Welcome to your CDP Climate Change Questionnaire 2021

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

Kao. The Company is a Japan-based company that operates through two business segments: Consumer Product and Chemical. The Consumer Product segment has three divisions. The Cosmetic Business provides cosmetics such as lotion, foundation and lipstick. The Skin Care and hair Care Business offers premium skincare products such as face washes, as well as premium hair care products including shampoos, hair styling products and hair coloring products, among others. The Human Health Care Business provides food and beverage products such as drinks ; sanitary products including hygiene products and paper diapers, as well as personal health products such as bath additives. The Fabric and Home Care Business offers fabric care products including detergents for apparel use, and home care products including detergents for kitchen use. The Chemical Business provides oil and fat products such as fatty acids; functional materials products such as surface acting agents and additives for plastic use, as well as specialty chemical products such as essences, among others.
The Cosmetic Business accounted for 16.9% of total turnover in fiscal 2020; The Skin Care and hair Care Business,22.4%; The Human Health Care Business,16.9%; The Fabric and Home Care Business, 27.1%; and The Chemical Business,16.7%. The Company reported JPY 1,382.0 b in revenues and 33,409 permanent employees at December 31, 2020.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	January 1, 2020	December 31, 2020	Yes	1 year

C0.3

(C0.3) Select the countries/areas for which you will be supplying data.

Australia

Austria
Belgium
Canada
China
China, Hong Kong Special Administrative Region
Czechia
Democratic People's Republic of Korea
Denmark
Finland
France
Germany
Indonesia
Italy
Japan
Malaysia
Mexico
Netherlands
New Zealand
Norway
Philippines
Russian Federation
Singapore
South Africa
Spain
Sweden
Switzerland
Taiwan, Greater China
Thailand
United Kingdom of Great Britain and Northern Ireland
United States of America
Viet Nam

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

JPY

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.

Operational control

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Chief Executive Officer (CEO)	Since climate change affects Kao's business, it must be monitored as a business management issue and is therefore under the CEO's oversight. CEO is a chairman of the ESG Committee, which is one of the internal organizations responsible for Kao's response to climate change, under the board. This committee is approved by the Board, under the Kao corporate governance system. The ESG Committee manages progress in activities related to locating new opportunities, while the Responsible Care Promotion Committee manages risk-management activities. The ESG Committee is convened more than six times in 2020. The contents were supervised by the Board and deliberated more than six times in 2020. Recommendations for ESG strategies linked to the K25 medium-term management plan were discussed and approved by the ESG Committee in 2020. One of the objectives of K25 was to become a company that is indispensable to sustainable society (carbon recycling: converting carbon dioxide into raw materials). The goal of Kao ESG management was to achieve zero carbon emissions.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – some meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action	Kao has set up a management structure so that we can swiftly respond to changes, realize efficient management that is sound, fair, and highly transparent, and continuously increase corporate value. Kao's Board of Directors conducts diversified deliberations and decision-making with respect to the medium- to long-

	Reviewing and guiding risk management policies Monitoring implementation and performance of objectives	term management direction for management strategies and the like, including risk assessment, based on the regulations of the Board of Directors and deliberation and reporting standards for the Board of Directors and the Management Committee. We have established the Internal Control Committee and the ESG Committee, chaired by the CEO directly and under control of the Board of Directors, which are in charge of managing risks and opportunities, respectively, related to climate change. The content of deliberations by the Internal Control Committee and the ESG Committee is reported to the Board of Directors for its final deliberation and decision. Note that with regard to decision-making on the mid- to long-term direction and strategy implementation deliberated on and determined by the Board of Directors, extensive authority is entrusted to the Management Committee. Serving as the main members of this committee are managing executive officers or higher executives who are in charge of Kao's main businesses and divisions. They have a wealth of experience in conducting business, and have a broad scope of authority to make and execute decisions quickly.

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Chief Executive Officer (CEO)	Both assessing and managing climate-related risks and opportunities	Quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

i) Where in the organizational structure that/those position(s) and/or committee(s) lies

The Risk and Crisis Management Committee and the Responsible Care Promotion Committee under the Internal Control Committee, which is under the control of the Board of Directors, manage risks including climate change, water and forest.
The ESG Committee, which is under the control of the Board of Directors, manages ESG visions and its strategy including opportunities related to climate change, water and forest. The CEO serves as the chairman of the Internal Control Committee as well as the ESG Committee.

ii) A clear rationale for why responsibility lies with that/those position(s) and/or committee(s)
The ESG Committee and the Internal Control Committee, chaired by the CEO, deal with our climate-related issues. This is because we recognize that our response to climate change, water, and forestry is an important issue that requires management decisions as part of the Kao Group's business activities. Specifically, the ESG Committee discusses Kao's ESG activity strategy, the "Kirei Lifestyle Plan," including themes to work on and medium-term targets. Results are submitted to the Board of Directors for its approval. In addition, since risks associated with climate change, water, and forestry pose critical risks to the management of the company, the Risk and Crisis Management Committee, a subordinate organization of the Internal Control Committee, evaluates and manages such risks. Moreover, the Responsible Care Promotion Committee, a subordinate organization of the Internal Control Committee, manages legal and regulatory compliance regarding climate change, water, and forestry. Therefore, the person ultimately in charge of climate-related issues at Kao is the CEO, who serves as the chairman of both the ESG Committee and the Internal Control Committee.

ⅲ）A Company specific description of the responsibilities of each position and/or committee with regard to assessment and monitoring of climate-related issues.
Kao has laid out its corporate philosophy, “Kao way” which is the foundation of its corporate activity. The missions stipulating in the Kao way are “realization of enriched lifestyle with joy and satisfaction for people throughout the world” and ”contribution to sustainable society”. Kao recognizes that climate change is a great threat in the current and future generations’ realization of enriched lifestyle. Under such recognition, CEO, as the chairman of ESG committee, has formed 19 prioritized actions to realize “Kirei Lifestyle Plan” (“Decarbonization” is among them) and checks and assess the implementation status. Through a major KPI, Scope 1+2 emissions and product life cycle CO2 emissions have set out in “Decarbonization” “Responsible care promotion committee” which is under the “Internal governance committee”, monitors the activity status in the divisions, subsidiaries and affiliate companies every month. The monitoring results are reported to CEO in “Internal governance committee” and "ESG committee". CEO, the chairman of internal governance committee and ESG committee, approves the result of the discussion of the committees every month. Furthermore, an audit is conducted yearly and the activities are checked and if delay happens corrective action is carried out accordingly.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

	Provide incentives for the management of climate-related issues	Comment

Row 1	Yes	

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Entitled to incentive	Type of incentive	Activity inventivized	Comment
Chief Executive Officer (CEO)	Monetary reward	Emissions reduction target Energy reduction target Efficiency project Company performance against a climate-related sustainability index	Evaluate by EVA which is related to all environmental matter such as level of achievement of GHG emission reduction objectives related to variable cost reduction by energy reduction projects and efficiency projects, responses to climate change problems related to variable cost reduction and sales increase, and expansion of sales of low-carbon products related to sales increase itself
Executive officer	Monetary reward	Emissions reduction target Energy reduction project Energy reduction target Efficiency project Company performance against a climate-related sustainability index	Evaluate all matters such as level of achievement of GHG emission reduction target and energy reduction target (basic unit and absolute quantity) by emission reduction projects, energy reduction projects and efficiency projects, responses to climate change problems, and expansion of sales of low-carbon products
Management group	Monetary reward	Emissions reduction project Emissions reduction target Energy reduction project Efficiency project Company performance against a climate-related	Evaluate all matters such as level of achievement of GHG emission reduction target and energy reduction target (basic unit and absolute quantity) by emission reduction projects, energy reduction projects and efficiency projects, responses to climate change problems, and expansion of sales of low-carbon products

		sustainability index	
Chief Procurement Officer (CPO)	Monetary reward	Environmental criteria included in purchases Supply chain engagement	Evaluate all matters of supply chain engagement such as GHG emission reduction activities and water risk management of each supplier.
Buyers/purchasers	Monetary reward	Environmental criteria included in purchases Supply chain engagement	Evaluate all matters of supply chain engagement such as level of GHG emission reduction activities and water risk management of related supplier.
Procurement manager	Monetary reward	Environmental criteria included in purchases Supply chain engagement	Evaluate all matters of supply chain engagement such as level of GHG emission reduction activities and water risk management of related supplier.
Environment/Sustainability manager	Monetary reward	Emissions reduction project Emissions reduction target Energy reduction project Energy reduction target Efficiency project Behavior change related indicator Supply chain engagement Company performance against a climate-related sustainability index	Evaluate all matters such as level of achievement of GHG emission reduction target and energy reduction target (basic unit and absolute quantity) by emission reduction projects, energy reduction projects and efficiency projects, responses to climate change problems, and expansion of sales of low-carbon products
Facilities manager	Monetary reward	Emissions reduction project Emissions reduction target Energy reduction project	Evaluate applicable matters such as level of achievement of GHG emission reduction target and energy reduction target (basic unit and absolute quantity) and responses to climate change problems

		Energy reduction target Efficiency project Efficiency target	
Process operation manager	Monetary reward	Emissions reduction project Emissions reduction target Energy reduction project Energy reduction target Efficiency project Efficiency target	Evaluate applicable matters such as level of achievement of GHG emission reduction target and energy reduction target (basic unit and absolute quantity) and responses to climate change problems
Risk manager	Monetary reward	Other (please specify) Locate climate change risks and determine response measures	Locate climate change risks and determine response measures
All employees	Monetary reward	Emissions reduction project Energy reduction project Efficiency project Supply chain engagement Company performance against a climate-related sustainability index	Depending on each employee achievement of some project related to emission reduction, energy reduction and efficiency, responses to climate change problems, and expansion of sales of low-carbon products

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	2	
Medium-term	2	5	
Long-term	5	30	

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

We define an event as having a substantive financial impact if the amount of damage of revenue is expected to exceed 1 billion yen.

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered

Direct operations
Upstream
Downstream

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

More than once a year

Time horizon(s) covered

Short-term
Medium-term
Long-term

Description of process

Kao manages the "risks" related to climate change with Internal Control Committee chaired by the CEO and 2 committees under it: "Risk & Crisis Management Committee (held at least 4 times a year)" and "Responsible Care Promotion Committee (held at least twice a year)."

Based on short-, medium-and long-term perspectives, these committees assess and

identify various reputational risks, including risks related to climate change, as well as any risks related to corporate activities, such as employee labor risks and environmental risks on the vicinity of the factory, not only for the company but also for upstream and downstream value chains, as risks that could have a strategic or financial material impact if the amount of damage to earnings is expected to exceed JPY1 billion.

Risk & Crisis Management Committee appoints a person in charge (executive officer) for each identified risk. The person in charge shall formulate and implement countermeasures and report the status of the countermeasures to the committee. The committee will monitor the progress of each theme and supervise the entire process by, for example, instructing delays if delays are discovered.

Kao also establishes KPIs to assess and identify and maximize opportunities for climate-change "opportunities" in the same manner as the risk-assessment processes described above in the "ESG Committee" chaired by the CEO (held six or more times a year). The committee centrally manages 19 themes, including climate change and resource circulation, that lead to increased corporate value from an ESG perspective. ESG Committee shall appoint a responsible person (executive officer) for each identified occasion. The person in charge shall formulate and implement the implementation of the KPI and the overall promotion plan, and the committee shall report on the progress. The committee checks the progress of each theme and manages the whole, for example, determining the necessity of starting new activities.

