across operations, beyond reduced water costs and wastewater operating costs.

Estimated timeframe for realization
1 to 3 years

Magnitude of potential financial impact
Medium

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
14290666

Potential financial impact figure – maximum (currency)
134204976

Explanation of financial impact
The benefits of expanding water recovery and reuse are applied to all nine domestic and overseas manufacturing sites, and the potential financial impact is calculated depending on availability of additional reuse or recycling facilities. According to the internal analysis for each site, 7,759 tons of water can be recycled annually without additional reuse/recycling facilities, and 59,528 tons with additional facilities (Sintanjin, Yeongju, and Gwangju). Considering the installation period of reuse/recycling facilities, the financial impact is estimated to be realized for one to three years and may vary depending on the size of the business site.

The financial impact was calculated by applying the average price of municipal water supply to the estimated water reuse volume, and is analyzed to be a minimum of about KRW 14 million and a maximum of about KRW 130 million.

- Potential financial impact (minimum): Water reuse volume without additional reuse/recycling facilities * Municipal water price
- Potential financial impact (maximum): Water reuse volume with additional reuse/recycling facilities installed * Municipal water price

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Type of opportunity
Resilience

Primary water-related opportunity
Increased supply chain resilience

Company-specific description & strategy to realize opportunity
Stable supply of high-quality leaf tobacco is a critical factor for KT&G's tobacco business. The tobacco industry is also particularly sensitive to physical risks such as typhoons and changes in rainfall compared to other industries.

Water is a key resource used in the entire process of cultivation and drying for leaf tobacco suppliers, so it is crucial for the supply chain business to be able to flexibly respond to various future climate changes and their impact on the water environment. Making our supply chain more resilient is a goal that will take more than six years to accomplish, and improving the resilience of our supply chain will not only support the continued and stable growth of KT&G's tobacco business, but also provide us with ample opportunity to take a leadership position in the industry in the future.

To improve the resilience of its supply chain, KT&G utilizes a data-driven approach. Every year, we conduct an ESG assessment on water-related issues for our suppliers, which is conducted through a self-assessment by the supplier followed by an on-site visit by a third-party organization to verify and evaluate the supplier's data according to the guidelines of the assessment indicators. The assessment includes five items related to water resources, including water and wastewater management regulations, water usage and wastewater discharge measurement management, and business water dependence. We also consider the impact of improving the resilience of the supply chain on KT&G by referring to the purchase size of each supplier.

As part of the assessment, water data is collected on leaf tobacco suppliers and farms, and customized support is provided using the collected water data. STP(Sustainable Tobacco Program), of which KT&G is a member, trains leaf tobacco farmers in the latest standard farming methods and is working to develop new farming methods and irrigation systems that can be more water efficient than the current ones.

We also share and educate our suppliers on the results of climate change scenario analysis and WRI water risk analysis to improve their understanding of climate change and water-related situations. For the 2022 climate change scenario analysis, we utilized the RCP 8.5 model, which assumes a temperature increase of more than 4℃. KT&G plans to enhance the business resilience of its leaf tobacco supply chain through a series of strategic activities.

Estimated timeframe for realization

More than 6 years

Magnitude of potential financial impact
Medium

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact
A stable supply of high-quality leaf tobacco is critical to KT&G's tobacco business, so improving the resilience of the supply chain will help ensure the continued and stable growth of KT&G's tobacco business. However, the future financial impact of improving the resilience of the supply chain depends on future business conditions and unforeseen climate change events, so it is not easy to make a reasonable estimate at this time.

Type of opportunity
Resilience

Primary water-related opportunity
Resilience to future regulatory changes

Company-specific description & strategy to realize opportunity
The tobacco industry is subject to frequent regulatory changes due to its significant impact on the environment and human health, and the impact of regulatory changes on the business is significant. In particular, as ESG management, including environmental management, has become a capital investment principle of domestic and foreign investment institutions such as BlackRock, the world's largest investment institution, it has become more important to respond to ESG regulations such as climate change response and water resource management. Therefore, anticipating regulatory changes and responding well to them as a company can be a great opportunity for KT&G's business success, and since the changes in regulations are frequent and the timing of changes is uncertain, we are focusing on increasing our resilience in the next 1-3 years.

To enhance resilience to regulatory changes, KT&G monitors domestic macro policy changes such as the National Carbon Neutrality and Green Growth Basic Plan, as well as global policies and trends such as the EU CBAM and TCFD. We also strive to proactively respond to regulatory changes by predicting likely future situations by intensity of transition risks (such as rising carbon prices, emergence of new regulations, and legal risks) through scenario analysis.

At the same time, we provide training/consulting to suppliers in KT&G's business value chain to adapt to regulatory changes and predict future conditions. We share the results of climate change scenario analysis and WRI water risk analysis with our suppliers, and since 2021, we have also planned and conducted ESG workshops to understand ESG regulatory changes, manage ESG risks, and enhance synergy between value chains. Through a series of strategic activities, KT&G will rationally predict upcoming regulatory changes and successfully respond to regulatory changes that occur.

Estimated timeframe for realization
1 to 3 years

Magnitude of potential financial impact
Medium

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact
Anticipating ESG regulatory changes related to the tobacco industry and responding well to regulatory changes across the organization is critical to KT&G's tobacco business. However, the financial impact of increasing resilience to regulatory changes is difficult to estimate at a reasonable level at this time because it depends on future global regulatory trends and the unforeseen climate change conditions that underlie such regulations.

W5. Facility-level water accounting

W5.1

(W5.1) For each facility referenced in W4.1c, provide coordinates, water accounting data, and a comparison with the previous reporting year.

