KAO Corporation - Climate Change 2018

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: Comsumer Product and Chemical. The Consumer Product segment has three divisions. The Beauty Care division offers prestige cosmetics; premium skincare products such as face washes, as well as premium hair care products including shampoos, hair styling products and hair colouring products, among others. The Human Health Care division 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 Fablic and Home Care division offers fabric care products including detergents for apparel use, and home care products including detergents for kitchen use. The Chemical segment 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 beauty care business accounted for 39.3% of total turnover in fiscal 2017; human health care business,19.8%; fablic and home care business, 22.5%; and chemical business,20.8%. The Company reported JPY 1,489.4b in revenues and 33,560 permanent employees at December 31,2017.

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
Row 1	January 1 2017	December 31 2017	No	<Not Applicable>
Row 2	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Row 3	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Row 4	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>

C0.3

(C0.3) Select the countries/regions 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 (Province of 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 consolidation approach to your Scope 1 and Scope 2 greenhouse gas 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) 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 Responsible Care Promotion Committee, which is one of the internal organizations responsible for Kao's response to climate change, a subordinate committee of the Internal Control Committees. This committee is approved by the Board, under the Kao corporate governance system. CEO is also a chairman of the Sustainability Committee, approved by the Management Committee. The Responsible Care Promotion Committee manages progress in risk-management activities, while the Sustainability Committee manages progress in activities related to locating new opportunities. The Responsible Care Promotion Committee is convened annually and reported of the Internal Control Committee.

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 Reviewing and guiding risk management policies Monitoring implementation and performance of objectives	The Board of Directors delegates management related to climate change risks to the Internal Control Committee, and opportunities related to climate change to the Sustainability Committee. In both committees, the CEO serves as the chairman.

C1.2

(C1.2) Below board-level, provide the highest-level management 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.

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 related to climate change.

The Sustainability Committee, which is under the control of the Board of Directors, manages opportunities related to climate change. The CEO serves as the chairman of the Internal Control Committee as well as the Sustainability Committee.

ii) A rationale of why responsibilities for climate-related issues have been assigned to this/these position(s) or committee(s)

Since we consider risks associated with climate change to be business risks, we deem it rational that the Risk and Crisis Management Committee (under the Internal Control Committee, which is directly under the control of the Board of Directors and in which the CEO serves as the chairman) is responsible for establishing the management structure and operation plan while divisions, subsidiaries, and affiliated companies are responsible for developing and implementing response measures based on the operation plan. Similarly, the Responsible Care Promotion Committee under the Internal Control Committee, in which the CEO serves as the chairman, manages the status of activities of divisions, subsidiaries, and affiliated companies.

The Sustainability Committee defines the direction and promotes ESG activities, including those related to climate change, with the purpose of improving the corporate value. Since climate change opportunities are often associated with business strategies involving large investments, Kao deems it rational that the Sustainability Committee, in which the CEO serves as the chairman under the control of the Board of Directors, is responsible for their management.

iii) Specific responsibilities of every position and/or committee with regard to the assessment and management of climate-related issues.

Since climate change affects Kao's business, it needs to be supervised as a business management issue. Thus, it is under the oversight of the Internal Control Committee and the Sustainability Committee, with the CEO serving as the chairman. These committees are responsible for the target management and the progress evaluation for business divisions as well as the entire Group.

iv) Description of position(s)/committee(s) specific climate-related issues monitoring process

The secretariat of the Responsible Care Promotion Committee monitors the status of activities of divisions, subsidiaries, and affiliated companies every month and reports the results to the committee. The secretariat also conducts audit once every year. The Risk and Crisis Management Committee holds a meeting at least four times per year.

The secretariat of the Risk and Crisis Management Committee monitors the status of environmentally-friendly products that are related to outcomes of climate change opportunities and reports it to the secretary-general every month. The secretariat also monitors the status of LC-CO2.

After receiving reports on the results of CO2 reduction and other activities related to climate change, each committee confirms the status of progress and discusses improvement measures.

C1.3

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

Yes

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues.

Who is entitled to benefit from these incentives?
Chief Executive Officer (CEO)

Types of incentives
Monetary reward

Activity incentivized
Emissions reduction target

Comment
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

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Who is entitled to benefit from these incentives?
Executive officer

Types of incentives
Monetary reward

Activity incentivized
Emissions reduction target

Comment
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

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Who is entitled to benefit from these incentives?
Management group

Types of incentives
Monetary reward

Activity incentivized
Emissions reduction target

Comment
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

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Who is entitled to benefit from these incentives?
Chief Procurement Officer (CPO)

Types of incentives
Monetary reward

Activity incentivized
Supply chain engagement

Comment
Evaluate all matters of supply chain engagement such as GHG emission reduction activities and water risk management of each supplyer.

Who is entitled to benefit from these incentives?
Buyers/purchasers

Types of incentives
Monetary reward

Activity incentivized
Supply chain engagement

Comment

Evaluate all matters of supply chain engagement such aslevel of GHG emission reduction activities and water risk management of related supplyer.

Who is entitled to benefit from these incentives?
Procurement manager

Types of incentives
Monetary reward

Activity incentivized
Supply chain engagement

Comment
Evaluate all matters of supply chain engagement such aslevel of GHG emission reduction activities and water risk management of related supplyer.

Who is entitled to benefit from these incentives?
Environment/Sustainability manager

Types of incentives
Monetary reward

Activity incentivized
Emissions reduction target

Comment
Evaluate all matters such as level of achievement of GHG emission reduction target and energy reduction target (basic unit and absolute quantity) by emission reductiion projects, energy reduction projects and efficiency projects, responses to climate change problems, and expansion of sales of low-carbon products

Who is entitled to benefit from these incentives?
Facilities manager

Types of incentives
Monetary reward

Activity incentivized
Emissions reduction target

Comment
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

Who is entitled to benefit from these incentives?
Process operation manager

Types of incentives
Monetary reward

Activity incentivized
Emissions reduction target

Comment
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

Who is entitled to benefit from these incentives?
Risk manager

Types of incentives
Monetary reward

Activity incentivized
Other, please specify (management of climate-related risks)

Comment
Locate climate change risks and determine response measures

Who is entitled to benefit from these incentives?
All employees

Types of incentives
Monetary reward

Activity incentivized
Emissions reduction project

Comment
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) Describe what your organization considers to be short-, medium- and long-term horizons.