CASE STUDY (1) [Physical risks / Direct Operation / Short and Long-term]
Situation and Background: In the past, Kao's Philippines plants were inundated and the facilities were damaged and forced to suspend operations. Kao also recognizes that climate change may cause flooding in other plants in the future.
Problems to be solved: Factories facing high risk for flooding should be identified and prevented from being damaged by flooding.
Actions Implemented: Risk & Crisis Management Committee, chaired by the CEO, meets at least 4 times a year to manage natural disasters and other risks. Risk & Crisis Management Committee has appointed a person in charge of disaster prevention at the plant. The appointed person decided to work with internal stakeholders to identify factories where climate change is likely to cause flooding in the future and to develop the necessary measures. In 2020, the appointed person assessed the likelihood and consequences of short-term flooding at all Kao plants (Direct Operation sites) and the likelihood and consequences of flooding at a 2°C increase (2040 for RCP8 5 and 2050 for RCP2 6) using climate change scenario analyses.
Results: Climate change scenario analysis identified factories at high risk of flooding, and the appointed person planned to reduce the risk of flooding. The appointed person shall report the findings to Risk & Crisis Management Committee. The committee confirmed that the response to this risk was progressing as scheduled and directed that it would continue to consider it.

CASE STUDY (2) [Transitional opportunities / Direct Operation, Upstream, Downstream / Long-term]

Situation and Background: Kao set a 2°C target for SBT in 2019, but in 2020 more companies began to declare a net zero and declare a 1.5°C target worldwide. Kao's efforts to address climate change could have led to opportunities in raising corporate value if they were raised to new stages that have not been extended to date.
Problems to be resolved: To reset Kao's activities and targets for climate change to net zero and 1.5°C levels.
Actions taken: ESG Committee, which meets six times a year, is chaired by the CEO. It discusses and determines the direction of ESG activities, including opportunities on climate change. ESG Committee has appointed persons responsible for climate change activities. In order to raise Kao's activities against climate change to a new stage that is not an extension of the past and to lead to opportunities of increasing corporate value, the head of the committee worked with internal stakeholders to discuss not only Direct Operation (Kao's efforts to reduce Scope1+2 emissions at Kao's sites), but also Upstream (initiatives to reduce GHGs in raw material procurement) and Downstream (initiatives to reduce GHGs in product use and disposal). The committee discussed new activities against climate change and the feasibility of achieving the 1.5°C target.
Results: The person in charge of climate change activities reported to ESG Committee on the outcome of the deliberations. Consequently, ESG Committee set the following targets for climate change activities: Kao aims to achieve zero-carbon by 2040 and carbon-negative by 2050, and raises Direct Operation target to 1.5°C. Subsequently, ESG Committee instructed the person in charge to expand the goal quickly to outside the company in order to enhance Kao's reputation. The person in charge worked with the public relations team and disclosed the goal to the public in the form of a release.

C2.2a

(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	An example of risks regarding current regulation is the cap-and-trade system of the Metropolis of Tokyo. The Sumida Office in Japan, which bears plant, is subject to the cap-and-trade system of the Metropolis of Tokyo. Thus, the office must keep its emissions amount below the cap. The office manages monthly emissions, confirms whether or not emission rights must be purchased, and conducts risk assessment on the business impacts.
Emerging regulation	Relevant, always included	Japan, which accounts for approximately 50% of the Kao Group's greenhouse gas (GHG) emissions, has yet to deploy an emission trading system. Once deployed, there will be the risk that achieving sales targets becomes difficult because the production amount cannot be increased as planned due to restrictions imposed on plant operations. Therefore, Kao is monitoring trends with respect to the move toward deploying an emission trading system in Japan while evaluating risks that may arise if such a system is deployed.

Technology	Relevant, always included	Society is shifting to become more energy efficient, so failing to change with the times imposes the risk of lost sales opportunities. Although Kao has already developed products that contribute to reducing GHG emissions, such as a low temperature fixable toner, we must continue to develop highly energy efficient products ahead of other companies. To this end, we investigate market trends, conduct patent surveys, and evaluate risks associated with each technology trend at our offices and laboratories.
Legal	Relevant, always included	Because Kao is engaged in a wide range of business globally, accordingly it is susceptible to various lawsuits including climate-change cases. To prevent environmental lawsuits against us, such as climate-change cases, the Responsible Care Promotion Committee, a subordinate organization of the Internal Control Committee chaired by the CEO, manages the status of compliance with environmental laws, regulations, and amendment information—including those on climate change. Our production sites, in particular, are subject to numerous environmental laws; for Kao's plants to observe environmental laws and regulations, including those on climate change, we invested 0.973 billion yen and spent 3.366 billion yen in 2019.
Market	Relevant, always included	As an example of the risks associated with the market, there is a change in the market due to the rise in temperature. Since approximately 70% of the Kao Group's sales are accounted for by consumer products, seasonal changes in product demand due to temperature increases attributable to climate change pose the risk of lost sales opportunities. For example, a bath tablet "Bub" sales well in winter, and antiperspirant "8x4" and anti-UV products sales well in summer. Thus, Kao has been conducting sophisticated inventory management while evaluating the risks associated with store stock-outs.
Reputation	Relevant, always included	Approximately 50% of Kao's shares are held by investors outside Japan. If we are not actively involved in environmental, social, and governance (ESG) activities, there is a risk that financing, such as issuing of corporate bonds, may not proceed smoothly. For this reason, we must perform ESG activities to the same extent as other companies in our industry around the world. We benchmark such companies while evaluating the risks associated with Kao's ESG activity levels.
Acute physical	Relevant, always included	There is a risk that outdoor workers may suffer heatstroke due to increased temperatures during the summer caused by climate change, significantly reducing work efficiency. Since some Kao plants are chemical plants, they cannot avoid this risk. Therefore, they must take measures such as reducing the number of continuous work hours. Kao evaluates the risks associated with workloads and costs.

Chronic physical	Relevant, always included	An example of the risks associated with chronic phisical is that it affects the operation of factories located along the coast due to rising sea levels. Kao's factory in the Philippines is adjacent to the coast. Therefore, although measures against storm surges have been implemented, by sea level rises, it is expected that the level of the storm surge rises more than now. Therefore, Kao regularly evaluates the risk of storm surges at the plant.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation

Carbon pricing mechanisms

Primary potential financial impact

Increased direct costs

Company-specific description

With global warming, extreme weather have begun to occur, including localized torrential rains, the spread of typhoon damage, frequent wildfires, and the melting of Siberian permafrost. In addition, there have been reports of people who suffer from heat stroke as a result of rising daytime peak temperatures and lasting days exceeding 40°C, leading to an increase in the number of people suffering from heat stroke. The goal of society is to achieve real zero greenhouse gas emissions by 2050 and to keep the global temperature rise below 1.5℃ compared to pre-industrial levels.

As society aims at 1.5°C, discussions are under way in many countries toward the introduction of carbon taxes as an effective means of achieving this goal.

Kao identified climate change as a risk and conducted a scenario analysis. Kao conducts qualitative and quantitative assessments of risks related to the realization of the "Vision we want to achieve by 2030" for the 2°C and 4°C scenarios, and identifies

items that have a major impact on Kao's business. Significant risks include the introduction and enhancement of a carbon tax, increased direct cost due to higher costs for oil-derived raw materials resulting from higher crude oil prices, and damage to facilities and other assets due to increased flood damage resulting from increased short-term rainfall. From IEA World Energy Outlook 2018, Kao projected a carbon-tax of 9,297 JPY/ ton-CO2 in 2030. Meanwhile, Kao's CO2 emissions (Scope1+2) in 2030 would be 1,774,000 tons, a 1.67-fold increase from 2017. If all of this is subject to an additional carbon tax, we recognize that an additional cost of 16,492,878,000 JPY will be required and that direct costs will be increased. This is a strategically significant risk for Kao to have a material strategic or financial impact.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

16,492,878,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Kao's CO2 emissions (Scope1+2) in 2030 would be 1,774,000 tons, a 1.67-fold increase from 2017 for BAU. Meanwhile, from IEA World Energy Outlook 2018, Kao expects a carbon-tax of 9,297 JPY/ ton-CO2 in 2030. From this, Kao's carbon tax in 2030 is assumed to be 16,492,878,000 JPY. This increases manufacturing costs as a direct expense and creates a financial impact. This is strategically significant of Kao's material strategic or financial impact.
1,774,000 tons-CO2 × 9, 297JPY/ tons-CO2 = 16,492,878,000 JPY

Cost of response to risk

625,000,000

Description of response and explanation of cost calculation

In order to promote efforts to realize a decarbonizing society, it is recognized that the introduction of carbon pricing, including carbon tax, is required internationally, and discussions on the introduction of carbon tax, etc. are in progress in many countries. When carbon pricing is introduced in the future, if no GHG-reduction activities are

implemented, a large amount of additional costs, such as carbon tax, will be required, and Direct Cost will be increased. To this end, Kao has established a system to promote energy-saving activities at each of its sites, and is continuing to monitor energy consumption, as well as implementing thorough energy-saving activities, such as reducing energy loss such as waste heat, upgrading to highly efficient equipment, and streamlining manufacturing processes. Kao is also promoting the installation of solar panels as a means of utilizing energy with low CO2 emissions.
In 2020, Kao implemented the following two initiatives to reduce the use of energy in its direct operations. The first is efforts related to the effective use of heat, such as improving heating methods by steam, enhancing heat insulation, and upgrading steam traps to energy-saving types. CO2 emissions were reduced by approximately 7,000 tons at Malaysian and Philippine plants. Second, through efforts to reduce energy consumption through renewal of facilities and equipment (air conditioning, LED-lighting, compressors, boilers, freezers, and inverters for pumps), Kao reduced CO2 emissions by approximately 500 tons at all its plants. In 2020, Kao reduced its CO2 by approximately 7,500 tons, including the above 1 and 2 activities.
In order to reduce CO2 significantly, the departments promoting energy-saving activities at individual plants are investigating the possibility of investing in renewable energy, such as purchasing electricity from renewable energy sources and self-consuming photovoltaic power generation.
In 2020, Kao invested 625 million JPY in facilities to reduce Scope1+2 emissions.
265,000,000 JPY (Japan) + 360,000,000 JPY (Asia, Europe and the Americas) = 625,000,000 JPY

Comment

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical

Increased severity and frequency of extreme weather events such as cyclones and floods

Primary potential financial impact

Increased capital expenditures

Company-specific description

Kao Group's Pilipinas Kao, Inc. is located in the Philippines. It manufactures higher alcohol, fragrance materials, etc., and has facilities with a book value of JPY 14,892,000,000. If Pilipinas Kao, Inc.'s production facilities are damaged, production volume is reduced, and some production items cannot be manufactured, Kao will be

unable to supply chemical products in response to customers' demands, and there is a risk of delays in the production of detergents using these products as raw materials and a decline in production volume.
On the other hand, typhoons approaching or landing in the Philippines due to climate change are becoming stronger and the damage is on the rise.
The damage rate of the capital stock of enterprises due to inundation is said to be 8.7% in underfloor flooding. The above risks have a financial impact, such as an increase in capital investment expenses. At least 1,295,604,000 JPY of capital expenditure is required to return the plant to normal when it is damaged at this rate. This is strategically significant of Kao's material strategic or financial impact.
14,892,000,000 JPY x 8.7% = 1,295,604,000 JPY

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

1,295,604,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Kao Group's Pilipinas Kao, Inc. is located in the Philippines. It manufactures higher alcohol, perfume materials, etc., and has facilities with a book value of JPY 14,892,000,000. If Pilipinas Kao, Inc.'s production facilities are damaged, production volume is reduced, and some production items cannot be manufactured, Kao will be unable to supply chemical products in response to customers' demands, and there is a risk of delays in the production of detergents using these products as raw materials and a decline in production volume.
On the other hand, typhoons approaching or landing in the Philippines due to climate change are becoming stronger and the damage is on the rise.
The damage rate of the capital stock of enterprises due to inundation is said to be 8.7% in underfloor flooding. The above risks have a financial impact, such as an increase in capital investment expenses. At least 1,295,604,000 JPY of capital expenditure is required to return the plant to normal when it is damaged at this rate. This is strategically significant of Kao's material strategic or financial impact.
14,892,000,000 JPY x 8.7% = 1,295,604,000 JPY