Facility reference number
Facility 1

Facility name (optional)
Sintanjin 1

Country/Area & River basin

Republic of Korea	Other, please specify (South Korea Coast 1)

Latitude
36.43379

Longitude
127.42993

Located in area with water stress
No

Primary power generation source for your electricity generation at this facility
<Not Applicable>

Oil & gas sector business division
<Not Applicable>

Total water withdrawals at this facility (megaliters/year)
238.1

Comparison of total withdrawals with previous reporting year
About the same

Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes
0

Withdrawals from brackish surface water/seawater
0

Withdrawals from groundwater - renewable
33.59

Withdrawals from groundwater - non-renewable
0

Withdrawals from produced/entrained water
0

Withdrawals from third party sources
204.52

Total water discharges at this facility (megaliters/year)
48.25

Comparison of total discharges with previous reporting year
Lower

Discharges to fresh surface water
48.25

Discharges to brackish surface water/seawater
0

Discharges to groundwater
0

Discharges to third party destinations
0

Total water consumption at this facility (megaliters/year)
189.85

Comparison of total consumption with previous reporting year
About the same

Please explain
To be defined as a water-stressed region, the baseline water stress must correspond to ‘High’ or more. Our site in Turkey is in a water-stressed region.

In 2022, KT&G’s total water withdrawals, total discharges, and total consumption were 733.01 ML, 183.22 ML, and 549.80 ML, respectively. We plan to reduce the withdrawals by 20% by 2030, and all three indicators at the Sintanjin 1 plant are likely to decrease in the future.

We have set a target of achieving KRW 10 trillion in sales by 2027, which requires an increase in sales by more than 10% each year, and this will also increase water usage. However, the increase in water use against sales is likely to be low considering the target. Taken together, we have set the internal criteria for water resources as "Much higher/lower ±10%".

-Withdrawals: Calculated by registering and aggregating monthly amounts from water bills issued by water suppliers.
-Discharges: Daily volume is checked from water meters and the records are summed up on an annual basis.
-Consumption: Calculated by aggregating monthly amounts by source using water bills. It corresponds to the aggregation of the data calculated by region.

At the Sintanjin 1 plant, water withdrawals from third-party sources take place through an official municipal water provider, and we use only two sources: municipal water and renewable groundwater. For discharges, we discharge water only to surface water (freshwater), so other destinations are irrelevant to Sintanjin 1 plant.

Facility reference number
Facility 2

Facility name (optional)
Indonesia

Country/Area & River basin

Indonesia	Other, please specify (Cisadane)

Latitude
-7.27434

Longitude
112.748594

Located in area with water stress
No

Primary power generation source for your electricity generation at this facility
<Not Applicable>

Oil & gas sector business division
<Not Applicable>

Total water withdrawals at this facility (megaliters/year)
177.7

Comparison of total withdrawals with previous reporting year
About the same

Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes
0

Withdrawals from brackish surface water/seawater
0

Withdrawals from groundwater - renewable
177.7

Withdrawals from groundwater - non-renewable
0

Withdrawals from produced/entrained water
0

Withdrawals from third party sources
0

Total water discharges at this facility (megaliters/year)
8.7

Comparison of total discharges with previous reporting year
Much higher

Discharges to fresh surface water
0

Discharges to brackish surface water/seawater
0

Discharges to groundwater
0

Discharges to third party destinations
8.7

Total water consumption at this facility (megaliters/year)
169.1

Comparison of total consumption with previous reporting year
About the same

Please explain
To be defined as a water-stressed region, the baseline water stress must be measured ‘High’ or more. Our site in Turkey is located in a water-stressed region.

In 2022, KT&G’s total water withdrawals, total discharges, and total consumption were 733.01 ML, 183.22 ML, and 549.80 ML, respectively. We plan to reduce the withdrawals by 20% by 2030, and all three indicators at the facilities in Indonesia are likely to decrease in the future.

We have set a target of achieving KRW 10 trillion in sales by 2027, which requires an increase in sales by more than 10% each year, and this will also accelerate water usage. However, the increase in water use against sales is likely to be low considering the target. Taken together, we have set the internal criteria for water resources as "Much higher/lower ±10%".

-Withdrawals: Calculated by registering and aggregating monthly amounts from water bills issued by water suppliers.
-Discharges: Daily volume is checked from water meters and the records are summed up on an annual basis.
-Consumption: Calculated by aggregating monthly amounts by source using water bills. It corresponds to the aggregation of the data calculated by region.

As we only use renewable groundwater as a water source in Indonesia, other water sources are irrelevant. For water discharges, we only utilize third-party destinations in Indonesia, so other destinations are irrelevant, and the third parties do not provide additional water for other companies.

Facility reference number
Facility 3

Facility name (optional)

Turkey

Country/Area & River basin

Turkey	Other, please specify (Gediz River)

Latitude
38.128173

Longitude
27.694217

Located in area with water stress
Yes

Primary power generation source for your electricity generation at this facility
<Not Applicable>

Oil & gas sector business division
<Not Applicable>

Total water withdrawals at this facility (megaliters/year)
17.3

Comparison of total withdrawals with previous reporting year
About the same

Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes
0

Withdrawals from brackish surface water/seawater
0

Withdrawals from groundwater - renewable
0

Withdrawals from groundwater - non-renewable
0

Withdrawals from produced/entrained water
0

Withdrawals from third party sources
17.3

Total water discharges at this facility (megaliters/year)
17

Comparison of total discharges with previous reporting year
About the same

Discharges to fresh surface water
0

Discharges to brackish surface water/seawater
0

Discharges to groundwater
0

Discharges to third party destinations
17

Total water consumption at this facility (megaliters/year)
0.3

Comparison of total consumption with previous reporting year
Much higher

Please explain
To be defined as a water-stressed region, the baseline water stress must be measured ‘High’ or more. Our site in Turkey is located in a water-stressed region.