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

C2.2

(C2.2) Select the option that best describes how your organization's processes for identifying, assessing, and managing climate-related issues are integrated into your overall risk management.
Integrated into multi-disciplinary company-wide risk identification, assessment, and management processes

C2.2a

(C2.2a) Select the options that best describe your organization's frequency and time horizon for identifying and assessing climate-related risks.

	Frequency of monitoring	How far into the future are risks considered?	Comment
Row 1	Six-monthly or more frequently	>6 years	

C2.2b

(C2.2b) Provide further details on your organization's process(es) for identifying and assessing climate-related risks.

-How climate-related risks are identified and assessed at a company level

Kao performs the following risk management processes:

1) The Risk and Crisis Management Committee (Risk Committee), in which the executive member in charge of risk and crisis management serves as the chairman, holds a meeting at least four times per year and establishes the management structure and operation plan.

2) Divisions, subsidiaries, and affiliated companies manage risks by developing and implementing response measures based on the operation plan.

The Responsible Care Promotion Committee (RC Committee), which manages Kao Group's environment, health, security, disaster prevention, etc., centrally, manages climate-related risks as part of environmental items. RC Committee manages status of activities of all Kao Group divisions and subsidiaries, and secretariat of RC Committee confirms the implementation status of measures to be taken by divisions and subsidiaries every month based on the operation plan established by Risk Committee.

RC Committee and Risk Committee are placed under the Internal Control Committee, with President and CEO serving as chairman.

-How climate-related risks are identified and assessed at an asset level

RC Committee assesses the potential climate-related risk having a physical impact on plants and facilities and discusses countermeasures.

-The process you have in place for assessing the potential size and scope of identified risks

RC Committee assesses climate-related transitional risks and physical risks. This assessment is targeted at not only Kao plants, but risks on the supply chain. For ingredients, in particular, the committee prioritizes measures based on impact on business, regardless of the risk scale.

-The process by which your organization determines the relative significance of climate-related risks in relation to other risks;

If there is a climate-related risk that is also relevant to other risks, Risk Committee is consulted to determine the priority of responses. A decision is then made by taking into account the lost sales, impact on the market share, etc.

-The definitions of risk terminologies used

Common classifications of climate-related risks for all businesses include the purchase of ingredients, natural disaster response, and compliance with laws and regulations. The business-specific classifications include changes in consumer needs for the Consumer Business, and customer demand trends and ingredient price fluctuation risks for the Chemical Business.

-How your organization defines substantive financial or strategic impact on your business

We define an event as having a substantive financial impact if the amount of damage is expected to exceed 1 billion yen, and such events are managed by Risk Committee.

C2.2c

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

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	The Sumida Office in Japan is subject to the cap-and-trade system of the Metropolis of Tokyo. Thus, the plant must keep its emissions amount below the cap. The plant 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	Kao markets many water-saving products, including clothing detergents and shampoos, as products that address global warming. We also understand that further improvement in the performance of these products and expansion of the product category are required. To do so, it is necessary to develop new chemical substances, and we assess risks in the chemical substance development stage and productization stage to ensure that product standards are maintained.
Market	Relevant, always included	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. Thus, Kao has been conducting sophisticated inventory management while evaluating the risks associated with store stockouts.
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	If the climate changes, causing the temperature to increase rapidly, people's bodies may not be able to keep up with such changes. This risk is higher for those with a chronic illness such as diabetes, which poses the risk that business efficiency may be reduced. For this reason, Kao has announced the Kao Group Health Declaration and evaluates the risks associated with employees' chronic illnesses.
Upstream	Relevant, always included	If a supplier does not take appropriate climate change countermeasures, procurement of ingredients will be hindered, posing a risk of lost sales opportunities. Since it is necessary to encourage such suppliers to take climate change countermeasures, Kao participates in the CDP SC program and evaluates the risks associated with the status of climate change countermeasures taken by suppliers.
Downstream	Relevant, always included	Since approximately 70% of the Kao Group's sales are accounted for by consumer products, a change in consumer tastes caused by climate change poses a risk of lost sales opportunities. For this reason, we must continue to appropriately keep up with trends in consumer tastes. To evaluate the risks associated with such trends, Kao has established the Consumer Research Department.

C2.2d

(C2.2d) Describe your process(es) for managing climate-related risks and opportunities.

-Description of a process for managing climate-related risks

1) We make the matrix chart consisting of financial impact of risk and likelihood of risk in order to assess the level of importance.

2) We estimate the impact and likelihood of each risk item and identify important risk items from the chart.

3) The extracted important risk items are checked by Risk Management Committee and some of them are check and managed by management council or board of directors as needed.

4) The rest of the risk items are handled by relevant departments.

-Description of a process for managing climate-related opportunities

1) We estimate the impact of each opportunity and feasibility of actions to get it making information exchanges among many relevant departments including business units and R&D, and then identify important opportunity items.

2) The extracted important opportunity items are discussed by the Sustainability Committee and reported to management council or

board of directors and approved by them.

3) The rest of the opportunity items are handled by relevant departments.

-Case study/example of how process is applied to physical risks and opportunities

CASE STUDY (1)

The inside of a plant was flooded due to local heavy rains with an amount of rainfall exceeding the design value for rainwater discharging from the plant, causing some electricity equipment to submerge and the plant to experience a power failure. We calculated the number of days the plant would shut down operations due to the incident and estimated the total damage to be 2 billion yen. In addition, we estimated the frequency of the incident to be once in five years. The Risk Management Committee evaluated the adequacy of the risk assessment for this case and confirmed that the total amount of damage would be over 1 billion yen. The Risk Management Committee periodically managed the progress of the risk by placing it under its control under the guidance of the Internal Control Committee, which is a higher-level committee. The Risk Management Committee reports to the board of directors the response status once or more a year and seeks guidance as necessary.

CASE STUDY (2)

An increase in temperature due to climate change manifested a continuous increase in demand for antiperspirants. Accordingly, the Beauty Care Business Division and the R&D Division worked together to significantly change the policies for product improvements that have been implemented on an ongoing basis. Development of a new product that far exceeds the performance of that of competitors was started with a target of bringing it to market in three years. When it was forecast that the impact of an increase in sales of the relevant product would be less than one billion yen, it was decided that the Beauty Care Business Division and the R&D Division manage the status of product development.