Cost of response to risk

5,000,000

Description of response and explanation of cost calculation

If inundation occurs at the plant and the production facility is damaged, capital expenditures will be required to restore the facility. Pilipinas Kao, Inc. is located along the coast, it is important to take measures to reduce the risk of flooding due to typhoons and storm surges. Accordingly, Pilipinas Kao, Inc. decided to create mangrove forests on the coast and enhance the natural disaster prevention function. Since 2010, Pilipinas Kao, Inc. has built mangrove forests on the coast and continued to do so in 2020.
5 million yen as expenses for purchasing, planting and maintaining mangroves.
0.2 million JPY (purchase of mangrove seedlings) + 4.8 million JPY (personnel expenses for tree planting, maintenance, and management) = 5 million JPY

Comment

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Downstream

Risk type & Primary climate-related risk driver

Market
Changing customer behavior

Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Company-specific description

Kao's Fabric & Home Care business, which accounted for 27.1% of Kao's remuneration in 2020, is comprised of products closely linked to the daily lives of consumers, such as laundry products (laundry detergents, finishing agents, and bleaches). In Japan, Kao's main market, laundry is usually dried outdoors on clear days and indoors on rainy days. In Japan, the use of laundry products depends on the weather conditions, and future weather changes due to climate change may have a major impact on the market for laundry products. The fabric and home care market, which includes laundry products in Japan, grew 3.3% in 2020 compared to the previous year and is expected to continue growing.
Kao's introduction of new products creates the risk that if it does not grow, it will lead to a decline in sales, rather than an increase in sales.
Kao's domestic fabric and home care business in 2020 generated 324,250,000,000 JPY in remuneration, of which 3.3% was approximately 10,700,250,000 JPY. Losing this opportunity is the risk of Kao having a significant strategic or financial impact (strategically significant).

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

10,700,250,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Kao's Fabric & Home Care business, which accounted for 27.1% of Kao's remuneration in 2020, is comprised of products closely linked to the daily lives of consumers, such as laundry products (laundry detergents, finishing agents, and bleaches). In Japan, Kao's main market, laundry is usually dried outdoors on clear days and indoors on rainy days. In Japan, the use of laundry products depends on the weather conditions, and future weather changes due to climate change may have a major impact on the market for laundry products. The fabric and home care market, which includes laundry products in Japan, grew 3.3% in 2020 compared to the previous year and is expected to continue growing.

It is believed that products of many of the growth, that appeal for the smell. Kao's financial impact is that the introduction of new products will lead to a decline in sales, rather than an increase in sales, if it is not able to address its growth. Kao's domestic fabric and home care sales in 2020 amounted to 324,250,000,000 JPY, of which 3.3% were 10,700,250,000 JPY. Losing this opportunity is the risk of Kao having a strategically significant impact on its finance.

324,250,000,000 JPY×3.3%=10,700,250 ,000 JPY

Cost of response to risk

33,900,000,000

Description of response and explanation of cost calculation

Status and background:

Kao's Fabric & Home Care business, which accounted for 27.1% of Kao's remuneration in 2020, is comprised of products closely linked to the daily lives of consumers, such as laundry products (clothing detergents, finishing agents, and bleach). In Japan, Kao's main market, laundry is usually dried outdoors on clear days and indoors on rainy days.

Tactics :

In Japan, the use of laundry products depends on the weather conditions, and future weather changes due to climate change may have a major impact on the market for laundry products. On the other hand, the fabric and home care market, which includes laundry products in Japan, grew by 3.3% year-on-year in 2020 and is expected to continue growing. Kao's financial impact is that the introduction of new products will lead to a decline in sales, rather than an increase in sales, if it is not able to address its growth.
Actions performed:
Kao conducted a climate change scenario analysis in 2020 to investigate future changes in weather and the risks that changes in weather may have on the market for laundry products.
Results obtained:
Climate change scenario analysis showed that when the average temperature rises by 2°C, Japan's weather will not change in the number of sunny days in the summer, increasing the frequency of heavy rains and storm surges caused by strong cyclones and typhoons, i.e. higher humidity days. Drying clothes indoors on humid days produces odors that do not occur when dried outdoors, which may increase demand for smell-appealing laundry products and expand the market for laundry products. Failure to do so may result in increased sales and lower sales. Kao decided to strengthen R&D to increase the number of products that appeal for the smells, such as a product "Wide Hyter CLEAR HERO Deodorizing Gel" launched in 2020, and to increase production capacity.
In 2020, we spent 33.9 billion JPY on research and development in the Fabric & Home Care business and on expanding manufacturing facilities.
10.2 billion JPY (R&D expenses) + 23.7 billion JPY (manufacturing facility expansion expenses) = 33.9 billion JPY

Comment

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Opp1

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Use of more efficient production and distribution processes

Primary potential financial impact

Reduced direct costs

Company-specific description

Kao is a manufacturer and has more than 40 manufacturing bases in Japan, Asia, Europe and the Americas. These bases consume approximately 5,000 GWh of energy every year to manufacture products. The cost is over 10 billion yen. Kao consumes almost the same amount of fossil fuel for heat utilization and electricity for facility operation. At the same time, Kao is targeting net sales of JPY 2.5 trillion in 2030 and operating income of 17% (currently around 14%). Efforts to reduce energy use and reduce costs will lead to lower manufacturing costs and provide an important opportunity to increase operating income. In addition, Kao's climate change scenario analysis conducted in 2019 showed that fossil fuel prices would increase under the 2°C scenario. Therefore, for Kao, which uses a large amount of fossil fuels, reducing energy consumption for manufacturing will lead to a reduction in manufacturing costs, which is a major opportunity to achieve the operating profit target for 2030.
Kao has established a system to promote energy-saving activities at each of its sites, and is continuing to monitor energy consumption, as well as implementing thorough energy-saving activities such as reducing energy loss such as waste heat, upgrading to highly efficient equipment, and streamlining manufacturing processes.
In 2020, Kao implemented the following two initiatives to reduce the use of energy in direct operations. The first is efforts related to the effective use of heat, such as improving heating methods by steam, enhancing heat insulation, and upgrading steam traps to energy-saving types. The second is efforts to reduce energy consumption through the renewal of facilities and equipment (air conditioning, LED lighting, compressors, boilers, freezers, and pumps with inverters).
As a result of these activities in 2020, the amount of energy used by 110GWh was reduced, and the amount of direct cost reduced was JPY 266 million.
Kao plans to continue these energy-saving activities, and therefore, we expect to reduce this direct cost every year in the future.

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

266,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Kao is a manufacturer and has more than 40 manufacturing bases in Japan, Asia, Europe and the Americas. These bases consume approximately 5,000 GWh of energy every year to manufacture products. The cost is over 10 billion yen. Kao consumes almost the same amount of fossil fuel for heat utilization and electricity for facility operation. At the same time, Kao is targeting net sales of JPY 2.5 trillion in 2030 and operating income of 17% (currently around 14%). Efforts to reduce energy use and reduce costs will lead to lower manufacturing costs and provide an important opportunity to increase operating income. In addition, Kao's climate change scenario analysis conducted in 2019 showed that fossil fuel prices would increase under the 2°C scenario. Therefore, for Kao, which uses a large amount of fossil fuels, reducing energy consumption for manufacturing will lead to a reduction in manufacturing costs, which is a major opportunity to achieve the operating profit target for 2030.
In 2020, Kao implemented the following two initiatives to reduce the use of energy in direct operations. The first is efforts related to the effective use of heat, such as improving heating methods by steam, enhancing heat insulation, and upgrading steam traps to energy-saving types. The second is efforts to reduce energy consumption through the renewal of facilities and equipment (air conditioning, LED lighting, compressors, boilers, freezers, and pumps with inverters). As a result of these activities in 2020, the amount of energy used by 110GWh was reduced, and the amount of direct cost reduced was JPY 266 million.
Kao plans to continue these energy-saving activities, and therefore, we expect to reduce this direct cost every year in the future.
104 million JPY (Japan) + 162 million JPY (Asia, Europe, Americas) = 266 million JPY

Cost to realize opportunity

625,000,000

Strategy to realize opportunity and explanation of cost calculation

Kao is a manufacturer and has more than 40 manufacturing bases in Japan, Asia, Europe and the Americas. These bases consume approximately 5,000 GWh of energy every year to manufacture products. The cost is over 10 billion yen. Kao consumes almost the same amount of fossil fuel for heat utilization and electricity for facility operation. At the same time, Kao is targeting net sales of JPY 2.5 trillion in 2030 and operating income of 17% (currently around 14%). Efforts to reduce energy use and reduce costs will lead to lower manufacturing costs and provide an important opportunity

to increase operating income. In addition, Kao's climate change scenario analysis conducted in 2019 showed that fossil fuel prices would increase under the 2°C scenario. Therefore, for Kao, which uses a large amount of fossil fuels, reducing energy consumption for manufacturing will lead to a reduction in manufacturing costs, which is a major opportunity to achieve the operating profit target for 2030.
Kao has decided to make continuous efforts to reduce energy consumption during manufacturing, establish a system to promote energy-saving activities at each business site, continue monitoring energy consumption, reduce energy loss such as waste heat, upgrade to highly efficient equipment, and rationalize manufacturing processes, and conduct continuous activities to conserve energy.
In 2020, Kao reduced waste heat at plants in the Philippines and Malaysia, where a large amount of heat is used, and worked to increase the efficiency of use as described above. In addition, all Kao plants conducted grassroots energy conservation activities, including the rationalization of manufacturing processes. To achieve these goals, Kao invested 625 million JPY in 2020.
265 million JPY (Japan) +365 million JPY (Asia, Europe, and the Americas) = 625 million JPY

Comment

Identifier
Opp2

Where in the value chain does the opportunity occur?
Downstream

Opportunity type
Products and services

Primary climate-related opportunity driver
Development and/or expansion of low emission goods and services

Primary potential financial impact
Increased revenues resulting from increased demand for products and services

Company-specific description
Kao's fabric and home care business, which accounted for 27.1% of Kao's remuneration in 2020, is comprised of products closely linked to the daily lives of consumers, such as laundry products (laundry detergents, finishing agents, and bleaches). In Japan, Kao's main market, laundry is usually dried outdoors on clear days and indoors on rainy days. The fabric and home care market, which includes laundry products in Japan, grew 3.3% in 2020 compared to the previous year and is expected to continue growing.
Kao conducted a climate change scenario analysis in 2020 to investigate future changes in weather and the potential for changes in weather to the market for laundry products. The results of the analysis showed that the weather in Japan would not change in the number of sunny days in the summer when the average temperature rose

by 2°C, and the temperature would rise. Such changes in weather can lead to changes in clothing behavior, i.e., increased frequency of sweating and changing clothes, resulting in an increase in the amount of laundry and an increase in the number of laundry washes.
These changes in laundry habits have resulted in increased demand related to the Fabric & Home Care business and opportunities for increased sales in this business.
The fabric and home care market, which includes laundry products in Japan, grew 3.3% in 2020 compared to the previous year due to changes in laundry habits and is expected to continue growing. We expect this growth to continue for some time in the future.
Kao's domestic fabric and home care sales in 2020 were 324,250 million JPY. We expect a 3.3% (10,700,250,000 JPY) increase in this sales due to changes in laundry habits.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

10,700,250,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Kao's fabric and home care business, which accounted for 27.1% of Kao's remuneration in 2020, is comprised of products closely linked to the daily lives of consumers, such as laundry products (laundry detergents, finishing agents, and bleaches). In Japan, Kao's main market, laundry is usually dried outdoors on clear days and indoors on rainy days.
The fabric and home care market, which includes laundry products in Japan, grew 3.3% in 2020 compared to the previous year and is expected to continue growing.
Kao conducted a climate change scenario analysis in 2020 to investigate future changes in weather and the potential for changes in weather to the market for laundry products. The results of the analysis showed that the weather in Japan would not change in the number of sunny days in the summer when the average temperature rose by 2°C, and the temperature would rise. Such changes in weather can lead to changes in clothing behavior, i.e., increased frequency of sweating and changing clothes, resulting in an increase in the amount of laundry and an increase in the number of laundry washes.