In 2022, KT&G’s total water withdrawals, total discharges, and total consumption were 733.01 ML, 183.22 ML, and 549.80 ML, respectively. We plan to reduce the withdrawals by 20% by 2030, and all three indicators at the facilities in Turkey are likely to decrease in the future.

-Withdrawals: Calculated by registering and aggregating monthly amounts from water bills issued by water suppliers.
-Discharges: Calculated by registering and aggregating monthly discharge amounts from bills from contractors.
-Consumption: Calculated by aggregating monthly amounts by source using water bills. It corresponds to the aggregation of the data calculated by region.

Municipal water providers are third-party sources of the water withdrawals. As we use only third-party sources for withdrawals in Turkey, other sources are irrelevant. For water discharges in Turkey, we only utilize third-party destinations, so other destinations are irrelevant, and the third parties do not provide additional water for other companies.

W5.1a

(W5.1a) For the facilities referenced in W5.1, what proportion of water accounting data has been third party verified?

Water withdrawals – total volumes

% verified
76-100

Verification standard used
In order to publish the Sustainability Report (KT&G Report), which covers the water management performance of domestic and overseas business sites, including the total volume of water withdrawals, KT&G has completed the verification by a third-party assurance organization, KPMG. KPMG complies with the International Federation of Accountants (IFAC) Code of Ethics as an assurance organization, and the verification activities were conducted based on ISAE3000 issued by the IAASB.

Please explain
<Not Applicable>

Water withdrawals – volume by source

% verified
76-100

Verification standard used
In order to publish the Sustainability Report (KT&G Report), which covers the water management performance of domestic and overseas business sites, including volume of water withdrawals by source, KT&G has completed the verification by a third-party assurance organization, KPMG. KPMG complies with the IFAC Code of Ethics as an assurance organization, and the verification activities were conducted based on ISAE3000 issued by the IAASB.

Please explain
<Not Applicable>

Water withdrawals – quality by standard water quality parameters

% verified
51-75

Verification standard used
KT&G verifies its water quality against standard water quality criteria through annual ISO14001 certification reviews and has been maintaining the certification.

Please explain
<Not Applicable>

Water discharges – total volumes

% verified
76-100

Verification standard used
In order to publish the Sustainability Report (KT&G Report), which covers the water management performance of domestic and overseas business sites, including total volume of water discharges, KT&G has completed the verification by a third-party assurance organization, KPMG. KPMG complies with the IFAC Code of Ethics as an assurance organization, and the verification activities were conducted based on ISAE3000 issued by the IAASB.

Please explain
<Not Applicable>

Water discharges – volume by destination

% verified
76-100

Verification standard used
In order to publish the Sustainability Report (KT&G Report), which covers the water management performance of domestic and overseas business sites, including volume of water discharges by destination, KT&G has completed the verification by a third-party assurance organization, KPMG. KPMG complies with the IFAC Code of Ethics as an assurance organization, and the verification activities were conducted based on ISAE3000 issued by the IAASB.

Please explain
<Not Applicable>

Water discharges – volume by final treatment level

% verified
Not verified

Verification standard used
<Not Applicable>

Please explain
Currently, KT&G's Sustainability Report does not disclose data on discharge volumes by final treatment level. The data is managed internally, with the possibility of disclosure in the next two years.

Water discharges – quality by standard water quality parameters

% verified
51-75

Verification standard used
KT&G verifies the water quality of discharges against standard water quality criteria through annual ISO14001 certification reviews and has been maintaining the certification.

Please explain
<Not Applicable>

Water consumption – total volume

% verified
76-100

Verification standard used
In order to publish the Sustainability Report (KT&G Report), which covers the water management performance of domestic and overseas business sites, including total volume of water consumption, KT&G has completed the verification by a third-party assurance organization, KPMG. KPMG complies with the IFAC Code of Ethics as an assurance organization, and the verification activities were conducted based on ISAE3000 issued by the IAASB.

Please explain
<Not Applicable>

W6. Governance

W6.1

(W6.1) Does your organization have a water policy?
Yes, we have a documented water policy that is publicly available

W6.1a

(W6.1a) Select the options that best describe the scope and content of your water policy.

	Scope	Content	Please explain
Row 1	Company-wide	Description of business dependency on water Description of business impact on water Commitment to align with international frameworks, standards, and widely-recognized water initiatives Commitment to prevent, minimize, and control pollution Commitment to reduce water withdrawal and/or consumption volumes in direct operations Commitment to safely managed Water, Sanitation and Hygiene (WASH) in local communities Commitment to stakeholder education and capacity building on water security Commitment to water stewardship and/or collective action Commitments beyond regulatory compliance Reference to company water-related targets Acknowledgement of the human right to water and sanitation Recognition of environmental linkages, for example, due to climate change	Water is an essential resource for growing our raw material, leaf tobacco, and producing our products. If good quality freshwater is not secured, production is disrupted. KT&G thoroughly checks the potential water pollution by considering the impact on water when purchasing and using various resources such as pesticides and fertilizers. In an effort to fulfill its social responsibility, KT&G has established an environmental management policy and has disclosed its water saving targets to align with UN SDG Goal 6. We have declared our commitment to obtain and maintain the certification of ISO14001. We also conduct regular ESG training for employees and suppliers. We are promoting global water-related certifications, starting with AWS certification in 2023. We have established the 'KT&G Supplier Code of Ethics' and require our suppliers to comply with it. Suppliers are required to minimize adverse environmental impacts in the manufacturing process and comply with relevant laws and regulations. We require our suppliers to identify chemicals that pose a risk of environmental pollution and to reduce and eliminate all types of waste, including wastewater. KT&G's green purchasing policy require supplier companies to establish a management system to minimize water impact in the manufacturing process. Benefits (long-term contracts, technical support, etc.) are provided to supplier companies which actively comply with our purchasing policy. Through the Environmental Management Policy, we declared a 20% reduction in water withdrawals at our direct operations by 2030 and prevention of environmental pollution by wastewater by implementing internal management standards that are stricter than legal ones. We guarantee our employees' human rights to water and sanitation, and 'non-improvement or non-provision of drinking water' and 'non-improvement or non-provision sanitation' are managed as internal regulatory risk items. We are working on addressing WASH issues of the local communities in our value chain through the declaration of social contribution activities related to 'water and sanitation' among the UN SDGs goals. We donated 1,300 units of water purification equipment to 300 primary schools in Tanzania, where our raw material branches are located, enabling about 260,000 students to drink up to 340 million liters of clean water.