-Case study/example of how process is applied to transitional risks and opportunities

CASE STUDY (3)

An investigation by the Responsible Care Promotion Office confirmed that a nationwide cap-and-trade system is highly likely to be deployed in Japan, which accounts for 40% of Kao's Scope 1 emissions. A subsequent detailed investigation found that there is only one plant that is subject to the cap-and-trade system, the plant would exceed the limit imposed by the system only slightly, and the additional cost would be about 10 million yen. Accordingly, it was decided that the SCM Division, which controls the plant, play a major role in responding to the risk and the Responsible Care Promotion Committee confirm the progress.

CASE STUDY (4)

An investigation by the Responsible Care Promotion Office confirmed that a nationwide cap-and-trade system is highly likely to be deployed in Japan, which is Kao's key market. This information was passed to the Chemical Unit that sells cleansers for metal plated steel sheets that can be used at low temperatures. The person in charge of sales at the Chemical Unit communicated the same information accurately to a customer, which led to a new business transaction. When it was confirmed that investment in new equipment of over 1 billion yen is needed to meet customer demand, it was decided that sales data on this case is to be under the control of the Sustainability Committee and that the investment will be made in accordance with the decision of the management meeting.

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
Transition risk

Primary climate-related risk driver
Technology: Costs to transition to lower emissions technology

Type of financial impact driver
Technology: Costs to adopt/deploy new practices and processes

Company- specific description
Japan, which accounts for approximately 70% of Kao's sales, is considering deploying the cap-and-trade system and increasing the carbon tax rate. Deploying these regulations would reduce Kao's profits.

Time horizon
Short-term

Likelihood
Likely

Magnitude of impact
Medium

Potential financial impact
1300000000

Explanation of financial impact
Kao's Scope 1 emissions in Japan are 271,000 t-CO2. If the carbon tax rate increases by 5,000 yen per t-CO2, we will have to pay approximately 1.3 billion yen in additional tax.

Management method
'- action that is being implemented – Laws and regulations applicable to individual plants are carefully confirmed by each plant or the secretariat of the Responsible Care Promotion Committee. In addition, we have been upgrading facilities to install the latest equipment with high energy consumption efficiency and recovering heat from used steam in anticipation of the introduction of regulations. - Example or case study In 2017, the Kashima Plant upgraded its chillers, choosing a model with higher energy consumption efficiency than the regular model in anticipation of the future introduction of carbon tax. We began doing this for all domestic plants starting in 2012, and we plan to continue upgrading to the latest equipment going forward.

Cost of management
2273000000

Comment

Identifier
Risk 2

Where in the value chain does the risk driver occur?
Direct operations

Risk type
Physical risk

Primary climate-related risk driver
Acute: Increased severity of extreme weather events such as cyclones and floods

Type of financial impact driver
Reduced revenue from decreased production capacity (e.g., transport difficulties, supply chain interruptions)

Company- specific description
Stronger tropical cyclones with heavier rainstorms increase the likelihood of flooding and other risks. In 2011, typhoon No. 21 struck Mindanao where Kao's Philippines plant is located, causing flooding and damaging houses. The island was hit by a typhoon in 2017, too. Although the plant was not directly affected by these typhoons, they had no small impact on the lives of the employees.

Such natural phenomena impact a plant's production operations and may reduce sales as a result of reduced production amounts.

Time horizon
Short-term

Likelihood
Likely

Magnitude of impact
Medium

Potential financial impact
1500000000

Explanation of financial impact
For example, if Philipinas Kao, producing 100,000 tons of higher alcohol products in the Philippines, suffers flood damage, it would slow the operation of the production facilities with a decline in sales of 273.8 billion yen in the Chemical Business.

Management method
- action that is being implemented – Each plant assesses water risks associated with climate change, including drought, flooding, typhoon, and tsunami, and the status of progress is carefully confirmed by the secretariat of the Responsible Care Promotion Committee. At each base, we implement measures including disaster mitigation measures as required. -Example or case study If an unprecedented scale of typhoon hits the area where Kao Philippines is located, it is likely that neighboring rivers will overflow and the plant will be flooded at high tide, making it impossible to continue operating the equipment. To address this issue, we built a breakwater on the river side of the plant premises. In addition, we built a mangrove forest and breakwater on the coast line, which cost 50 million yen.

Cost of management
50000000

Comment

Identifier
Risk 3

Where in the value chain does the risk driver occur?
Customer

Risk type
Transition risk

Primary climate-related risk driver
Reputation: Stigmatization of sector

Type of financial impact driver
Reputation: Reduction in capital availability

Company- specific description
Kao plans to issue corporate bonds worth 25 billion yen in 2018. If we give a negative impression to investors due to insufficient efforts toward climate change, we will need to set a high interest rate.

Time horizon
Short-term

Likelihood
Likely

Magnitude of impact
Low

Potential financial impact
25000000

Explanation of financial impact
If the interest rate for 25 billion yen of corporate bonds in total must be increased by 0.1%, the interest payment will be 25 million yen higher.

Management method
- action that is being implemented – In order to prevent the company’s reputation from falling for investors and customers, the secretariat of the Sustainability Committee has been actively disclosing information related to Kao’s climate change initiatives. In

addition, the secretariat of the Sustainability Committee works with the IR Division to promote engagement with investors. Furthermore, as the contact point for customers on information disclosure, the Sales Division responds to them sincerely in collaboration with the secretariat of the Sustainability Committee. -Example or case study With the purpose of enhancing the company's engagement with investors, Kao participated in the Environmental Reporting Platform Development Project implemented by the Ministry of the Environment in Japan in 2017. Through this project, we communicated with 11 institutional investors.

Cost of management
939000000

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

Type of financial impact driver
Reduced operating costs (e.g., through efficiency gains and cost reductions)

Company- specific description
The progress of the Paris Agreement may lead to all countries imposing emission controls. Thus, we consider that companies engaging in business in countries that are parties to the agreement may be required to reduce emissions directly or indirectly. Therefore, there are explicit and potential needs to improve energy consumption efficiency in both companies and households. Accordingly, we expect increased demand for our product lines that contribute to energy savings in both of Kao's business areas, business-to-business and business-to-consumer (example B2B product line: steel-sheet detergent; example B2C product line: quick-drying shampoo).