These changes in laundry habits have resulted in increased demand related to the Fabric & Home Care business and opportunities for increased sales in this business.
The fabric and home care market, which includes laundry products in Japan, grew 3.3% in 2020 compared to the previous year due to changes in laundry habits and is expected to continue growing. We expect this growth to continue for some time in the future.
Kao's domestic fabric and home care sales in 2020 were 324,250 million JPY. We expect a 3.3% (10,700,250,000 JPY) increase in this sales due to changes in laundry habits.
324,250,000,000 JPY × 3.3% = 10,700,250,000 JPY

Cost to realize opportunity

33,900,000,000

Strategy to realize opportunity and explanation of cost calculation

Kao's fabric and home care business, which accounted for 27.1% of Kao's remuneration in 2020, is comprised of products closely linked to the daily lives of consumers, such as laundry products (laundry detergents, finishing agents, and bleaches). In Japan, Kao's main market, laundry is usually dried outdoors on clear days and indoors on rainy days.
The fabric and home care market, which includes laundry products in Japan, grew 3.3% in 2020 compared to the previous year and is expected to continue growing.
Kao conducted a climate change scenario analysis in 2020 to investigate future changes in weather and the potential for changes in weather to the market for laundry products. The results of the analysis showed that the weather in Japan would not change in the number of sunny days in the summer when the average temperature rose by 2°C, and the temperature would rise. Such changes in weather can lead to changes in clothing behavior, i.e., increased frequency of sweating and changing clothes, resulting in an increase in the amount of laundry and an increase in the number of laundry washes.
Japan's population peaked in 2004 and has declined every year since then until 2020, and is expected to continue declining in the future. As a result, we believe that the reason for the 3.3% growth in the fabric and home care market, including laundry products in Japan in 2020 was not due to population growth, but due to changes in laundry habits. The change in laundry habit expected by scenario-analysis, i.e., the increased number of washes, results in the "opportunity" of Product and service laundry detergent, which can be washed in a short period of time.

Like the 2009 Attack NEO and the 2019 Attack ZERO, Kao decided to strengthen R&D to increase the number of "one rinse" detergents that can be washed in a short period of time, and to increase production capacity.
In 2020, we spent 33.9 billion JPY on research and development in the Fabric & Home Care business and on expanding manufacturing facilities.
10.2 billion JPY (R&D cost) +23.7 billion JPY (manufacturing facility expansion cost) = 33.9 billion JPY

Comment

Identifier

Opp3

Where in the value chain does the opportunity occur?

Upstream

Opportunity type

Markets

Primary climate-related opportunity driver

Access to new markets

Primary potential financial impact

Increased access to capital

Company-specific description

ESG investment is drawing attention worldwide. Decarbonization is an urgent issue in particular, and it is hoped that active investment will be made in companies that are actively tackling this issue, and that efforts will be promoted so that society as a whole will be free of carbon. Kao is targeting sales of JPY2.5 trillion in 2030 (1.67 times the 2017 level). Therefore, it is necessary to procure funds from the market in the future, and reducing the cost of procuring these funds is a challenge. Kao established the ESG Strategic "Kirei Lifestyle Plan" in 2019. One of the key themes of this initiative was decarbonization, which led to a long-term plan of zero carbon in 2040 and negative carbon in 2050. At the same time, we set targets for 2030 of a 55% reduction in Scope1+2 and a 22% reduction in LC-LO2. In order to achieve these goals, Kao has decided to take action to reduce carbon emissions throughout the company (company-wide).
In 2020, as a result of decarbonization activities, Scope1+2 was reduced by 15% and LC-LO2 by 4%. In addition, we installed solar power generation facilities at four sites, including the Sumida Plant in Japan. If Kao's reputation is enhanced through such activities, it is expected that in the future, if we assume that we will issue bonds totaling 50 billion JPY with a maturity of 7 years, we will be able to set an interest rate of 0.1%, which is 0.3% lower than the average interest rate of the bonds in the world of 0.4%. In doing so, Kao's funding costs will be reduced by 1,050 million JPY. This is a significant strategic opportunity.

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

1,050,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

ESG investment is drawing attention in the world. It is hoped that efforts to reduce carbon emissions will lead to the decarbonization of society as a whole. Kao needs to raise funds from the market in order to increase sales, and the reduction of procurement costs is an issue. In 2019, Kao established the ESG Strategy "Kirei Lifestyle Plan" and decided that the entire company (company-wide) would take action to reduce carbon emissions.

In 2020, as a result of decarbonization activities, Kao's Scope1+2 was reduced by 15% and its LC-LO2 was reduced by 4%. Kao also installed solar power generation facilities in four locations. If the reputation is enhanced through such activities, it is expected that in the future Kao will be able to set an interest rate of 0.1%, which is 0.3% lower than the average interest rate of the bonds in the world of 0.4%, assuming a total of 50 billion JPY debentures (maturity date of 7 years).

In doing so, Kao's funding costs will be reduced by 1,050 million JPY. This is a significant strategic opportunity..

550 billion JPY × 0.3 %/Year × 7 year=1,050 million JPY

Cost to realize opportunity

3,601,000,000

Strategy to realize opportunity and explanation of cost calculation

ESG investment is drawing attention in the world. It is hoped that efforts to reduce carbon emissions will lead to the decarbonization of society as a whole. Kao needs to raise funds from the market in order to increase sales, and the reduction of procurement costs is an issue. Kao decided to strengthen its ESG activities, and in 2019, established the ESG Strategy "Kirei Lifestyle Plan" and decided to take action for decarbonization throughout the company (company-wide).

In 2020, as a result of decarbonization activities, Kao's Scope1+2 was reduced by 15% and its LC-LO2 was reduced by 4%. Kao also installed solar power generation facilities in four locations.

In 2020, Kao invested 625 million JPY to reduce Scope1+2 emissions and 2,976 million JPY to reduce Scope3 emissions, for a total of 3,601 million JPY, in response to company-wide efforts to decarbonization.

625 million JPY (Scope1+2 reductions) + 2,976 million JPY (Scope3 reductions) = 3,601 million JPY

Comment

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?

Yes, and we have developed a low-carbon transition plan

C3.1a

(C3.1a) Is your organization's low-carbon transition plan a scheduled resolution item at Annual General Meetings (AGMs)?

	Is your low-carbon transition plan a scheduled resolution item at AGMs?	Comment
Row 1	No, and we do not intend it to become a scheduled resolution item within the next two years	

C3.2

(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?

Yes, quantitative

C3.2a

(C3.2a) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenarios and models applied	Details
2DS	- How the selected scenario(s) were identified, with reference to the inputs, assumptions and analytical methods used. Kao analyzed the climate-related risks with the scenarios on the assumption that reduction efforts based on the Paris Agreement will be made throughout the world for 2050. Since Kao has set an SBT target, we used the 2°C scenario (2DS), which is one of the emission scenarios envisioned by the SBT for analyzing the climate-related risks with the scenarios. The input information includes the IPCC 5th Report and IEA World Energy Outlook. Examples of the input information include climate scenarios for each assumed temperature increase, sector-specific example measures, and regulations imposed by the government. - A description of the time horizon(s) considered, and why they are relevant to your organization. Kao has set a new greenhouse gas emission target by 2030, and has also given directions for reduction efforts based on the Paris Agreement.

	Accordingly, we have conducted a scenario analysis for 2030. - A description of the areas of your organization that have been considered as part of the scenario analysis. Since our analysis suggests that the scenario analysis will bring various risks and opportunities to our segments (Beauty Care, Human Health Care, Fabric & Home Care, and Chemical) and affect our business strategies, we target all of our business divisions and offices. - A company specific description summary of the results of the conducted scenario analysis. In order to achieve the sales target defined in the K30, we predict that we will emit 1.6 times more CO2. However, we found out that the 2DS requires us to reduce our emissions to 0.8 times the current level. This result shows that we must double the current CO2 efficiency. - A description of how the results of the scenario analysis have informed your business objectives and strategy. As a way of achieving the above efficiency, we have set the following policies as requirements: upgrading the current improvement rate for energy usage efficiency; installing renewable electricity facilities and purchasing renewable electricity to reduce scope 2 emissions; and developing new technologies to reduce scope 1 emissions. Reducing energy usage in businesses that consume a large amount of energy (in particular the Human Health Care and Chemical businesses, which have a large production volume and use a great amount of process energy) is an important issue in our business strategy. In addition, since the temperature rise in the summer is expected to continue, the development of summer products was promoted, and it was introduced to the market from time to time, aiming to increase sales. - A case study/example of how the results of scenario analysis have directly influenced your business objectives and strategy. In accordance with the above policies, in 2020 Kao introduced and launched and began operating solar panels (total generation capacity: 4.597 MWh) at Kao group plants, including the Sumida complex.

C3.3

(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	Risks and opportunities: The scenario analyses conducted by Kao in 2020 for 2030 show that: Consumers of Kao's products tend to demand low-carbon products and other ethical products, and demand for summer products

		increases due to the prolonged summer season due to rising temperatures. Accordingly, it is part of Kao's growth strategy to strengthen ethical products and products for which demand is rising in the summer. Strategy: An important strategy in the short-, medium-and long-term as demand for ethical consumption is rising, summer temperatures are already apparent, and these trends are expected to continue in the future. This is clearly stated in Kao's "Kirei Lifestyle Plan" ESG strategies as items that Kao must realize in order to realize Kirei Lifestyle of consumers. [The most important case study of strategic decision-making] Due to the continued temperature increase, in Japan, Kao's core market, summer temperatures generally exceeded 30℃. As a result, demand for products that enable people to live without worrying about the smell of their perspiration and to live comfortably even at high temperatures has increased, and it has become necessary to develop products that meet this demand. In our principal areas of business, the HighGene & Living Care segment, we made the following key strategic decisions to respond to these consumer demands: "Humming", the mainstay brand of a fabric foftener, should be equipped with (i) measures to combat sweat odors and (ii) technology to feel cool by wearing clothes, the "Cool Feeling Technology." As a result, in 2020, "Humming", which is marketed in Japan, marketed 100% of products incorporating either of these technologies. As a result, sales in the HighGene & Living Care segment in Japan increased 5.4%.
Supply chain and/or value chain	Yes	Risks and Opportunities: Forests that absorb carbon dioxide worldwide have greatly decreased, and about 20% of GHG emissions are due to deforestation. Malaysia and Indonesia are the countries in which the area of forests has greatly decreased. One of the reasons for this is that they cut down tropical rainforests in order to expand their palm plantations. Stop of deforestation related to palm plantations in Malaysia and Indonesia is an initiative that does not increase GHG emissions. Kao procures a large amount of palm oil. Kao also aims to increase sales to JPY2.5 trillion in 2030 (more than 1.5 times the current level). To achieve this goal, Kao needs to increase its procurement of palm oil, and it is a very important risk and opportunity for palm

		plantations to grow sustainably without any new deforestation, that is, to increase the efficiency of Palm plantations. Strategy: Increasing the productivity of palm plantations in Malaysia and Indonesia, the major suppliers of palm oil, is an important strategy for Kao to procure palm oil. Under this strategy, Kao has set a goal of ensuring traceability to palm plantations by 2025 and is working with suppliers and others. [The most important case study of strategic decision-making] Kao procures palm kernel oil from Malaysia and Indonesia, and recognizes that it is important for palm plantations in both countries to increase productivity without new deforestation. Small-scale palm plantations, which account for about 40% of palm fruit production in Indonesia in particular, are faced with major social problems such as low productivity, poor working conditions, and poor living conditions, and urgent solutions are required. Kao made the following major strategic decisions: Kao, together with two Indonesian companies , decided to work together to help resolve a variety of issues, including improving the productivity of small-scale palm plantations. In October 2020, the three companies jointly announced that by 2030, they would provide 5000 small-scale palm plantations with SMILE (Smallholder Inclusion for better Livelihood & Empowerment) programs aimed at raising productivity and supporting them in obtaining RSPO certification.
Investment in R&D	Yes	Risks and Opportunities: Demand for products that contribute to sustainable development from consumers and industry is increasing in order to realize SDGs, including climate change. As a result, expectations for Kao's innovation, which places the utmost importance on "essential research," which approaches the essence of things, are increasing year by year. Kao recognizes this as an important growth opportunity. Kao has set up KPIs for 19 key initiatives in the ESG Strategic KLP or "Kirei Lifestyle Plan". Major themes include decarbonization, water conservation, and zero waste, as well as improvement of QOL and perpass-driven brands that encourage behavioral changes in consumers. Strategy: Our R&D strategy is to drive business growth strongly through the achievement of KLP by accelerating innovation, including climate change resolution. Kao's