W6.2

(W6.2) Is there board level oversight of water-related issues within your organization?
Yes

W6.2a

(W6.2a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for water-related issues.

Position of individual or committee	Responsibilities for water-related issues
Board-level committee	In September 2020, KT&G revised the Articles of Incorporation of the BOD to grant the BOD, the highest decision-making body within KT&G, the authority to manage, supervise, and make decisions on climate change issues, including ESG and water-related issues, in order to systematically respond to sustainability-related risks by clearly setting responsibilities for the issues. Every year, the BOD reviews the mid- to long-term climate change response strategies and approves and oversees the execution of major tasks in accordance with the company-wide ESG promotion direction. At the 8th BOD meeting held in April 2021, we finalized our mid- to long-term strategies for ESG and environment matters and established a target of reducing water withdrawals by 20% from 2020 levels by 2030. In addition, in May 2021, by including water-related performance as an "ESG management performance" item in the KPIs for CEO evaluation and compensation, we strengthened the link between ESG performance and remuneration for top management. In February 2022, we established the "ESG Committee," within the BOD, to strengthen the board's expertise on ESG issues and promote more in-depth discussions and advanced strategy implementation. As the highest decision-making body for climate change response and ESG, the ESG Committee taking over the roles and functions on ESG which were previously assigned to the BOD. The ESG Committee reviews the "KT&G Report," our information disclosure material, and deliberates on basic ESG policies, strategies, and mid- to long-term goals in order to transparently communicate our major ESG management performance, including climate change response, to the stakeholders. In addition, the committee oversees management of material ESG-related risks and company-wide response activities, including water-related issues.

W6.2b

(W6.2b) Provide further details on the board's oversight of water-related issues.

	Frequency that water-related issues are a scheduled agenda item	Governance mechanisms into which water-related issues are integrated	Please explain
Row 1	Scheduled - some meetings	Monitoring implementation and performance Overseeing acquisitions, mergers, and divestitures Overseeing major capital expenditures Overseeing the setting of corporate targets Providing employee incentives Reviewing and guiding annual budgets Reviewing and guiding business plans Reviewing and guiding major plans of action Reviewing and guiding strategy Setting performance objectives	As the highest decision-making body within KT&G, the BOD has oversight and decision-making authority for sustainable management (e.g. ESG and climate change), including water-related issues. In addition to overseeing acquisitions of other companies, divestitures of affiliates, and capital expenditures, the board oversees corporate strategies to achieve the water withdrawal reduction targets declared in the Green Impact (2030 Environmental Plan), annual budgets and business plans, as well as the entire process of evaluating executives based on ESG performance and providing incentives and compensation based on the evaluation. In addition, the ESG Planning Team, KT&G's ESG Control Tower under the COO, leads the establishment of an ESG management system that meets global standards, while regularly reporting company-wide ESG activities to the board, which monitors ESG performance. At the third BOD meeting held in February 2022, the Operating Regulations of the ESG Committee were passed, which include matters of establishment and implementation of ESG strategies. The ESG Committee oversees management of material ESG-related risks and company-wide response activities, including water-related issues. At the BOD meeting held in April 2022, the progress of ESG management and future plans were covered. The results of evaluations received from external rating agencies such as MSCI and KCGS and achievements such as establishing KT&G ESG governance were shared, and future ESG initiatives such as expanding water recycling, promoting global water certification, and establishing biodiversity management policies were discussed. The BOD held in August 2022 reviewed the "KT&G Report," a disclosure material to transparently communicate with stakeholders on key ESG management performance such as climate change response.

W6.2d

(W6.2d) Does your organization have at least one board member with competence on water-related issues?

	Board member(s) have competence on water-related issues	Criteria used to assess competence of board member(s) on water-related issues	Primary reason for no board-level competence on water-related issues	Explain why your organization does not have at least one board member with competence on water-related issues and any plans to address board-level competence in the future
Row 1	No, but we plan to address this within the next two years	<Not Applicable>	Important but not an immediate priority	KT&G has established a dedicated support organization for independent directors within the company to help them perform their professional duties on the BOD and its committees. While there is an expert on global/ESG matters on the board, his/her skills do not exactly match with water-related issues. KT&G plans to review on inclusion of a member with expertise in water-related issues in the board in the next two years.

W6.3

(W6.3) Provide the highest management-level position(s) or committee(s) with responsibility for water-related issues (do not include the names of individuals).

Name of the position(s) and/or committee(s)
Chief Operating Officer (COO)

Water-related responsibilities of this position
Assessing water-related risks and opportunities
Managing water-related risks and opportunities
Setting water-related corporate targets

Frequency of reporting to the board on water-related issues
Quarterly

Please explain
The COO is responsible for overseeing ESG management and reports on climate change issues, including water, and climate change strategy at least four times a year to the Board of Directors and CEO. COO is also the CFO and ensures that ESG and financial issues are handled in a coordinated manner. The COO make decisions on environmental issues such as water management, carbon emissions reduction. He makes decisions in developing water conservation action plans, mitigating climate change, and setting water-related corporate goals that can be integrated into the company's business strategy.