Time horizon
Short-term

Likelihood
Virtually certain

Magnitude of impact
High

Potential financial impact
3000000000

Explanation of financial impact
To reduce the procurement of energy for the company, Kao implements many energy conservation activities. The amount of cost reduction resulting from effective activities including energy conservation activities (TCR) are estimated 3 billion yen.

Strategy to realize opportunity

- action that is being implemented – Energy-saving activities that are used to reduce the consumption and CO2 emissions are directly linked to cost reductions.Kao has established its energy-saving target and CO2 emission target, and the Responsible Care Promotion Committee manages its progress. The TCR Promotion Office manages the amount of costs associated with the activity. - Example or case study Kao has implemented a number of energy-saving activities to reduce corporate energy procurement. In 2017, we updated the refrigerating equipment at the Kashima plant.In anticipation of the introduction of carbon tax in the future, we selected models with higher energy consumption than normal models. The cost reduction by effective activities such as energy-saving activities (TCR) is estimated at 3 billion yen.

Cost to realize opportunity
677000000

Comment

Identifier
Opp2

Where in the value chain does the opportunity occur?
Direct operations

Opportunity type
Products and services

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

Type of financial impact driver
Increased revenue through new solutions to adaptation needs (e.g., insurance risk transfer products and services)

Company- specific description
A decrease in average precipitation reduces the volume of water available. This change drives up demand for Kao's water-saving products such as laundry detergents requiring less water, which are already on the markets in China and Australia as well as in Japan to contribute to the growth of the Kao Group's sales.

Time horizon
Short-term

Likelihood
Very likely

Magnitude of impact
Medium-high

Potential financial impact
30000000000

Explanation of financial impact
Decreasing precipitation or changes in the pattern of precipitation, for example, in areas where enough water is not always available, may reduce the quantity of water available for consumers. Acceptance of water-saving products by the consumers in these regions would improve the sales of the Kao Group. On the other hand, when the rainy day becomes long, the opportunity to dry the clothing which was washed in the room increases. When drying washed clothing in the room, the offensive smell occurs to the clothing. The demand of the detergent for the clothing which added the function to prevent from an unpleasant smell increases. If sales of the Fabric and Home Care Business including laundry detergents with high water consumption incresed 10% more, the revenue would incresed 30 billion yen.

Strategy to realize opportunity
- action that is being implemented – Kao operates a matrix that combines business units and functional units. In addition, the Kao R & D Division conducts matrix management between product development and basic research divisions. A close relationship is maintained in the company's corporate production and quality assurance department and customer Communications department. - Example or case study Since the launch of the 2009 clothing detergent attack Neo, Kao continuously develop and launch products that can reduce the amount of water used when using products. In 2017, the liquid detergent for liquid type was extended to non-concentrated type.

Cost to realize opportunity
8100000000

Comment

Identifier

Opp3

Where in the value chain does the opportunity occur?
Supply Chain

Opportunity type
Resilience

Primary climate-related opportunity driver
Resource substitutes/diversification

Type of financial impact driver
Increased revenue through new products and services related to ensuring resiliency

Company- specific description
Kao has been requesting mainly suppliers in Japan, which is Kao's main market, to build a GHG management structure and reduce GHG emissions through the CDP SC program. Thus, we expect this will improve the resilience to climate change of Kao suppliers as well as the entire Kao value chain.

Time horizon
Short-term

Likelihood
Very likely

Magnitude of impact
Medium

Potential financial impact
25000000

Explanation of financial impact
Fiscal 2018 marks the tenth year of Kao’s participation in the CDP SC Program. In recognition of our greenhouse gas emission reduction activities that take into account climate change measures in the entire product lifecycle, including the supply chain, as stated in the response to the CDP 2017 survey, Kao was chosen to be on the Supplier Engagement leader board by CDP, an international NGO. If our reputation grows through such activities, it will allow us to set a 0.1% lower interest rate for the total corporate bond of 25 billion yen, which means that the amount of interest payable will be reduced by 25 million yen.

Strategy to realize opportunity
- action that is being implemented – Kao will extend the selection of the CDP SC program to the suppliers of other locations from Japan Kao suppliers. -Example or case study As a result of activities through Kao's CDP SC program, considering climate change measures throughout the entire product, including the supply chain, has been assessed to have implemented activities to reduce greenhouse gas emissions, Kao was selected as the "Supplier Engagement leader board" from CDP 1in 2017. The Supplier engagement leader board is selected by a company that is highly acclaimed for its approach to suppliers. In addition, Kao is selected FTSE4 Good for the tenth year in Feb. 2017, DJSI for forth year in Sep.. Forther Kao has been continuing the annual dividend for 28 consecutive periods and has earned an assessment of the investment Market of Japan listed company No1.

Cost to realize opportunity
5000000

Comment

C2.5

(C2.5) Describe where and how the identified risks and opportunities have impacted your business.

	Impact	Description
Products and services	Impacted for some suppliers, facilities, or product lines	Due to the recent reduction in the average rainfall and a change in the rainfall pattern caused by climate change, demand for Kao's water-saving products is increasing in Chinese, Australian, and Japanese markets. Furthermore, the conclusion of the Paris Agreement has raised consumers' interest on the prevention of global warming. In order to respond to such demand, Kao has been marketing products that help reduce CO2, including water-saving products, since 2009. The sales of environmentally-friendly products including water-saving products exceeded 240 billion yen in 2017.
Supply chain and/or value chain	Not yet impacted	In recent years, more people around the world are asking for palm oil that has not been taken from a plantation that was developed by illegally cutting down tropical rainforests. To meet such needs, Kao has set a goal of purchasing only palm oil for which its origin can be traced back fully to a plantation by 2020. We expect to spend about 200 million yen every year to achieve that goal.
Adaptation and mitigation activities	Impacted for some suppliers, facilities, or product lines	In an attempt to mitigate climate change, Kao has set scopes 1 and 2 emission goals and is conducting CO2 reduction activities, which include the installation of new equipment and the introduction of low carbon energy. In 2017, we invested 1,116 million yen and spent 939 million yen on global warming countermeasures.
Investment in R&D	Impacted	Global warming has become increasingly apparent, causing the consumers' preferences to change as well. In response, we have been actively researching and developing water-saving products. In 2017, we invested 2,403 million yen and spent 4,512 million yen on environmental response studies.
Operations	Impacted for some suppliers, facilities, or product lines	A rise in sea water temperature due to global warming has caused the typhoons in the Pacific Ocean to increase in scale. In 2009, a typhoon approached Mindanao in the Philippines, which caused the rivers near the Kao plant to overflow and the plant operations to be suspended. In response to such a disaster, we spent approximately 50 million yen building a new breakwater.
Other, please specify	Please select	

C2.6

(C2.6) Describe where and how the identified risks and opportunities have factored into your financial planning process.