		K2025 Medium-Term Management Plan, which runs through 2025, includes becoming a company that is indispensable to a sustainable society, and becoming stronger by investing. [The most important case study of strategic decision-making] As a result of climate change scenario analysis, Kao confirmed that the supply of plastics used in essential containers and packaging for Kao products is one of the important risks and opportunities during the transition period to a net-zero society in the future. The challenge for Kao is to quickly build a recycling-oriented economy, including plastic packaging, ahead of society. Recognizing the need, in September 2019 Kao announced to the public that it would approach both reduction innovation to reduce Fossil based plastics and recycling innovation to recycle used plastics. In 2020, Kao formulated the K25 medium-term group management plan. These policies (objectives) include "Positive Recycling" (imagining a new business through reuse) as key achievements. Kao's R&D Division established the Recycling Science Research Center in 2020, which was advised and approved by the Executive Committee, chaired by the CEO. Kao made a major strategic decision to create the center in 2020. The center develops containers that use Recycled plastics, and researches and develops social systems that efficiently collect and recycle used plastic containers and packaging. In 2020, nine development projects to increase the use of recycled plastics were promoted as external stakeholders.
Operations	Yes	Risks and Opportunities: Since October 2018, when IPCC issued its 1.5°C Special Report, global companies have been accelerating their efforts to raise their GHG reduction targets to 1.5°C levels. While there is a risk that Kao will not be proactive in addressing climate change unless we take advantage of this trend, we expect that setting more aggressive targets will lead to opportunities and be recognized as a leading company in ESG activities. Strategy: Kao formulated and announced a new medium-to long-term strategy on climate change, which calls for zero carbon by 2040 and carbon-negative by 2050. Kao clarifies this strategy in 2021KLP Progress Report.

		[The most important case study of strategic decision-making] While the world was accelerating the move to raise the reduction target to 1.5℃, Kao had only a 2℃ reduction target, which was behind the world trend. Kao's task was to set a target of 1.5℃ and a net zero target (if possible, a more aggressive target). Kao's ESG Committee Secretariat established a new goal of decarbonization. The goals were discussed and approved by the ESG Committee, which is chaired by the CEO, after deliberation at the ESG Promotion Council. These include "Aiming for zero carbon by 2040 and carbon-negative by 2050," "Reducing carbon emissions by 55% (Scope1+2) by 2030," and achieving RE100 by 2030. At the same time, the ESG Committee also approved new technological developments to convert carbon dioxide into raw materials to reduce Scope1+2 emissions. These are important strategic decisions. Based on this strategy, Kao's previous mid-term plans and procedures to achieve the targets are revisited within Kao.

C3.4

(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Direct costs Capital expenditures	Risks and Opportunities: Since October 2018, when IPCC issued its 1.5°C Special Report, global companies have been accelerating their efforts to raise their GHG reduction targets to 1.5°C levels. While there is a risk that Kao will not be proactive in addressing climate change unless we take advantage of this trend, we expect that setting more aggressive targets will lead to opportunities and be recognized as a leading company in ESG activities. Strategy: Kao formulated and announced a new medium-to long-term strategy on climate change, which calls for zero carbon by 2040 and carbon-negative by 2050. Kao clarifies this strategy in 2021KLP Progress Report. [The most important case study of strategic decision-making] While the world was accelerating the move to raise the reduction target to 1.5℃, Kao had only a 2℃ reduction target, which was behind the world trend. Kao's task was to set a target of 1.5℃ and a net zero target (if

		possible, a more aggressive target). Kao's ESG Committee Secretariat established a new goal of decarbonization. The goals were discussed and approved by the ESG Committee, which is chaired by the CEO, after deliberation at the ESG Promotion Council. These include "Aiming for zero carbon by 2040 and carbon-negative by 2050," "Reducing carbon emissions by 55% (Scope1+2) by 2030," and achieving RE100 by 2030. At the same time, the ESG Committee also approved new technological developments to convert carbon dioxide into raw materials to reduce Scope1+2 emissions. These are important strategic decisions. Based on this strategy, Kao's previous mid-term plans and procedures to achieve the targets are revisited within Kao. [Case Study] "Expansion of Renewable Power Generation Facilities" is cited as a capital investment plan for capital expenditure and climate-related risks and opportunities that affected direct cost plans. The case studies are as follows. [Background and Issues] In Japan, policy targets for the improvement of the ratio of renewable energy sources have been set, and policy packages for the expansion of the renewable energy market are being promoted. As part of these efforts, measures are being taken to reduce not only the cost of solar panels but also the cost of construction work. Therefore, it is expected that investment in renewable energy generation facilities and unit price of purchased renewable energy will decrease in the future. On the other hand, in Japan, as a means of purchasing renewable energy power, "non-fossil certificates" are stable from the viewpoint of supply volume, but they are unparalleled expensive in the world at 1.2 JPY/kWh. For this reason, Kao must thoroughly investigate the introduction of renewable energy facilities and investigate the suppliers of renewable energy in accordance with Kao's basic policy of "expanding the procurement of renewable energy while meeting Kao's criteria for equipment installation." [Actions/Implementation Examples] Kao has declared 100% reuse of energy (RE100) in order to encourage more suppliers to make suggestions in order to drive the expansion of domestic demand for renewable energy, and has been promoting efforts from two perspectives: introduction of renewable energy power generation facilities and procurement of renewable energy. Kao has been investigating projects that can be installed within the team in charge of energy conservation in the SCM division, which has operated our plant and logistics for the past. The actual implementation plan and budget are reviewed and reflected in the capital expenditure plan for the following year. Kao makes investment decisions based on rigorous business feasibility assessments, taking into account Internal Carbon Pricing when making actual capital expenditures.

		In 2020, Kao started operation of four new solar power plants, including Sumida Office in Tokyo and Pilipinas Kao Inc in the Philippines. In addition to the 1,600 MW photovoltaic power generation facilities at the Tochigi Plant, the Kao Group's renewable power plants generated 4,597 MW of electricity in 2020 (up 8% from 2019). For the case where the direct cost of renewable energy procurement is increased, the facility and quantity to be introduced are planned in the medium term, and the increment of the cost is incorporated into the annual direct cost plan. In actual procurement, the Purchasing Department strategically negotiates with the power supply supplier to determine the validity of the price. In 2020, four plants in China (Kao Commercial (Shanghai) Co., Ltd., Kao Chemical Corporation Shanghai, Kao (Hefei) Co., Ltd., and Kao Huludao Casting Materials Co., Ltd.) began procuring renewable electricity. [Results] Reflecting it in the capital expenditure plan (capital investment plan) has led to the realization of planned and efficient capital investment, and the installation of the renewable energy power generation facility is proceeding as planned. The introduction of renewable energy is also progressing systematically by incorporating the cost increase into the annual direct cost plan. We will continue to work to increase the use of renewable electricity based on a rigorous business feasibility assessment, while giving consideration to the balance between capital expenditures and increases in direct costs and sales and profits.

C3.4a

(C3.4a) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

Both absolute and intensity targets

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number

Abs 1

Year target was set

2018

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (market-based)

Base year

2017

Covered emissions in base year (metric tons CO2e)

1,058,113

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)

100

Target year

2030

Targeted reduction from base year (%)

22

Covered emissions in target year (metric tons CO2e) [auto-calculated]

825,328.14

Covered emissions in reporting year (metric tons CO2e)

899,816

% of target achieved [auto-calculated]

68.001415556

Target status in reporting year

Underway

Is this a science-based target?

Yes, and this target has been approved by the Science-Based Targets initiative

Target ambition

2°C aligned

Please explain (including target coverage)

a) baseline year emissions covered by target:1,058,113 (t-CO2)
b) emissions in 2020 : 899,816 (t-CO2)
c) (b/a -1)x100 = -15.0%
d) % achieved: 15(%)*100/22(%)=68.00(%)

Target reference number

Abs 2

Year target was set

2018

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (market-based) +3 (upstream & downstream)

Base year

2017

Covered emissions in base year (metric tons CO2e)

11,910,135

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)

95.42

Target year

2030

Targeted reduction from base year (%)

22

Covered emissions in target year (metric tons CO2e) [auto-calculated]

9,289,905.3

Covered emissions in reporting year (metric tons CO2e)

11,445,000

% of target achieved [auto-calculated]

17.7516879532

Target status in reporting year

Underway

Is this a science-based target?

Yes, and this target has been approved by the Science-Based Targets initiative

Target ambition

2°C aligned

Please explain (including target coverage)

a) baseline year emissions covered by target:11,910,135 (t-CO2)
b) emissions in 2020 : 11,445,000 (t-CO2)

c) (b/a -1)x100 =-3.9%
d) % achieved: -3.9(%)*100/22(%)=17.75(%)
The boundary of this target is consumer products in all of Kao group.

C4.1b

(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

Target reference number
Int 1

Year target was set
2009

Target coverage
Company-wide

Scope(s) (or Scope 3 category)
Scope 1+2 (market-based)

Intensity metric
Other, please specify
CO2e Metric tons per unit revenue

Base year
2005

Intensity figure in base year (metric tons CO2e per unit of activity)
1.02

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure
100

Target year
2020

Targeted reduction from base year (%)
35

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]
0.663

% change anticipated in absolute Scope 1+2 emissions
-9.38

% change anticipated in absolute Scope 3 emissions

0

Intensity figure in reporting year (metric tons CO2e per unit of activity)

0.651

% of target achieved [auto-calculated]

103.3613445378

Target status in reporting year

Achieved

Is this a science-based target?

No, but we are reporting another target that is science-based

Target ambition

Please explain (including target coverage)

a) Normalized baseline year emissions covered by target: 993,000 (t-CO2)
b) Normalized baseline year amount of sales: 971,000 (million-Yen)
c) a)/b)=1.02
d) Emissions in 2020: 900,000 (t-CO2)
e) Amount of sales in 2020: 1,382,000 (million-Yen)
f) d)/e)=0.651
g) [1- {c)-f)}/c)]*100=36.2(%)
h) % achieved: 36.2(%)/35(%)*100=103(%)
The boundary of this target is all Kao sites.

Target reference number

Int 2

Year target was set

2009

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (location-based) + 3 (upstream and downstream)

Intensity metric

Metric tons CO2e per unit revenue

Base year

2005

Intensity figure in base year (metric tons CO2e per unit of activity)

921

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

100

Target year

2020

Targeted reduction from base year (%)

35

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]

598.65

% change anticipated in absolute Scope 1+2 emissions

-35

% change anticipated in absolute Scope 3 emissions

-35

Intensity figure in reporting year (metric tons CO2e per unit of activity)

732

% of target achieved [auto-calculated]

58.6319218241

Target status in reporting year

Expired

Is this a science-based target?