The ESG Planning Team, the ESG control tower under the COO, plays a key role in establishing an ESG system. The ESG Planning Team manages all water-related risks and opportunities related to KT&G's direct operations and supply chains, and conducts water risk analysis using the WRI tool every year. In 2022, we conducted a water risk analysis that extended to overseas leaf tobacco farmers.

W6.4

(W6.4) Do you provide incentives to C-suite employees or board members for the management of water-related issues?

	Provide incentives for management of water-related issues	Comment
Row 1	Yes	KT&G provides reasonable compensation based on systematic performance evaluation to improve employees morale. To raise awareness of top management's responsibility for ESG and environmental management as well as to strengthen their incentives accordingly, we added ESG indicators, including those related to water management, to the evaluation criteria for executives, including the CEO. In addition, all KT&G employees, not just the top management, actively participate in environmental impact mitigation plans such as water saving projects. Moreover, we provide non-monetary rewards to the employees and executives who present excellent ideas by hosting idea competitions for water management in the internal knowledge management system.

W6.4a

(W6.4a) What incentives are provided to C-suite employees or board members for the management of water-related issues (do not include the names of individuals)?

	Role(s) entitled to incentive	Performance indicator	Contribution of incentives to the achievement of your organization's water commitments	Please explain
Monetary reward	Chief Executive Officer (CEO)	Reduction of water withdrawals – direct operations Reduction in water consumption volumes – direct operations Reduction of water withdrawal and/or consumption volumes – supply chain Improvements in water efficiency – direct operations Improvements in water efficiency – supply chain Improvements in wastewater quality – direct operations Improvements in wastewater quality – supply chain	KT&G has included water resource management tasks such as reducing water withdrawals as a key element of its ESG management strategy and environmental management policy. In accordance with the remuneration policy, up to 255% of the CEO's annual base salary is paid as an incentive based on a comprehensive evaluation of ESG-related indicators, including water management. In particular, the evaluation scores of three renowned organizations in the sector of climate change and water management, including CDP Water Security, are averaged and reflected as a fixed rate in the CEO's KPI. We have established an ESG evaluation and reward system that automatically links the CEO's incentives and water-related performance by scoring with high ratings when she/he fulfills the water management requirements required by CDP Water Security, such as reducing water withdrawals and consumption, improving water efficiency, and improving water quality of the discharges. By reflecting ESG performance in KPIs of the CEO, ESG activities, which were previously limited to risk management, have been elevated to the level of company-wide management strategy, thus encouraging ESG values across all management activities. In addition, by engaging suppliers in the ESG management strategy, a true company-wide ESG management system has been established, where water-related goals are effectively disseminated to all organizations involved.	Monetary rewards for the CEO are given on an annual basis, with ESG performance factored into the overall CEO KPIs as a fixed percentage. Half of the ESG-related KPIs are derived by averaging KT&G's ratings from three reputable evaluation organizations in the sector of climate change and water management, including CDP Water Security. We have established an ESG evaluation and reward system that automatically links the CEO's incentives and water-related performance, where high ratings are assigned if the water management is successfully fulfilled in accordance with the requirements by CDP Water Security, such as reducing water withdrawals and consumption, improving water efficiency, and improving water quality of the discharges. The criteria for success are clear, as there is a clear standard in terms of the rating assigned by the evaluation agency.
Non-monetary reward	Other, please specify (All employees)	Reduction in water consumption volumes – direct operations	One of KT&G's corporate water goals is to reduce water withdrawals, which can be accelerated by water consumption reduction. Among all water-related topics, water saving may be the easiest one for the internal employees to approach and come up with ideas for. KT&G has established an internal knowledge management system so that all employees can freely contribute their ideas. Through the internal knowledge management system, KT&G internally evaluates various water saving ideas, and finally selects the best ideas in consideration of future financial effects as a key criterion. Those who propose the best ideas are given mileage rewards that can be used internally. By rewarding mileage to the best proposals about water consumption reduction, we managed to encourage employees' access to our knowledge management system and their participation. This time, we presented water consumption reduction as a topic for proposal, and later on, we plan to expand the topics related to water resource management.	Mileage rewards are given to the employees who propose the good ideas which bring positive financial effects to the company. Idea is evaluated within one year and Mileages are usable internally. Success is measured by the scale of the financial impact from water consumption reduction.

W6.5

(W6.5) Do you engage in activities that could either directly or indirectly influence public policy on water through any of the following?

No

W6.6

(W6.6) Did your organization include information about its response to water-related risks in its most recent mainstream financial report?

No, but we plan to do so in the next two years

W7. Business strategy

W7.1

(W7.1) Are water-related issues integrated into any aspects of your long-term strategic business plan, and if so how?