	Relevance	Description
Revenues	Impacted	Kao aims to achieve sales of 2.5 trillion yen in 2030. In order to do so, we have stepped up our environmental, social, and governance (ESG) activities in 2018, in the hope that non-financial activities represented by ESG activities will have a positive financial impact. The Paris Agreement has changed the field of climate change significantly for 2030. Since the Agreement aims to achieve a target of 2°C around the world, we expect an increase in the sales of products that contribute to the mitigation of climate change.
Operating costs	Impacted	Following the conclusion of the Paris Agreement, companies are expected to set scopes 1 and 2 emission goals based on the Science Based Targets (SBT). Although Kao has already set a GHG reduction goal and has been engaging in activities, we must increase our efforts to meet the SBT target. We expect to spend an additional cost of approximately 1.5 billion yen every year to achieve the emission target based on the SBT in 2030.
Capital expenditures / capital allocation	Impacted	Following the conclusion of the Paris Agreement, companies are expected to set scopes 1 and 2 emission goals based on the Science Based Targets (SBT). Although Kao has already set a GHG reduction goal and has been engaging in activities, we must increase our efforts to meet the SBT target. In order to achieve the emission target based on the SBT in 2030, we require three times more investment. We expect the amount of investment to be roughly 3 billion yen.
Acquisitions and divestments	Impacted	The Chemical Business Division has set a goal of having 80% of its products be environment-related products that contribute to reducing environmental impact including climate change by 2020. As part of this effort, we purchased Collins Inkjet and Chimigraf Holding in 2016. In addition, as one of our growth strategies, we aim to achieve high profitability (200 billion yen in sales and 10% in operating profit margin) in the Consumer Products Business in Europe and the U.S. To that end, we believe that it is important to utilize our hair care assets, especially our salon assets, so we purchased Oribe Hair Care in December 2017 for approximately 50 billion yen. We expect to make investments of 150 to 200 billion yen per year for our growth, including those in merger and acquisition activities.
Access to capital	Not yet impacted	For financing, we aim to obtain and maintain a high rating that allows us to finance large-scale investments. In recognition of our excellent efforts in taking care of the health of our employees, we were able to borrow money at a low cost from the viewpoint of health management. However, we have yet to be able to do so from the viewpoint of climate change. Kao aims to achieve actual sales of +5% in CAGR terms and 15% in operating profit margin in 2020. We also plan to continue increasing the operating cash flow at a pace that will exceed the growth rate achieved in 2017 when 185.8 billion yen in sales was recorded.
Assets	Impacted	Kao decides its capital investment based on economic value added (EVA) management. We aim to improve the EVA by investing in projects in which the net operating profit after tax (NOPAT) during the planning period exceeds the total capital cost. In 2017, the EVA was 90.4 billion yen, while the capital expenditure was 79.4 billion yen. In the future, when we set scopes 1 and 2 goals based on the SBT, we predict that capital investment will be an increasing trend for such reduction efforts.
Liabilities	Not yet impacted	Kao aims to achieve sales of 2.5 trillion yen in 2030. In order to do so, we have stepped up our environmental, social, and governance (ESG) activities in 2018, in the hope that non-financial activities represented by ESG activities will have a positive financial impact. The Paris Agreement has changed the field of climate change significantly for 2030. Since the Agreement aims to achieve a target of 2°C around the world, we expect an increase in the sales of products that contribute to the mitigation of climate change. To achieve that, we need to install new manufacturing equipment and, as a result, borrowing may increase in the future.
Other	Please select	

C3. Business Strategy

C3.1

(C3.1) Are climate-related issues integrated into your business strategy?

Yes

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform your business strategy?

Yes, quantitative

C3.1c

(C3.1c) Explain how climate-related issues are integrated into your business objectives and strategy.

i. How business objectives and strategy have been influenced by climate-related issues

Management of risks associated with climate change is an important management issue for Kao. An increase in natural disasters and compliance with related regulations due to climate change are considered risks. That is because suspension of operations and ingredient procurement due to natural disasters may lead to the loss of business opportunities, and compliance with various regulations will increase costs and investments, thereby adversely affecting financial management. However, they are opportunities at the same time. Kao believes that the company can contribute to the reduction of CO2, which is a cause of global warming, through its business activities. Kao recognizes risks and opportunities related to climate change and incorporates them into its business activity strategies. With the aim of mitigating the issue of climate change, Kao has set a goal of reducing CO2 emissions throughout its product lifecycle by 35% by 2020. To achieve this goal, we have been actively encouraging suppliers to reduce their CO2 emissions; developing and proposing water-saving products that contribute to the reduction of CO2 when the products are used; and developing and proposing containers using less plastic, thus contributing to the reduction of CO2 in the disposal phase.

ii. Whether our business strategy is linked to an emissions reductions target or energy reduction target

Under the mid-term plan K20, Kao has set a goal of committing to fostering a distinctive corporate image. One of the measures taken to achieve that is stimulating non-financial activities, especially from the viewpoint of ESG. In the environmental area, we have stated in the Environmental Statement that we will provide products that help reduce environmental impact across the product lifecycle, as well as through our activities. In accordance with the statement, we have set scopes 1 and 2 reduction goals and scopes 1, 2, and 3 (category 1.9.10.12) reduction goals.

iii. At least one example of the most substantial business decision made as a result of the integration of climate-related issues

In 2017, Kao made the following two important decisions:

1) We changed the criteria for investment decisions as measures to promote investment for reduced emissions. Previously, the criteria for making a capital investment decision required the EVA to turn positive within the depreciation period. However, we changed the criteria for solar power generation equipment so that the EVA has until the end of the manufacturer's performance guarantee period to turn positive. This has allowed us to install 334 kW solar power generation equipment in the Ehime Plant and we expect a reduction of emissions by approximately 200t-CO2 per year.

