Welcome to your CDP Climate Change Questionnaire 2022

C0. Introduction

C0.1

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

Kao. The Company is a Japan-based company that operates through two business segments: Consumer Product and Chemical. The Consumer Product segment has four divisions. The Hygiene and Living Care Business offers fabric care products including detergents for apparel use, and home care products including detergents for kitchen use and hygiene products and paper diapers. The Health and Beauty Care Business offers premium skincare products such as face washes, as well as premium hair care products including shampoos, hair styling products and hair coloring products, among others. The Life Care Business provides food and beverage products such as drinks and professional use products. The Cosmetic Business provides cosmetics such as lotion, foundation and lipstick. The Chemical Business provides oil and fat products such as fatty acids; functional materials products such as surface acting agents and additives for plastic use, as well as specialty chemical products such as essences, among others.
The Hygiene and Living Care Business accounted for 36.4% of total turnover in fiscal 2021; The Health and Beauty Care Business, 26.2%; The Life Care Business, 3.8%; The Cosmetic Business, 16.9%; and The Chemical Business,16.7%. The Company reported JPY 1,418.8 b in revenues and 33,507 permanent employees at December 31, 2021.

C0.2

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

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	January 1, 2021	December 31, 2021	Yes	3 years

C0.3

(C0.3) Select the countries/areas in which you operate.

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

C0.4

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

JPY

C0.5

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

Operational control

C0.8

(C0.8) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?

Indicate whether you are able to provide a unique identifier for your organization	Provide your unique identifier
Yes, an ISIN code	JP320580000

C1. Governance

C1.1

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

Yes

C1.1a

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

Position of individual(s)	Please explain
Chief Executive Officer (CEO)	Since climate change affects Kao's business, it must be monitored as a business management issue and is therefore under the CEO's oversight. CEO is a chairman of the ESG Managing Committee, which is one of the internal organizations responsible for Kao's response to climate change, under the board. This committee is approved by the Board, under the Kao corporate governance system. The ESG Managing Committee manages progress in activities related to locating new opportunities, while the Responsible Care Promotion Committee manages risk-management activities. The ESG Managing Committee is convened more than six times in 2021. The contents were supervised by the Board and deliberated more than six times in 2021. Recommendations for ESG strategies linked to the K25 medium-term management plan were discussed and approved by the ESG Managing Committee in 2021. One of the objectives of K25 was to become a company that is indispensable to sustainable society (carbon recycling: converting carbon dioxide into raw materials). The goal of Kao ESG management was to achieve zero carbon emissions.

C1.1b

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

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – some meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Monitoring implementation and performance of objectives	Climate change-related risks are managed by the RC Committee and the Risk Crisis Management Committee under the jurisdiction of the Internal Control Committee. The person in charge (executive officer) who responds to each identified risk is determined. The person in charge plans and implements the measures and reports the situation to the committee. Both committees are chaired by the CEO. Climate change mechanisms are managed by the ESG Commission. Appoint a person in charge (executive officer) for each identified opportunity. The person in charge formulates and implements the implementation of KPIs and the overall promotion plan, and the committee reports on the progress. The CEO chairs the committee. The activities of the above committees are overseen by the Board of Directors. Therefore, the CEO has all responsibility and authority to comply with Kao's climate change laws and to set and achieve water reduction targets. Here are some examples. In 2021, a review of climate change-related targets was implemented and decided by the Board of Directors.

C1.1d

(C1.1d) Does your organization have at least one board member with competence on climate-related issues?

	Board member(s) have competence on climate-related issues	Criteria used to assess competence of board member(s) on climate-related issues
Row 1	Yes	Worked in R&D that is responsible for the development of decarbonization-related products for one year or more, or in divisions related to climate change risk management such as the ESG Division and the Supply Chain Management Division, or served as a member of the Risk & Crisis Management Committee.