	Are water-related issues integrated?	Long-term time horizon (years)	Please explain
Long-term business objectives	Yes, water-related issues are integrated	21-30	KT&G's long-term business goal is to become a global top-tier company that aims for a sustainable future, not only for its own growth but also for the growth of the country and the society. For sustainable business, we are practicing environmental management across the value chain from leaf tobacco cultivation to distribution, manufacturing, and consumers, while continuously coping with environmental issues and strengthening sustainability based on systematic corporate strategies. As part of a long-term strategic business plan, we have established a mid-term environmental plan, "KT&G Green Impact." Water-related issues are included as a main pillar of the plan along with relevant targets by specific figures such as "reducing water withdrawals at business sites". By 2030, we plan to reduce total water withdrawals by 20% from the 2020 baseline. In order to achieve our long-term business goals, it is important to take responses preemptively based on an in-depth understanding of water-related risks and opportunities. We have included water-related issues in our annual climate change risk management process and conducted a climate change scenario analysis for the period up to 2050 in consideration of our long-term business goals. The scenario analyses are used to guide the company's mid- to long-term strategy development. As such, water-related issues are well integrated within KT&G's long-term business goals as a core pillar supporting the corporate ESG strategy.
Strategy for achieving long-term objectives	Yes, water-related issues are integrated	21-30	KT&G is strategically promoting related water issues to achieve its long-term goals. In order to achieve our water withdrawal reduction at our business sites by 20%, we expect to save 20,380 tons of water each year by installing a wastewater reuse facility in 2022. We have also successfully developed a high-pressure washer that minimizes water loss, which is expected to save about 5,000 tons of water. In 2023, we have started promoting AWS certification, starting with our business sites in Yeongju, and plan to expand it to all of our business sites in the future. In February 2022, we established an ESG-dedicated committee within the BOD to strengthen the board's expertise in overseeing ESG issues that arise in the course of pursuing our long-term goals. We added ESG-related items to the evaluation indicators for executives to encourage top management's commitment to ESG. Based on a comprehensive evaluation of both quantitative and qualitative ESG indicators, up to 255% of annual base salary is provided as incentives to our board members, including the CEO. In a preemptive response to water-related issues, we actively utilize climate change scenario analysis and WRI analysis, and consider the short-term (by 2025) and mid-term (by 2030) conditions that we will face in pursuit of our long-term goal by 2050. We are making the best use out of such analyses to establish sustainable long-term response plans and strengthen our risk management system.
Financial planning	Yes, water-related issues are integrated	21-30	KT&G has been establishing investment plans in accordance with the water-related strategies required in pursuit of achieving its long-term business goals in 2050, as well as managing operating costs and capital expenditures by integrating them into financial plans. We also utilize the results of climate change scenario analysis and WRI analysis considered up to 2050 as a reference for long-term financial planning. The established financial plan is supervised by the BOD. The BOD reviews investment expenditures and financial resources required to achieve the long-term business goals, approves water-related business budgets, and plays a supervisory role in budget execution. Below is a list of water-related financial items required in the process of pursuing long-term business goals. 1) Water management: Water withdrawals, wastewater treatment, water resource management system management, water risk analyses, etc. 2) Water-related technology development (R&D): Leaf tobacco crop, irrigation technology, new equipment, etc. 3) Global certifications & initiatives: AWS, ISO14001, STP, etc.

W7.2

(W7.2) What is the trend in your organization's water-related capital expenditure (CAPEX) and operating expenditure (OPEX) for the reporting year, and the anticipated trend for the next reporting year?

Row 1

Water-related CAPEX (+/- % change)
47.36

Anticipated forward trend for CAPEX (+/- % change)
397.27

Water-related OPEX (+/- % change)
-26.06

Anticipated forward trend for OPEX (+/- % change)
7.41

Please explain
CAPEX has been mainly used for facility investment to reduce water consumption, such as installing water reuse facilities and replacing pipes/pumps for wastewater reuse. OPEX has been used for maintenance such as wastewater treatment and water resource measurement.

CAPEX increased by 47% compared to the previous year, mainly due to the expansion of investment in wastewater reuse facilities, including wastewater reuse facilities at the Yeongju plant and wastewater pump facilities at the Sintanjin plant. On the other hand, OPEX decreased by 26% year-on-year, mainly due to the elimination of the previous year's costs of overall parts replacement to save sanitary water and a decrease in wastewater treatment costs due to a reduction in discharge volume.

CAPEX is expected to increase in the future, mainly due to the installation of new washers and wastewater reuse facilities, while OPEX is expected to increase slightly due to the added costs from AWS certification services.

W7.3

(W7.3) Does your organization use scenario analysis to inform its business strategy?

	Use of scenario analysis	Comment
Row 1	Yes	KT&G uses climate change scenario analysis in the process of establishing business strategies. In 2022, we utilized the RCP 8.5 model which assumes more than 4℃ of temperature rise to conduct analyses for all domestic and overseas business sites.

W7.3a

(W7.3a) Provide details of the scenario analysis, what water-related outcomes were identified, and how they have influenced your organization's business strategy.