2) We expanded the scope of application of water-saving technology used for ultra-condensed type liquid clothing detergent to include conventional liquid clothing detergent. As a result, we have added water-saving type clothing detergents that are significantly effective for category 10 reductions in scope 3 to our product lineup.

C3.1d

(C3.1d) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenarios	Details
2DS	- How the selected scenario(s) were identified, with reference to the inputs, assumptions and analytical methods used. Kao analyzed scenarios on the assumption that reduction efforts based on the Paris Agreement will be made throughout the world for 2050. 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. 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. - A description of the time horizon(s) considered, and why they are relevant to your organization. Since Kao has set an SBT target, we have set 2030 and 2050, which are within 5 to 15 years from the present. - 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. - 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, we installed a renewable electricity facility that contributes to reducing scope 2 emissions by 200 tons in Kao Ehime Plant, which is a Human Health Care Business plant, in 2017.

C4. Targets and performance

C4.1

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

C4.1b

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

Target reference number
Int 1

Scope
Scope 1 +2 (market-based)

% emissions in Scope
100

% reduction from baseline year
35

Metric
Metric tons CO2e per unit revenue

Base year
2005

Start year
2009

Normalized baseline year emissions covered by target (metric tons CO2e)
993000

Target year
2020

Is this a science-based target?
No, but we anticipate setting one in the next 2 years

% achieved (emissions)
87.19

Target status
Underway

Please explain
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 2017: 1,058,000 (t-CO2) e) Amount of sales in 2017: 1,489,000 (million-Yen) f) d)/e)=0.71 g)[1- {c)-f)}/c)]*100=30.5(%) h) % achieved: 30.5(%)/35(%)*100=87.19(%) The boundary of this target is all Kao sites.

% change anticipated in absolute Scope 1+2 emissions
13.77

% change anticipated in absolute Scope 3 emissions
0

Target reference number
Int 2

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

% emissions in Scope
64.24

% reduction from baseline year
35

Metric
Metric tons CO2e per unit revenue

Base year
2005

Start year
2009

Normalized baseline year emissions covered by target (metric tons CO2e)
6248000

Target year
2020

Is this a science-based target?
No, but we anticipate setting one in the next 2 years

% achieved (emissions)
72.92

Target status
Underway

Please explain
a) Normalized baseline year emissions covered by target: 6,248,000 (t-CO2) b) Normalized baseline year amount of sales: 539,000 (million-Yen) c) a)/b)=11.6 d) Emissions in 2017: 7,651,000 (t-CO2) e) Amount of sales in 2017: 886,000 (million-Yen) f) d)/e)=8.6 g) {c)-f)}/c)=25.5(%) h) % achieved: 25.5(%)*100/35(%)=72.92(%) The boundary of this target is consumer products in Japan.

% change anticipated in absolute Scope 1+2 emissions
-14.75

% change anticipated in absolute Scope 3 emissions
25.81

C4.2

(C4.2) Provide details of other key climate-related targets not already reported in question C4.1/a/b.

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 projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	1	0
To be implemented*	146	2437
Implementation commenced*	8	165
Implemented*	261	27572
Not to be implemented	2	0

C4.3b

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

Activity type
Energy efficiency: Building services

Description of activity
Lighting

Estimated annual CO2e savings (metric tonnes CO2e)
1282

Scope
Scope 2 (market-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)
72858000

Investment required (unit currency – as specified in CC0.4)
311979000

Payback period
4 - 10 years

Estimated lifetime of the initiative
3-5 years

Comment
We have done some activities, for example changing from fluorescent to LED, changing to new high efficiency type air conditioner and reducing number of light.

Activity type
Energy efficiency: Processes

Description of activity
Heat recovery

Estimated annual CO2e savings (metric tonnes CO2e)
8556

Scope
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)
350049000

Investment required (unit currency – as specified in CC0.4)

213794000

Payback period
<1 year

Estimated lifetime of the initiative
1-2 years

Comment
We have done some activities, for example recovering steam, changing to new high efficinecy type equipment and install heat pump.

Activity type
Low-carbon energy purchase

Description of activity
Hydro

Estimated annual CO2e savings (metric tonnes CO2e)
16734

Scope
Scope 2 (market-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)
0

Investment required (unit currency – as specified in CC0.4)
0

Payback period
<1 year

Estimated lifetime of the initiative
Ongoing

Comment
Three of our factories in EU, Kao Manufacturing Germany and so on purchase renewable electricity. Further some factries in Japan changed electric supplyer to lower emission electric supplyer.

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

29

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
April 1 2005

Base year end
March 31 2006

Base year emissions (metric tons CO2e)
693448

Comment

Scope 2 (location-based)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 2 (market-based)

Base year start
April 1 2005

Base year end
March 31 2006

Base year emissions (metric tons CO2e)
299020

Comment

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 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?

Row 1

Gross global Scope 1 emissions (metric tons CO2e)
653145

End-year of reporting period
<Not Applicable>

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?

Row 1

Scope 2, location-based
447267

Scope 2, market-based (if applicable)
404968

End-year of reporting period
<Not Applicable>

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 scope1 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 the 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) Account for your organization's Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status
Relevant, calculated

Metric tonnes CO2e
4495812.58

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
24.12

Explanation

Capital goods

Evaluation status
Relevant, calculated

Metric tonnes CO2e
239380.3

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

Explanation

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

Evaluation status
Relevant, calculated

Metric tonnes CO2e
29017.23

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

Explanation

Upstream transportation and distribution

Evaluation status
Relevant, calculated

Metric tonnes CO2e
253380.5

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. Calculatiion 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

Explanation

Waste generated in operations

Evaluation status
Relevant, calculated

Metric tonnes CO2e
583790

Emissions calculation methodology
Activity volume is classified by type of waste and processing . 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