No, but we are reporting another target that is science-based

Target ambition

Please explain (including target coverage)

a) Normalized baseline year emissions covered by target: 6,248,000 (t-CO2)
b) Normalized baseline year amount of sales: 678,000 (million-Yen)
c) a)/b)=9.2
d) Emissions in 2019: 7,328,000 (t-CO2)
e) Amount of sales in 2019: 1,00,576 (million-Yen)
f) d)/e)=7.3
g) {c)-f)}/c)=20.65(%)
h) % achieved: 20.65(%)*100/35(%)=59.00(%)

The boundary of this target is consumer products in Japan.

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?

No other climate-related targets

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	0	
To be implemented*	117	3,000
Implementation commenced*	1	0
Implemented*	207	138,495
Not to be implemented	4	

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative category & Initiative type

Energy efficiency in buildings

Lighting

Estimated annual CO2e savings (metric tonnes CO2e)

1,348

Scope(s)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
40,900,000

Investment required (unit currency – as specified in C0.4)
167,000,000

Payback period
4-10 years

Estimated lifetime of the initiative
3-5 years

Comment

Initiative category & Initiative type
Energy efficiency in production processes
Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)
6,094

Scope(s)
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
187,000,000

Investment required (unit currency – as specified in C0.4)
135,000,000

Payback period
1-3 years

Estimated lifetime of the initiative
1-2 years

Comment

Initiative category & Initiative type
Low-carbon energy generation
Solar PV

Estimated annual CO2e savings (metric tonnes CO2e)
2,443

Scope(s)
Scope 2 (market-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
32,400,000

Investment required (unit currency – as specified in C0.4)
304,000,000

Payback period
4-10 years

Estimated lifetime of the initiative
Ongoing

Comment

Initiative category & Initiative type
Low-carbon energy consumption
Low-carbon electricity mix

Estimated annual CO2e savings (metric tonnes CO2e)
128,583

Scope(s)
Scope 2 (market-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
0

Investment required (unit currency – as specified in C0.4)
0

Payback period
No payback

Estimated lifetime of the initiative
Ongoing

Comment

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Compliance with regulatory requirements/standards	We promote the introduction of methods with a lower CO2 reduction cost to achieve the reduction amounts required by law. We have reviewed the effectiveness of methods with a high-reduction potential by introducing them on a trial basis.
Dedicated budget for energy efficiency	We promote the introduction of methods with a lower CO2 reduction cost to achieve the reduction amounts required by law. We have reviewed the effectiveness of methods with a high-reduction potential by introducing them on a trial basis.
Dedicated budget for low-carbon product R&D	At the time an opportunity is located, we estimate the potential reduction amount with regard to customers in the product development stage, confirm with customers whether the reduction amount is attractive to them, and start development.
Dedicated budget for other emissions reduction activities	We promote the introduction of methods with a lower CO2 reduction cost. We have reviewed the effectiveness of methods with a high-reduction potential by introducing them on a trial basis.
Partnering with governments on technology development	When we estimate CO2 reduction costs in preparing budgets such as the energy-conserving investment and the low-carbon investment, we also include public assistance such as available subsidies.
Other	The methodologies mentioned above are all applicable to either Scope 1, 2, or 3, targeting the medium-term objective to reduce LC-CO2 by 35 percent by 2020, and their degree of effectiveness has been clarified.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation

Group of products

Description of product/Group of products

CO2 emission reduction products (including Water saving products) and less package material products on personal care business

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Addressing the Avoided Emissions Challenge- Chemicals sector

% revenue from low carbon product(s) in the reporting year

27

Comment

shown above indicates the sales ratio for products intended for Japanese consumers.

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start

January 1, 2017

Base year end

December 31, 2017

Base year emissions (metric tons CO2e)

653,145

Comment

Scope 2 (location-based)

Base year start

January 1, 2017

Base year end

December 31, 2017

Base year emissions (metric tons CO2e)

447,267

Comment

Scope 2 (market-based)

Base year start
January 1, 2017

Base year end
December 31, 2017

Base year emissions (metric tons CO2e)
404,968

Comment

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

Japan Ministry of the Environment, Law Concerning the Promotion of the Measures to Cope with Global Warming, Superceded by Revision of the Act on Promotion of Global Warming Countermeasures (2005 Amendment)

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)
616,385

Start date
January 1, 2020

End date
December 31, 2020

Comment

Past year 1

Gross global Scope 1 emissions (metric tons CO2e)

Start date

End date

Comment

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We are reporting a Scope 2, market-based figure

Comment

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based

443,419

Scope 2, market-based (if applicable)

283,430

Start date

January 1, 2020

End date

December 31, 2020

Comment

Past year 1

Scope 2, location-based

Scope 2, market-based (if applicable)

Start date

End date

Comment

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

Yes

C6.4a

(C6.4a) Provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure.

Source

7 gasses (except CO2) on scope 1 from Factories, Offices, Warehouses, sales car outside Japan

Relevance of Scope 1 emissions from this source

Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source

No emissions excluded

Relevance of market-based Scope 2 emissions from this source (if applicable)

No emissions excluded

Explain why this source is excluded

Data for Factories, Offices, Warehouses and sales car outside Japan had been collected only CO2. Based on the collected data in Japan, the total emissions of except CO2 from these sources is estimated to be less than 0.5% of all the emissions.

C6.5

(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Relevant, calculated

Metric tonnes CO2e

4,206,000

Emissions calculation methodology

Activity volume is input by type of raw material used for sold products. The emissions intensity used is the emissions intensity by type of raw material which set by Kao from the emissions intensity database (ver.2.0) prepared by the Ministry of the Environment and the Ministry of Economy, Trade and Industry in Japan and so on.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

24

Please explain

Activity volume is the investment amount. The emissions intensity used is the emissions intensity database (ver.2.0) prepared by the Ministry of the Environment and the Ministry of Economy, Trade and Industry in Japan. As for the activities in countries outside Japan, the emissions intensity in Japan is used also.

Capital goods

Evaluation status

Relevant, calculated

Metric tonnes CO2e

259,000

Emissions calculation methodology

Activity volume is the investment amount. The emissions intensity used is the emissions intensity database (ver.2.0) prepared by the Ministry of the Environment and the Ministry of Economy, Trade and Industry in Japan. As for the activities in countries outside Japan, the emissions intensity in Japan is used also.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status

Relevant, calculated

Metric tonnes CO2e

59,000

Emissions calculation methodology

Activity volume is the consumption of energy by type. The emissions intensity used is the emissions intensity database (ver.2.0) prepared by the Ministry of the Environment and the Ministry of Economy, Trade and Industry in Japan. As for the activities in countries outside Japan, the emissions intensity in Japan is used also.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO2e

249,000

Emissions calculation methodology

Activity volume is the case where the Kao Group is a cargo owner. Raw materials and such like having a cargo owner as the supplier are included in Category 1. Calculation methodology and the emission intensities Kao used obey under Law Concerning the promotion of the measures to cope with Global Warming in Japan .

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

Waste generated in operations

Evaluation status

Relevant, calculated

Metric tonnes CO2e

65,000

Emissions calculation methodology

Activity volume is classified by type of waste and processing . The emission intensity used is the emissions intensity database (ver.2.0) prepared by the Ministry of the Environment and the Ministry of Economy, Trade and Industry in Japan. As for the activities in countries outside Japan, the emissions intensity in Japan is used also.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

Business travel

Evaluation status

Relevant, calculated

Metric tonnes CO2e

4,000

Emissions calculation methodology

Activity volume is the number of employees. The emissions intensity used is the emissions intensity database (ver.2.0) prepared by the Ministry of the Environment and the Ministry of Economy, Trade and Industry in Japan.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

Employee commuting

Evaluation status

Relevant, calculated

Metric tonnes CO2e

18,000

Emissions calculation methodology

Activity volume is the numbers of employees and work days.The emissions intensity used is the emissions intensity database (ver.2.0) prepared by the Ministry of the Environment and the Ministry of Economy, Trade and Industry in Japan.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

Emission from these equipment has included in "Scope 1 and Scope 2"

Downstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO2e

111,000

Emissions calculation methodology

Activity volume is the weight of sold products which excluded Kao delivered to store directory. The emissions intensity used is the emissions intensity database (ver.2.0) prepared by the Ministry of the Environment and the Ministry of Economy, Trade and Industry in Japan.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

Processing of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO2e

116,000

Emissions calculation methodology

Activity volume is the number of sold of fatty alcohols, tertiary amine and many kinds of surface active agents. The emissions intensity used is model number which decided by result of the emission intensity on Kao factory. Kao processes these material same as our customers.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

Use of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO2e

4,653,000

Emissions calculation methodology

Calculated according to the scenario established by Kao. Activity volume is the amount of usage of electricity, gas, and such like in house from sold products. The emissions intensity used is set by Kao from the emissions intensity database (ver.2.0) prepared by the Ministry of the Environment and the Ministry of Economy, Trade and Industry in Japan and so on.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

End of life treatment of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO2e

1,438,000

Emissions calculation methodology

Calculated according to the scenario established by Kao. Activity volume is the type and volume of ingredients, containers and packaging and used water in house for each sold product. The emissions intensity used is set by Kao from the emissions intensity database (ver.2.0) prepared by the Ministry of the Environment and the Ministry of Economy, Trade and Industry in Japan and so on.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

Kao has no downstream leased assets.

Franchises

Evaluation status

Not relevant, explanation provided

Please explain

Kao has no Franchises.

Investments

Evaluation status

Relevant, calculated

Metric tonnes CO2e

6,000

Emissions calculation methodology

Activity volume is the number of shares of stock holding on the securities report by type of issue. The emissions intensity used is the latest figure for GHG emissions for each company according to the holding ratio of stocks. Please note that companies with no published data available are excluded from the calculation. Kao's share is calculated by multiplying the activity volume by emissions intensity and then dividing the number proportionally at the ratio of the number of shares owned by Kao to the amount of outstanding shares.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

Other (upstream)

Evaluation status

Please explain

Other (downstream)

Evaluation status

Please explain

C6.7

(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?

Yes

C6.7a

(C6.7a) Provide the emissions from biogenic carbon relevant to your organization in metric tons CO2.

	CO2 emissions from biogenic carbon (metric tons CO2)	Comment
Row 1	47,435.13	

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure

0.0000006511

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

899,816

Metric denominator

unit total revenue

Metric denominator: Unit total

1,381,997,000,000

Scope 2 figure used

Market-based

% change from previous year

1.45

Direction of change

Increased

Reason for change

CO2 emissions decreased significantly to 6.67% year-on-year but sales decreased to 8.00% year-on-year effected by COVID19. We are promoting the introduction of

renewable energy power at Kao Chemical Co., Ltd., Kao Manufacturing Germany, Kao Corporation S.A., Kao Chimigraf, Morton Brown, Kao USA, Kao Corporation Shanghai, Kao Chemical Corporation Shanghai, Kao Huludao Casting Materials Co., Ltd., Kao (Hefei) Co., Ltd., Kao Japan (Kawasaki Plant, Tochigi Plant, Kashima Plant, Odawara Plant, Toyohashi Plant), Kao Sanitary Products Ehime Co., Ltd., Kao Paper Fuji Co., Ltd., Kao Group Customer Marketing Co., Ltd., Kao Logistics Co Ltd. And we introduced new solar power generation facilities for private consumption at Kao-owned facilities at Kao Japan (Sumida Plant), Pilipinas Kao, Inc. and Kao Austlia in 2020.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?

Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	614,268	IPCC Fifth Assessment Report (AR5 – 100 year)
CH4	182	IPCC Fifth Assessment Report (AR5 – 100 year)
N2O	831	IPCC Fifth Assessment Report (AR5 – 100 year)
HFCs	1,081	IPCC Fifth Assessment Report (AR5 – 100 year)
PFCs	0	IPCC Fifth Assessment Report (AR5 – 100 year)
SF6	27	IPCC Fifth Assessment Report (AR5 – 100 year)
NF3	0	IPCC Fifth Assessment Report (AR5 – 100 year)

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)

Japan	241,841
Asia Pacific (or JAPA)	278,038
US, Latin America and Caribbean (USLAC)	45,238
Eastern Europe, Middle East, and Africa (EEMEA)	51,268

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By business division

C7.3a

(C7.3a) Break down your total gross global Scope 1 emissions by business division.

Business division	Scope 1 emissions (metric ton CO2e)
Production	603,761
Office,sales	12,625

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
Japan	171,975	67,638	915,987	173,788
Asia Pacific (or JAPA)	225,214	207,632	1,049,454	28,581
US, Latin America and Caribbean (USLAC)	19,306	6,397	117,795	13,168
Europe, the Middle East, Africa and Russia (EMEAR)	26,924	1,763	175,008	76,885

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By business division

C7.6a

(C7.6a) Break down your total gross global Scope 2 emissions by business division.

Business division	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Production	410,248	257,891
Offices, sales	33,171	25,540

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	34,960	Decreased	3.63	Due to the "change in renewable energy consumption" and "Change in output" in 2020, emissions decreased significantly. In 2020, 34,960 (tCO2e) was reduced by promoting emission reduction projects through the introduction of renewable energy. Since the total emissions of Scope 1 and Scope 2 in 2019 were 964,119 (tCO2e), we reached (-34,960/964,119)*100 = -3.63% (In other words, emissions decreased by 3.63% from the previous year).
Other emissions reduction activities	7,469	Decreased	0.77	In 2020, 7,469 (tCO2e) was reduced through energy conservation activities promoted throughout the Kao Group. Since the total emissions of Scope 1 and Scope 2 in 2019 were 964,119 (tCO2e), we reached (-7,469/964,119))*100 = -0.77% (In other words, emissions decreased by 0.77%).

Divestment	0	No change	0	
Acquisitions	0	No change	0	
Mergers	0	No change	0	
Change in output	21,592	Decreased	2.24	
Change in methodology	2,091	Decreased	0.22	
Change in boundary	0	No change	0	
Change in physical operating conditions	0	No change	0	
Unidentified	780	Decreased	0.08	
Other	2,588	Increased	0.27	

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Market-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 0% but less than or equal to 5%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes

Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	Yes
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	0	2,817,768	2,817,768
Consumption of purchased or acquired electricity		756,263	1,452,733	2,208,996
Consumption of purchased or acquired steam		0	49,247	49,247
Consumption of self-generated non-fuel renewable energy		4,900		4,900
Total energy consumption		761,163	4,319,748	5,080,911

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	No

Consumption of fuel for the generation of steam	Yes
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	Yes

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)

Motor Gasoline

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

27,392

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

27,392

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Emission factor

2.32166

Unit

metric tons CO2 per m3

Emissions factor source

GHG reporting protocol in Japan (in Japan case)

Comment

Fuels (excluding feedstocks)

Kerosene

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

10,913

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

10,913

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Emission factor

2.48948

Unit

kg CO2 per liter

Emissions factor source

GHG reporting protocol in Japan (in Japan case)

Comment

Fuels (excluding feedstocks)

Other, please specify

A-heavy oil

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

16,292

MWh fuel consumed for self-generation of electricity

1,089

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

15,203

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Emission factor

2.70963

Unit

kg CO2 per liter

Emissions factor source

GHG reporting protocol in Japan (in Japan case)

Comment

Fuels (excluding feedstocks)

Other, please specify

C-heavy oil

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

7,052

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

7,052

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Emission factor

2.99585

Unit

kg CO2 per liter

Emissions factor source

GHG reporting protocol in Japan (in Japan case)

Comment

Fuels (excluding feedstocks)
Liquefied Petroleum Gas (LPG)

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
2,442

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
2,442

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Emission factor
2.99889

Unit
metric tons CO2 per m3

Emissions factor source
GHG reporting protocol in Japan (in Japan case)

Comment

Fuels (excluding feedstocks)
Liquefied Natural Gas (LNG)

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
2,383,159

MWh fuel consumed for self-generation of electricity
1,266

MWh fuel consumed for self-generation of heat
274,380

MWh fuel consumed for self-generation of steam
894,915

MWh fuel consumed for self-cogeneration or self-trigeneration
1,212,598

Emission factor
2.23403

Unit
metric tons CO2 per m3

Emissions factor source
GHG reporting protocol in Japan (in Japan case)

Comment

Fuels (excluding feedstocks)
Diesel

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
370,515

MWh fuel consumed for self-generation of electricity
24,484

MWh fuel consumed for self-generation of heat
10,011

MWh fuel consumed for self-generation of steam
336,020

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Emission factor
2.58496

Unit
kg CO2e per liter

Emissions factor source
GHG reporting protocol in Japan (in Japan case)

Comment

C8.2d

(C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	280,444	199,614	4,978	4,900
Heat	0	0	0	0
Steam	0	49,247	0	0
Cooling	0	0	0	0

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and/or cooling amounts that were accounted for at a zero emission factor in the market-based Scope 2 figure reported in C6.3.

Sourcing method

Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type

Other, please specify

Wind, Hydropower, Biomass, Solar

Country/area of consumption of low-carbon electricity, heat, steam or cooling

Germany

MWh consumed accounted for at a zero emission factor

28,895

Comment

Kao Chemical Germany and Kao Manufacturing Germany have converted all purchased electricity into renewable energy sources. And also Kao Germany GmbH converted all purchased electricity into renewable energy sources in 2020.

Sourcing method

Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type

Other, please specify

Wind, Hydropower, Biomass, Solar, Cogeneration

Country/area of consumption of low-carbon electricity, heat, steam or cooling

Spain

MWh consumed accounted for at a zero emission factor

47,021

Comment

Three bases of Kao Corporation, S.A. and Kao Chimigraf have converted all purchased electricity into renewable energy sources.

Sourcing method

Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type

Other, please specify

Wind, Hydropower

Country/area of consumption of low-carbon electricity, heat, steam or cooling

United Kingdom of Great Britain and Northern Ireland

MWh consumed accounted for at a zero emission factor

969

Comment

Molton Brown has converted all purchased electricity into renewable energy sources.

Sourcing method

Unbundled energy attribute certificates, Renewable Energy Certificates (RECs)

Low-carbon technology type

Other, please specify

Wind, Solar, Biomass, Landfill Gas, Geothermal, Hydropower

Country/area of consumption of low-carbon electricity, heat, steam or cooling

United States of America

MWh consumed accounted for at a zero emission factor

13,168

Comment

Kao USA has converted all purchased electricity into renewable energy sources.

Sourcing method

Unbundled energy attribute certificates, International REC Standard (I-RECs)

Low-carbon technology type

Wind

Country/area of consumption of low-carbon electricity, heat, steam or cooling

China

MWh consumed accounted for at a zero emission factor

28,581

Comment

Kao Corporation Shanghai, Kao Chemical Corporation Shanghai, Kao Huludao Casting Materials and Kao (Hefei) converted all purchased electricity into renewable energy sources in 2020.

Sourcing method

Green electricity products (e.g. green tariffs) from an energy supplier, not supported by energy attribute certificates

Low-carbon technology type

Hydropower

Country/area of consumption of low-carbon electricity, heat, steam or cooling

Japan

MWh consumed accounted for at a zero emission factor

150

Comment

Arita Training Center in Kao Japan has purchased 100% hydroelectric electricity "Aqua Premium" from TEPCO (Tokyo Electric Power Company Holdings, incorporated).

Sourcing method

Unbundled energy attribute certificates, other - please specify

Renewable Energy Certificates

Low-carbon technology type

Biomass

Country/area of consumption of low-carbon electricity, heat, steam or cooling

Japan

MWh consumed accounted for at a zero emission factor

387

Comment

On July in 2020, Arita Training Center in Kao Japan converted to purchase "Renewable Energy Certificates electricity" from hydroelectric electricity "Aqua Premium".

Sourcing method

Unbundled energy attribute certificates, other - please specify

J-Credit

Low-carbon technology type

Solar

Country/area of consumption of low-carbon electricity, heat, steam or cooling

Japan

MWh consumed accounted for at a zero emission factor

28,954

Comment

Toyohashi plant and Fuji plant in Kao Japan have purchased J-Credit electricity.

Sourcing method

Unbundled energy attribute certificates, other - please specify

Providing a ZERO CO2 menu utilizing non-fossil certificates

Low-carbon technology type

Solar

Country/area of consumption of low-carbon electricity, heat, steam or cooling

Japan

MWh consumed accounted for at a zero emission factor

144,296

Comment

Kao Japan have purchased electricity with zero CO2 emissions using non-fossil certificates at Ehime Plant, Kawasaki Plant, Tochigi Plant, Kashima Plant, and Odawara Plant.

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

Description

Metric value

Metric numerator

Metric denominator (intensity metric only)

% change from previous year

Direction of change

Please explain

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

KAO_Independent_Assurance_Report_2021_and_Letter.pdf

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Relevant standard

ISAE 3410

Proportion of reported emissions verified (%)

100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Scope 2 approach

Scope 2 market-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

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P.1-P.4

Relevant standard

ISAE 3410

Proportion of reported emissions verified (%)

100

C10.1c

(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope 3 category

Scope 3: Purchased goods and services

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

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Relevant standard

ISAE 3410

Proportion of reported emissions verified (%)

100

Scope 3 category

Scope 3: Upstream transportation and distribution

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

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Relevant standard

ISAE 3410

Proportion of reported emissions verified (%)
100

Scope 3 category
Scope 3: Use of sold products

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement

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Page/section reference
P.1-P.4

Relevant standard
ISAE 3410

Proportion of reported emissions verified (%)
100

Scope 3 category
Scope 3: End-of-life treatment of sold products

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement

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Page/section reference
P.1-P.4

Relevant standard

ISAE 3410

Proportion of reported emissions verified (%)

100

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?

Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C8. Energy	Energy consumption	ISAE3000	Total energy consumed by Kao 1

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C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

Yes

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.

EU ETS

Tokyo CaT - ETS

C11.1b

(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.

EU ETS

% of Scope 1 emissions covered by the ETS

4.14

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1, 2020

Period end date

December 31, 2020

Allowances allocated

6,233

Allowances purchased

21,806

Verified Scope 1 emissions in metric tons CO2e

27,018

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Facilities we own and operate

Comment

Situation: Olesa site in Kao Corporation, S.A. is subject to EU-ETS. We purchase allowances when our emissions exceed the allowances allocated.
Task: Emissions (scope1) must be reduced steadily by improving production efficiency and energy intensity.
Action: Our main activity is as follows; Steam boiler and chiller renewal, Heat exchangers renewals, Air conditioner renewals, Condensates recovery, Leakages prevention and control, Thermal insulation improvement.
Result: In the last quarter of 2019 was put into operation a new regenerative thermal oxidizer, installed for the treatment of waste gases from the process. It has been fully operational in 2020 with the correspondent consume of Natural gas, and because of that, new emissions have been added to the scope 1. But compared to 2019, the increase in emissions (scope1) (26,671t-->27,018t, 1.3% increase) has been suppressed against the increase in production (63,843t-->64,892t, 1.6% increase).