	Type of scenario analysis used	Parameters, assumptions, analytical choices	Description of possible water-related outcomes	Influence on business strategy
Row 1	Climate-related	KT&G's climate change scenario analysis begins with the identification and definition of climate change risks, followed by a multi-scenario analysis that assesses their relevance. In the process of scenario analysis, we have sophisticated the analysis by incorporating quantitative analysis as well as qualitative implications derived from internal employee evaluations and the opinions of external expert panels composed of investment analysts, professors and consultants. KT&G monitors the status of policy implementation, trends in GHG emissions, and carbon prices as key parameters, and continuously updates its climate change scenario analysis in case of significant changes or deviations in these indicators. The scenario analysis was conducted based on three different time horizons of 2025, 2030, and 2050, considering KT&G's long-term and mid-term goals based on three multi-scenarios of 1.5°C, 2°C, and 4°C. In the scenario analysis, we utilized APS model, STEPS model, and NZE model, which are transition scenario models that take into account national policy implementation by country, and RCP model for physical scenarios. In 2022, RCP 8.5 model, which assumes a temperature increase of 4°C or more, has been used as the physical risks are highly likely to intensify in the future. The scenario analysis was conducted in accordance with the TCFD recommendations. The scope of the analysis included Korea, Turkey, Indonesia, and Russia, where KT&G's business sites are located, and climate risk conditions in each region were also considered.	KT&G's business area falls into consumer staples based on the GICS classification, and sensitivity analysis by industry shows that the level of physical risks in the industry of consumer staples is higher than in other industries. In addition, the tobacco industry, which accounts for more than 60% of KT&G's total sales, is particularly sensitive to physical risks such as typhoons and rainfalls. In consideration of such characteristics of the industry along with risk-exposed populations, GDP, and farmland ratio, we reflected 'risk exposure', 'risk sensitivity', and 'risk vulnerability' indices in the physical risks. As a result of analyzing the overall risks based on the 'significance of impact', we have found that the risk of heavy rainfalls and floods would be increased by 0.47 points in 2030 compared to 2025, while the risk of rainfall change would be increased by 0.2 points and the risk of water scarcity would be increased by 0.43 points. (according to 4.0°C scenario). Adequate supplies of freshwater are essential to tobacco business, and if the negative water-related forecasts come true, a devastating impact on our business is expected in the future. It will be difficult to grow or secure enough leaf tobacco, and it is likely that negative issues will arise, making it difficult to produce quality products from the procured materials.	Sustainable water management requires a deep understanding of the relationship and dynamics between business and water resources, and proactive responses based on the understanding. In an effort to achieve this, KT&G is actively utilizing proven methodologies such as climate change scenario analysis. The key to water-related risks identified through scenario analysis is the ability to reliably supply quality water. In conjunction with the scenario analysis, KT&G has established water-related targets for the period up to 2030, with the biggest goal of reducing water withdrawals by 20% across all sites by 2030. In 2022, we expect to reduce water consumption by 20,380 tons per year through the installation of new wastewater reuse facilities at the Yeongju and Gwangju sites. In addition, about 5,000 tons of water consumption is expected to be reduced by introducing a newly developed high-pressure washer that minimizes water, energy, and time loss. We also started promoting the certification of the Alliance of Water Stewardship (AWS), a global certification for water management, starting with the Yeongju site in Korea in 2023 and plan to expand it to all sites in the future. KT&G has made use of climate change scenario analysis in the process of setting and implementing water-related goals, including long-term water use plans, and plans to continue to observe changes in scenario-related parameters and models and reflect them in new analyses later on.

W7.4

(W7.4) Does your company use an internal price on water?

Row 1

Does your company use an internal price on water?

No, but we are currently exploring water valuation practices

Please explain

In the future, we plan to explore water valuation methods to better capture the true financial impact of water-related risks identified from risks and opportunities analysis on KT&G's business, and subsequently introduce an internal pricing policy on water afterwards.

W7.5

(W7.5) Do you classify any of your current products and/or services as low water impact?

	Products and/or services classified as low water impact	Definition used to classify low water impact	Primary reason for not classifying any of your current products and/or services as low water impact	Please explain
Row 1	No, but we plan to address this within the next two years	<Not Applicable>	Important but not an immediate business priority	KT&G is conducting a Life Cycle Assessment (LCA) for its tobacco products. However, it is not easy to collect specific and substantial data on water consumption, because rainwater, for example, can be used in the supply chain. We plan to develop a methodology to obtain more detailed water usage data in the future and then categorize products according to their water impact.

W8. Targets

W8.1

(W8.1) Do you have any water-related targets?

Yes

W8.1a

(W8.1a) Indicate whether you have targets relating to water pollution, water withdrawals, WASH, or other water-related categories.

	Target set in this category	Please explain
Water pollution	Yes	<Not Applicable>
Water withdrawals	Yes	<Not Applicable>
Water, Sanitation, and Hygiene (WASH) services	Yes	<Not Applicable>
Other	Please select	<Not Applicable>

W8.1b

(W8.1b) Provide details of your water-related targets and the progress made.

Target reference number
Target 2

Category of target
Water pollution

Target coverage
Company-wide (direct operations only)

Quantitative metric
Increase in water use met through recycling/reuse

Year target was set
2022

Base year
2021

Base year figure
436

Target year
2030

Target year figure
70410

Reporting year figure
8973

% of target achieved relative to base year
12.2002458055849

Target status in reporting year
Underway

Please explain
According to the Green Impact (2030 Environmental Plan), a mid- to long-term environmental plan established in consideration of environmental impact of the business, KT&G has set a target of reducing its total water withdrawals by 20% of 2020 levels by 2030. The target is measured in tons and applies to all of KT&G's manufacturing sites. In addition, KT&G has set another target to increase water reuse, with an expectation of generating a virtuous circle with the water withdrawals reduction target. Increased water reuse leads to reduced net water consumption, which naturally contributes to reduced water withdrawals. In addition, setting clear annual water withdrawal targets will encourage the company to pursue water reuse in a more systematic way to achieve its planned manufacturing output under limited water resources.

KT&G expects to expand its water reuse by 20,380 tons per year later on through the installation of new wastewater reuse facilities at its Yeongju and Gwangju plants in 2022, and is considering more diverse use cases for reused water, for cleaning dehydrators and dissolving chemicals, for example. As a result of the review, in 2022, we were able to reuse 1,552 tons of water per year additionally by introducing a wastewater purification method that uses ozone and filtration membranes to further treat wastewater and use it for wet scrubbers and toilets. In addition, some plants, including the Sintanjin plant, have already completed replacement of water pipes and check valves of cooling water pumps to increase the recovery rate of boiler condensate. In 2023, we are planning to reinforce the water reuse infrastructure at our domestic plants.

Target reference number
Target 1

Category of target
Water withdrawals

Target coverage
Company-wide (direct operations only)

Quantitative metric
Reduction in total water withdrawals

Year target was set
2021

Base year
2020

Base year figure
766167

Target year
2030

Target year figure
612934

Reporting year figure
733014

% of target achieved relative to base year
21.6356789986491

Target status in reporting year
Underway

Please explain
KT&G has set a goal of reducing its total water withdrawals by 20 percent by 2030 compared to 2020 as one of the main pillars of Green Impact (2030 Environmental Plan). KT&G's water withdrawal reduction target corresponds to an annual reduction of 2% from 2021 to 2030. The target is measured in tons and applies to all KT&G's manufacturing sites. To date, the volume of reduction accounts for 21.6% of the 2030 target. KT&G expects to reduce the water dependence of tobacco business beyond the reduction in water supply costs and wastewater treatment costs. Given that water withdrawals and water dependency are closely related, it is likely that water dependency will be reduced if the target is achieved successfully.