Explanation

Business travel

Evaluation status
Relevant, calculated

Metric tonnes CO2e
3658.04

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

Explanation

Employee commuting

Evaluation status
Relevant, calculated

Metric tonnes CO2e
18323.22

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

Explanation

Upstream leased assets

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
0

Emissions calculation methodology
Kao rents some equipment like as sales car. Emission from these equipments has included in category "Scope1 and Scope2". Since this emission was contained in "Scope1 and Scope2", it was taken as zero from this year.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Explanation

Downstream transportation and distribution

Evaluation status
Relevant, calculated

Metric tonnes CO2e
96830.51

Emissions calculation methodology
Activity volume is the weight of sold products which excluded Kao deliveried 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

Explanation

Processing of sold products

Evaluation status
Relevant, calculated

Metric tonnes CO2e
118633.57

Emissions calculation methodology
Activity volume is the number of sold of fatty alcohols, tertiary amine and many kinds of surfactants. 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

Explanation

Use of sold products

Evaluation status
Relevant, calculated

Metric tonnes CO2e
4687086.6

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 slod 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

Explanation

End of life treatment of sold products

Evaluation status
Relevant, calculated

Metric tonnes CO2e
1415190.23

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

Explanation

Downstream leased assets

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
0

Emissions calculation methodology
Kao has no downstream leased assets.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Explanation

Franchises

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
0

Emissions calculation methodology
Kao has no Franchises.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Explanation

Investments

Evaluation status
Relevant, calculated

Metric tonnes CO2e
8001

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

Explanation

Other (upstream)

Evaluation status

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Other (downstream)

Evaluation status

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

C6.7

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

Yes

C6.7a

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

65031.28

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
0.0007104

Metric numerator (Gross global combined Scope 1 and 2 emissions)
1058113

Metric denominator
unit total revenue

Metric denominator: Unit total
1489421000

Scope 2 figure used
Market-based

% change from previous year
2.38

Direction of change
Decreased

Reason for change
The emissions intensity decreased 2.38% thanks to controlling GHG emissions decrease by 1.21% in spite of the unit total revenue increase by 1.20%. Excluding emission reductions equivalent to 12,580 tons, the emissions intensity decreased by 1.22% to 0.000719 compared with 2016.

Intensity figure
0.2931

Metric numerator (Gross global combined Scope 1 and 2 emissions)
1058113

Metric denominator
metric ton of product

Metric denominator: Unit total
3610074

Scope 2 figure used
Market-based

% change from previous year
7.14

Direction of change
Decreased

Reason for change
This emissions intensity decreased 7.14% thanks to controlling GHG emissions decrease by 1.21% in spite of the production output increase by 6.38%. Excluding emission reductions equivalent to 12,580 tons, the emissions intensity decreased by 6.03% to 0.2966 compared to 2016.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization have greenhouse gas emissions other than carbon dioxide?
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	650265	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	252	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	967	IPCC Fourth Assessment Report (AR4 - 100 year)
HFCs	1636	IPCC Fourth Assessment Report (AR4 - 100 year)
PFCs	6	IPCC Fourth Assessment Report (AR4 - 100 year)
SF6	19	IPCC Fourth Assessment Report (AR4 - 100 year)
NF3	0	IPCC Fourth Assessment Report (AR4 - 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	271283
Asia Pacific (or JAPA)	289698
US, Latin America and Caribbean (USLAC)	43318
Eastern Europe, Middle East, and Africa (EEMEA)	48846

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	634241
Office,sales	18904

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 in market-based approach (MWh)
Japan	196702	173394	979853	499
Asia Pacific (or JAPA)	205799	208437	952665	0
US, Latin America and Caribbean (USLAC)	21604	14462	132698	0
Europe, the Middle East, Africa and Russia (EMEAR)	23162	8675	98338	29813

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 emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
Production	409656	372495
Offices, sales	37611	32473

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?

Increased

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	15211	Decreased	1.46	We reduced 15,211tons of GHG emissions by introducing renewable energy in 2017. -1.46%=(-15,211/1,041,000)*100
Other emissions reduction activities	12580	Decreased	1.21	We reduced 12,580tons of GHG emissions by 261 emissions reduction activities in 2017. -1.21%=(-12,580/1,041,000)*100
Divestment	0	No change	0	There was no divestment in 2017.
Acquisitions	0	No change	0	There was no acquisition in 2017.
Mergers	616	Increased	0.06	Kao merged new company, Kao Chimigraph in 2017. 0.06%=(616/1,041,000)*100
Change in output	26735	Increased	2.57	Because of increasing our revenue, our production output increase also. 2.57%=(26,735/1,041,000)*100
Change in methodology	7758	Decreased	0.75	The whole GHG emissions decreased by 7,758 tons due to the changes of emission factor of purchased electricity. -0.75%=(-7,758/1,041,000)*100
Change in boundary	0	No change	0	There was no Change in boundary in 2017.
Change in physical operating conditions	0	No change	0	There was no Change in physical operating conditions in 2017.
Unidentified	2236	Increased	0.21	There was 2,236 tons of emission increased that we can not identify. 0.21%=(2,236/1,041,000)*100
Other	22692	Increased	2.21	We increased 22,692 tons of GHG emissions because of the product mix changed due to the market demand, and so on. 2.21%=(22,692/1,041,000)*100

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 undertakes this energy-related activity
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 MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	0	2973865	2973865
Consumption of purchased or acquired electricity	<Not Applicable>	29813	2094769	2124582
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	0	38972	38972
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	499	<Not Applicable>	499
Total energy consumption	<Not Applicable>	30312	5107606	5137918

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 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
41335

MWh fuel consumed for the self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

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

Fuels (excluding feedstocks)

Kerosene

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
11599

MWh fuel consumed for the self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

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

Fuels (excluding feedstocks)
Other, please specify (A-heavy oil)

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
16422

MWh fuel consumed for the self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

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

Fuels (excluding feedstocks)
Other, please specify (C-heavy oil)

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
5594

MWh fuel consumed for the self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

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

Fuels (excluding feedstocks)
Liquefied Petroleum Gas (LPG)

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
2032

MWh fuel consumed for the self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

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

Fuels (excluding feedstocks)
Liquefied Natural Gas (LNG)

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
2512747

MWh fuel consumed for the self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

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

Fuels (excluding feedstocks)
Diesel

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
384136

MWh fuel consumed for the self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

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

C8.2d

(C8.2d) List the average emission factors of the fuels reported in C8.2c.