Tokyo CaT - ETS

% of Scope 1 emissions covered by the ETS

1.4

% of Scope 2 emissions covered by the ETS

0

Period start date

April 1, 2020

Period end date

March 31, 2021

Allowances allocated

10,490

Allowances purchased

0

Verified Scope 1 emissions in metric tons CO2e

8,375

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Facilities we own and operate

Comment

[Background]
The Kao Sumida Office is a large-scale facility designated by the Tokyo Metropolitan Government, and therefore it is obliged to reduce total emissions. The relevant values for Kao Sumida Office during the period of the Second Reduction Plan (year 2015-2019, obligatory reduction rate: 17%) were as follows:

Free-of-charge quota = standard emission 14,370 tons x 83% = 11,927 tons
Reduction mandatory amount = Standard emission 14,370 tons x 17% x 5 years = 12,215 tons
Upper emission limit = 14,370 tons of standard emission x for 5 years-12,215 tons = 59,635 tons

From 2020, the period of the third reduction plan (year 2020-2024, reduction obligation rate: 27%). Therefore, Free-of-charge quota is as follows
Free-of-charge quota = standard emission 14,370 tons x 73% = 10,490 tons

[Issues]
The Sumida Office is a complex facility with research laboratories and offices, and its mechanical facilities are very small compared to other factories, and there is little room for reduction activities by improving the efficiency of facilities and devising production activities. Therefore, the reduction activities are limited to the use of LEDs for lighting and other purposes.

[Reduction activities]
In order to fulfill our reduction obligations, we implemented the following reduction activities.
・Use of LEDs for lighting

・Steam loss reduction
・Air leak repair, etc.

[Result]
Results for the reduction plan period (year 2015-2019):
The total emissions of the Kao Sumida Office during the period was 49,759 tons, which was kept below the upper limit.
Excess reduction = maximum emission 59,635 tons-49,759 tons = 9876 tons during the period
We will carry over to the third reduction plan period (year 2020-2024).

[Achievements in year 2020]
The free-of-charge quota amount was 10,490 tons, but the discharge amount was 8375 tons. Although the reduction in production volume due to COVID-19 and the prolongation of telecommuting were major factors, the reduction was approximately 20%.

C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

・A description of your strategy for complying with the systems in which you participate

Some of Kao bases are already subject to the emissions trading system (ETS). Our policy is to prioritize the reduction of our emissions, so we will purchase emission rights if the amount of emissions exceeded the allocation. We do not have a financial strategy that takes into account an increase in the purchase cost for emission rights because we expect to reduce emissions for certain through our production improvement efforts and the improvement in energy consumption rate. Thus, it is unlikely that we will exceed the allocation. However, we have been deploying a strategy to make a capital investment and implement additional measures for reducing emissions that are rolled out across the company, with priority to plants that consume a large amount of energy, including those subject to the ETS.

・An example of how you have applied your strategy

Through the Responsible Care Committee, which manages the activities of Kao bases, we share Kao Group's energy-saving technologies and promote activities to reduce our emissions. In particular, we are actively working to introduce energy-saving technologies that can be applied easily, such as the installation of LEDs and the recovery of steam.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

C11.3

(C11.3) Does your organization use an internal price on carbon?

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price

Drive low-carbon investment

GHG Scope

Scope 1
Scope 2

Application

Kao considers the internal carbon price to be part of the cost of calculating the amortization period of the equipment.

Actual price(s) used (Currency /metric ton)

3,500

Variance of price(s) used

The internal carbon prices implemented by Kao are implemented by the SCM Department, which accounts for most of Kao's Scopes 1 and 2 emissions. Although Kao uses fixed cost, we plan to differentiate them to achieve the 2°C target.

Type of internal carbon price

Implicit price

Impact & implication

Each of Kao’s plants has introduced internal carbon pricing to promote energy-saving investment. Specifically, they calculate the sum of the cost of energy reduced by the introduction of energy-saving equipment and the carbon price of the amount of CO2 reduced as the cost advantage. The Responsible Care Promotion Committee made a resolution on and runs this initiative. We determine whether or not to make a capital investment based on the evaluation of various items. One such item is “number of years for simple recovery of investment.” Kao has stipulated the estimation method and the base years for this item and requires that the number of years for simple recovery of investment calculated from the above-mentioned cost advantage and the total investment be below the base years. The projects in which investment is now possible as a result of introducing internal carbon pricing include the solar panels with 1,500-kW generation capacity installed at the Tochigi Plant, and the solar panels with 336-kW generation capacity installed at the Toyohashi Plant. The solar panels installed at these

two plants generate a total power output of 1,900 MWh per year, reducing CO2 by approximately 1,100 tons.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers

Yes, our customers

Yes, other partners in the value chain

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement

Information collection (understanding supplier behavior)

Details of engagement

Collect climate change and carbon information at least annually from suppliers

% of suppliers by number

100

% total procurement spend (direct and indirect)

100

% of supplier-related Scope 3 emissions as reported in C6.5

38

Rationale for the coverage of your engagement

Kao aims to help realize a sustainable society and considers our suppliers to be business partners vital to Yoki-Monozukuri (a strong commitment by all members to provide products and brands of excellent value for consumer satisfaction). Thus, the Kao Guidelines for Supplier Assessment stipulate that we request all our suppliers to fulfill social and environmental responsibilities, and we monitor the plants of all suppliers through CSR self-assessment to check for any issues. We monitor all suppliers because it is difficult to identify the main suppliers based on transaction amounts or volumes because Kao's businesses are diverse and suppliers are distributed across different areas. Kao visits suppliers that we have determined pose a risk and we share issues and work to make improvements. 94% of plants (of suppliers to Kao Corporation) fulfilled our environmental criteria. Kao also participates in the CDP SC program and requests that important suppliers respond to surveys. We evaluate the received responses by using our unique evaluation method, feed back the results to suppliers, and request that they make improvements to respond to climate change. Under Kao's

unique evaluation method, we set CO2 reduction targets, build a structure to manage the status of progress, promote reduction activities, and further evaluate the implementation of advanced activities, such as the introduction of renewable energy.

Impact of engagement, including measures of success

Method to measure engagement outcomes Monitoring CSR self-assessment and conducting surveys through the CDP SC program to identify the percentage of important suppliers who have set reduction targets

・Measures of success　95% or more supplier plants fulfill the criteria determined in CSR self-assessment monitoring. 80% or more of suppliers have set reduction targets as determined in surveys through the CDP SC program.

・Impact of engagement　As a result of engagement based on monitoring for Kao supplier plants, the number of plants that have replied to Sedex or Kao SAQ in 2020 (55%) increased by 35% compared to 2019 (20%).

As for the activities of important suppliers through the CDP SC Program, the number of suppliers who have set targets in one of 1) CO2 reduction project recording or CO2 emission amount reduction recording, 2) Scope 3 (procurement) estimation, or 3) Estimation of the amount of CO2 emissions associated with the portion supplied to Kao, in 2020 increased by 2% (3 companies) from 2019.

Comment

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement

Education/information sharing

Details of engagement

Run an engagement campaign to educate customers about the climate change impacts of (using) your products, goods, and/or services

% of customers by number

91

% of customer - related Scope 3 emissions as reported in C6.5

44.23

Please explain the rationale for selecting this group of customers and scope of engagement

We are aware that the amount of CO2 emissions when products are used (category 11 of scope 3) accounts for 40% of the entire product life cycle. We are engaging in "eco together" activities with various stakeholders to reduce the environmental load when

products are used, and such important stakeholders include customers. Since Japan accounts for approximately 70% of Kao sales, we deem it rational that we target purchasers and future purchasers of Kao products in Japan for such engagement. Specifically, we use environmentally-friendly products that reduce CO2 emissions or the amount of water consumed when they are used (such as clothing detergents and tableware detergents) to engage with customers. As engagement methods, we visit elementary and middle schools to give lectures, offer plant tours to students and general consumers, and participate in environmental events held by local governments and at stores. We further enhance engagement with customers by actively interacting with the users and customers of our products through our website and encourage them to take action for climate change through energy-saving, water-saving, and electricity-saving activities.

Impact of engagement, including measures of success

The impact of climate-related engagement strategy with your customers Of the total CO2 emissions through Kao products' entire life cycle (11,455 Kton-CO2), those when products are used (category 11 of scope 3) account for 39%. This means reducing greenhouse gas emissions by engaging with customers has a great impact on lowering CO2 output through the entire product life cycle. Thus, Kao has added the activity of engaging with customers, "eco together with customers," to the strategy to reduce its environmental burden. -description of measures of success We use the number of people we engaged, sales of environmentally-friendly products, etc., to measure the effect of our engagement. We engaged with 190,000 people in 2019 and with 1.42 million people since 2014, exceeding the target of 1.4 million people by 2019. In 2019. The ratio of sales of products with a low environmental burden that have cleared Kao's unique strict certification criteria in Japan was 27%, lower than the 29% of the previous year. This is attributed to some refill products not displaying a "eco together" logo even though they met the standards.

C12.1d

(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

Direct engagement with policy makers

Trade associations

C12.3a

(C12.3a) On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Other, please specify Act on Promotion of Global Warming	Support with minor exceptions	Kao actively cooperates with the Ministry of the Environment to promote policies related to the Act on Promotion of Global Warming Countermeasures in Japan. Specifically, the Ministry has been promoting a policy that encourages companies to calculate GHG emissions in the value chain. Kao supports this policy by releasing the calculation results for Scope 3 on the "Green Value Chain Platform" website run by the Ministry of the Environment.	Kao supports the policy that encourages companies to calculate GHG emissions in the value chain. However, we disagree with making the calculation and reporting compulsory. The main reason is because while the Ministry of the Environment provides the intensity to be used for such calculation, none is available for imported materials, for example; since Kao conducts business on a global basis, calculating emissions according to specific rules that apply only in Japan would be a significant burden.

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association

Japan Chemical Industry Association

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Chemical industry provides highly-functional materials with society contributing to the reduction of the risks in society from climate change. ICCA, International Council of Chemical Associations, quantified the contributions and has addressed actions leading to contributions to society. As a part of that ICCA and WBCSD, World Business Council for Sustainable Development, draw up the guidelines for the contributions calculations.

How have you influenced, or are you attempting to influence their position?

Kao supports activities for measures pursuing total optimization based on "c-LCA (carbon-Life Cycle Analysis)" that the Japan Chemical Industry Association has developed and proposes both at home and abroad. In addition, Kao joined an LCA working group of the Japan Chemical Industry Association to participate in developing c-LCA analysis, providing examples of possible contributions to emission reduction based on the methodology. Kao in a member of Japan Chemical Industry Association, which is a board member of ICCA.

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

Some members of secretariat on Kao Responsible Care promotion Committee and Sustainability Committee attend several kinds of committees of Japan Chemical Industry Association as their members and update information on domestic and global strategies trend of government and industries. The secretariats check the consistency between Kao's strategies for climate change and JCIA's ones depending on its relevance.

C12.4

(C12.4) Have you published information about your organization’s response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication

In mainstream reports

Status

Complete

Attach the document

securities-fy2020-all-01.pdf

Page/Section reference

Strategy: p12 Mid-term business plan
Governance: p15 Risks related to Kao's business
Risks & opportunities: p16 Risks related to responding to social issues
Risks & opportunities: p18 Risks related to major earthquakes, natural disasters, accidents, etc. (includes extreme weather caused by climate change)

Content elements

Governance
Strategy

Risks & opportunities

Comment

Publication

In voluntary communications

Status

Complete

Attach the document

klp-pr-2021-e-all.pdf

Page/Section reference

Governance: p91 Decarbonization promotion structure
Strategy: p103 Decarbonization -Scenario Analysis
Risks & opportunities: p89 Risks and opportunities related to realization of What Kao Aims to Be by 2030
Emissions figures & Emission targets: p92-94 Mid- to long-term targets and performance

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

C15. Signoff

C-FI

(C-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.

C15.1

(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	President and Chief Executive Officer	Chief Executive Officer (CEO)