Activities to reduce water withdrawals are currently underway. In 2022, we successfully developed a new high-pressure washer that minimizes water, energy use and time loss, and about 5,000 tons of water is expected to be saved by sequential introduction of the device. In addition, considering that water withdrawal reduction requires water consumption reduction, we have established an internal knowledge management system to collect employees' ideas for 'water consumption reduction'. Best proposals will be selected for implementation in consideration of financial effects.

Target reference number
Target 3

Category of target
Water, Sanitation and Hygiene (WASH) services

Target coverage
Country/area/region

Quantitative metric
Increase in the proportion of local population using safely managed drinking water services around our facilities and operations

Year target was set
2021

Base year
2021

Base year figure
0

Target year
2022

Target year figure
3

Reporting year figure
4.4

% of target achieved relative to base year
146.666666666667

Target status in reporting year
Achieved

Please explain
KT&G is addressing issues related to WASH services in its value chain by setting and implementing specific water targets. The target is measured in terms of the ratio of the local population that has access to drinking water, and is applicable to Tanzania, where KT&G's overseas branches(raw materials) are located.

KT&G has set the target to improve the local people's right to hygienic and clean water. For the WASH rights of students in 300 primary schools in Tanzania, KT&G distributed 1,300 units of eco-friendly water purification devices by July 2022. With the support from KT&G, a total of approximately 260,000 students have become accessible to up to 340 million liters(L) of clean water per year. The subject population of 260,000 accounts for 4.4% of the total population of the region where the eco-friendly water purification devices were installed. Through this project, we were able to solve both problems of drinking water scarcity and waterborne diseases in the region, while enhancing the residents' right to drink hygienic and clean water.

W9. Verification

W9.1

(W9.1) Do you verify any other water information reported in your CDP disclosure (not already covered by W5.1a)?
Yes

W9.1a

(W9.1a) Which data points within your CDP disclosure have been verified, and which standards were used?

Disclosure module	Data verified	Verification standard	Please explain
W8 Targets	KT&G plans to reduce water withdrawal by 20% compared to 2020 by 2030. The targets, action plans, and implementation activities are included in the Integrated Report and the Sustainability Report, and the related data has been verified by a third party.	ISAE 3000	The final data is subject to third-party verification, which is disclosed in an appendix to the Integrated Report and the Sustainability Report.
W4 Risks and opportunities	KT&G conducted a water risk assessment using WRI Aqueduct for a total of 38 sites(Based on region: 43 sites), including domestic and overseas business sites and supply chains. The final data is included in the Integrated Report and the Sustainability Report, and the related data has been verified by a third party.	ISAE 3000	The final data is subject to third-party verification, which is disclosed in an appendix to the Integrated Report and the Sustainability Report.

W10. Plastics

W10.1

(W10.1) Have you mapped where in your value chain plastics are used and/or produced?

	Plastics mapping	Value chain stage	Please explain
Row 1	Not mapped – but we plan to within the next two years	<Not Applicable>	KT&G has not yet mapped where plastics are used/produced in its value chain, but has plans to do so and will do so within two years.

W10.2

(W10.2) Across your value chain, have you assessed the potential environmental and human health impacts of your use and/or production of plastics?

	Impact assessment	Value chain stage	Please explain
Row 1	Not assessed – but we plan to within the next two years	<Not Applicable>	KT&G has not assessed the potential impact of 'plastic use/production' on the environment and human health, but has plans to do so and will do so within two years.

W10.3

(W10.3) Across your value chain, are you exposed to plastics-related risks with the potential to have a substantive financial or strategic impact on your business? If so, provide details.

	Risk exposure	Value chain stage	Type of risk	Please explain
Row 1	Not assessed – but we plan to within the next two years	<Not Applicable>	<Not Applicable>	KT&G has not assessed whether it is exposed to "plastic risk," but has a plan to do so and will do so within two years.

W10.4

(W10.4) Do you have plastics-related targets, and if so what type?

	Targets in place	Target type	Target metric	Please explain
Row 1	No – but we plan to within the next two years	<Not Applicable>	<Not Applicable>	KT&G has not set plastics-related targets, but it does have a plan and will implement it within two years.

W10.5

(W10.5) Indicate whether your organization engages in the following activities.

	Activity applies	Comment
Production of plastic polymers	No	
Production of durable plastic components	No	
Production / commercialization of durable plastic goods (including mixed materials)	No	
Production / commercialization of plastic packaging	No	
Production of goods packaged in plastics	No	
Provision / commercialization of services or goods that use plastic packaging (e.g., retail and food services)	No	

W11. Sign off

W-FI

(W-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

-
KT&G_TCFD Report.pdf
KT&G_Green Procurement Guideline.pdf
KT&G_Environmental Management Policy.pdf
KT&G_Supplier Code of Conduct.pdf

W11.1

(W11.1) Provide details for the person that has signed off (approved) your CDP water response.

	Job title	Corresponding job category
Row 1	Senior Executive Vice President	Chief Operating Officer (COO)

Submit your response

In which language are you submitting your response?
English

Please confirm how your response should be handled by CDP

	I understand that my response will be shared with all requesting stakeholders	Response permission
Please select your submission options	Yes	Public

Please indicate your consent for CDP to share contact details with the Pacific Institute to support content for its Water Action Hub website.
Yes, CDP may share our Main User contact details with the Pacific Institute

Please confirm below
I have read and accept the applicable Terms