Diesel

Emission factor
2.58496

Unit
kg CO2 per liter

Emission factor source
GHG reporting protcol in Japan (in Japan case)

Comment

Kerosene

Emission factor
2.48948

Unit
kg CO2 per liter

Emission factor source
GHG reporting protcol in Japan (in Japan case)

Comment

Liquefied Natural Gas (LNG)

Emission factor
2.23403

Unit
metric tons CO2 per m3

Emission factor source
GHG reporting protcol in Japan (in Japan case)

Comment

Liquefied Petroleum Gas (LPG)

Emission factor
2.99889

Unit
metric tons CO2 per m3

Emission factor source
GHG reporting protcol in Japan (in Japan case)

Comment

Motor Gasoline

Emission factor
2.32166

Unit
metric tons CO2 per m3

Emission factor source
GHG reporting protcol in Japan (in Japan case)

Comment

Other

Emission factor
2.70963

Unit
kg CO2 per liter

Emission factor source
GHG reporting protcol in Japan (in Japan case)

Comment
This factor is for A-heavy oil. The factor of C-heavy oil is 2.99595 kg CO2/L.

C8.2e

(C8.2e) 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	286782	2124582	499	499
Heat	0	0	0	0
Steam	0	38972	0	0
Cooling	0	0	0	0

C8.2f

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

Basis for applying a low-carbon emission factor
Off-grid energy consumption from an on-site installation or through a direct line to an off-site generator owned by another company

Low-carbon technology type
Solar PV

MWh consumed associated with low-carbon electricity, heat, steam or cooling
499

Emission factor (in units of metric tons CO2e per MWh)
0

Comment
We genereted electricity by solar panels on sites and consumed for use in the sites.

Basis for applying a low-carbon emission factor
Power Purchase Agreement (PPA) with energy attribute certificates

Low-carbon technology type
Hydropower

MWh consumed associated with low-carbon electricity, heat, steam or cooling
29813

Emission factor (in units of metric tons CO2e per MWh)
0

Comment
Three of our factories in EU, Kao Manufacturing Germany and so on purchase renewable electricity. The purchased electricity fully coverd the whole electricity the factories' consume.

C9. Additional metrics

C9.1

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

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 and/or Scope 2 emissions and attach the relevant statements.

Scope
Scope 1

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
2018_Independent Assurance Report+ CDP letter.pdf

Page/ section reference
1,2/all

Relevant standard
ISAE 3410

Proportion of reported emissions verified (%)
100

Scope
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
2018_Independent Assurance Report+ CDP letter.pdf

Page/ section reference
1,2/all

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 3 emissions and attach the relevant statements.

Scope
Scope 3- at least one applicable category

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Attach the statement
2018_Independent Assurance Report+ CDP letter.pdf

Page/section reference
1,2/all

Relevant standard
ISAE 3410

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	Other, please specify (Energy consumption)	ISAE3000	Total Energy Consumption (fossil oil, renewable energy, electric, steam) 2018_Independent Assurance Report+ CDP letter.pdf

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

C11.1b

(C11.1b) Complete the following table for each of the emissions trading systems in which you participate.

EU ETS

% of Scope 1 emissions covered by the ETS

Period start date

Period end date

Allowances allocated

Allowances purchased

Verified emissions in metric tons CO2e

Details of ownership
Facilities we own and operate

Comment

Tokyo CaT

% of Scope 1 emissions covered by the ETS
1.55

Period start date

Period end date

Allowances allocated

Allowances purchased

Verified emissions in metric tons CO2e

Details of ownership
Facilities we own and operate

Comment

C11.1d

(C11.1d) What is your strategy for complying with the systems in which you participate or anticipate participating?

- 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)
3500

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
Case 1: Upon considering the source of electricity procurement, Kao takes the CO2 emission factor into account. We implemented internal carbon pricing for CO2 emissions that are attributable to purchased electricity and use such pricing to determine suppliers. Case2: When deciding whether to install energy-saving equipment, we use internal carbon pricing to determine the CO2 reduction effect as well as the energy cost reduction effect through energy-saving, and use the results to calculate the number of years it will take to recover the cost of equipment to be installed. Such calculation results differ depending on whether the internal carbon pricing is applied or not, and that leads to different results compared to making decisions based on the conventional criteria on whether an equipment should be installed when prioritizing and analyzing energy-efficiency or energy-saving activities, which affects the decision-making process for businesses.

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

% Scope 3 emissions as reported in C6.5
38.63

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 as part of the CSR self-assessment, the number of plants that have achieved the environmental criteria in 2017 increased by 73 compared to 2016 (Kao supplier plants). As for the activities of important suppliers through the CDP SC Program, the number of suppliers who have set reduction targets in 2017 increased by 4% (9 companies) from 2016.

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

Size of engagement
91

% 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 lifecycle. 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
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 lifecycle. 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.

C12.1c

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

We have confirmed that 40% or more of CO2 emissions in the lifecycles of Kao products are attributable to the stage of product usage (Scope 3, Category 11). Aiming to reduce environmental impact, we have been engaging in the "Let's eco together" activity with various stakeholders. Our business partners, including those in the distribution field, are important stakeholders.

Since many customers who use our products still purchase them in distributors' stores, we consider distributors to be important partners for engaging in climate change-related activities.

Kao held environmental events at 210 stores and administrative facilities in Japan in 2017 under a theme strongly related to climate change: "Saving electricity, saving water, and reducing trash." Approximately 90,000 people attended these events.

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 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.

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 cotributions to society. As a part of that ICCA and WBCSD, World Business Council for Sustainable Development, dreaw up the guidelines for the contributions calculations.

How have you, or are you attempting to, influence the 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 Asociation 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 Sustaninability 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
Kao_yu-ho_2017_all_01.pdf

Content elements
Risks & opportunities

Publication
In voluntary sustainability report

Status
Complete

Attach the document
sustainability2018-e-all.pdf

Content elements
Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets

Publication
In voluntary communications

Status
Complete

Attach the document
reports-fy2018e-all-002.pdf

Content elements
Governance
Emissions figures
Emission targets

C14. 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.

C14.1

(C14.1) Provide details for the person that has signed off (approved) your CDP climate change response.

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