C1.2

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

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

C1.2a

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

i) Where in the organizational structure that/those position(s) and/or committee(s) lies
The Risk and Crisis Management Committee and the Responsible Care Promotion Committee under the Internal Control Committee, which is under the control of the Board of Directors, manage risks including climate change, water and forest.
The ESG Managing Committee, which is under the control of the Board of Directors, manages ESG visions and its strategy including opportunities related to climate change, water and forest.
The CEO serves as the chairman of the Internal Control Committee as well as the ESG Managing Committee.

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

ⅲ）A Company specific description of the responsibilities of each position and/or committee with regard to assessment and monitoring of climate-related issues.
Kao has laid out its corporate philosophy, “Kao way” which is the foundation of its corporate activity. The missions stipulating in the Kao way are “realization of enriched lifestyle with joy and satisfaction for people throughout the world” and ”contribution to sustainable society”. Kao recognizes that climate change is a great threat in the current and future generations’ realization of enriched lifestyle. Under such recognition, CEO, as the chairman of ESG Managing Committee, has formed 19 prioritized actions to realize “Kirei Lifestyle Plan”

("Decarbonization" is among them) and checks and assess the implementation status. Through a major KPI, Scope 1+2 emissions and product life cycle CO2 emissions have set out in "Decarbonization". "Responsible care promotion committee" which is under the "Internal governance committee", monitors the activity status in the divisions, subsidiaries and affiliate companies every month. The monitoring results are reported to CEO in "Internal governance committee" and "ESG Managing Committee". CEO, the chairman of internal governance committee and ESG Managing Committee, approves the result of the discussion of the committees every month.
Furthermore, an audit is conducted yearly and the activities are checked and if delay happens corrective action is carried out accordingly.

C1.3

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

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	Kao's directors and executive officers can receive long-term incentive compensation according to ESG strength metrics, including performance of climate change activities. ESG strength evaluation index is determined by the evaluation by external indicators such as DJSI and CDP and the degree of achievement of internal targets. Long-term incentive rewards are paid 0-40% of the basic reward depending on the outcome. Kao sets 2030 targets as well as annual targets to manage progress. This targets include climate change issue as 1) reduction in absolute full lifecycle CO2 emissions (Base year 2017) and 2) reduction in absolute scope 1 + 2 CO2 emissions (Base year 2017) and 3) 100% renewable energy usage in electricity consumption. 1) CO2 emissions are reduced by launching products with good rinsability such as laundry / dishwashing detergent and body wash. 2) and 3) working on the procurement of renewable energy and the introduction of solar power generation equipment.

C1.3a

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

Entitled to incentive	Type of incentive	Activity incentivized	Comment
Chief Executive Officer (CEO)	Monetary reward	Emissions reduction target	Kao's CEO can receive long-term incentive compensation according to ESG strength metrics, including

		Energy reduction target Efficiency project Company performance against a climate-related sustainability index	performance of climate change activities. ESG strength evaluation index is determined by the evaluation by external indicators such as DJSI and CDP and the degree of achievement of internal targets. Company performance against a climate-related sustainability index is evaluation by external indicators such as DJSI and CDP. Intarenal targets include emissions reduction project and energy reduciton target. Long-term incentive rewards are paid 0-40% of the basic reward depending on the outcome. Kao sets 2030 targets as well as annual targets to manage progress. This targets include climate change issue as 1) reduction in absolute full lifecycle CO2 emissions (Base year 2017) and 2) reduction in absolute scope 1 + 2 CO2 emissions (Base year 2017) and 3) 100% renewable energy usage in electricity consumption. 1) CO2 emissions are reduced by launching products with good rinsability such as laundry / dishwashing detergent and body wash. 2) and 3) working on the procurement of renewable energy and the introduction of solar power generation equipment.
Executive officer	Monetary reward	Emissions reduction target Energy reduction project Efficiency project Company performance against a climate-related sustainability index	Kao's executive officer can receive long-term incentive compensation according to ESG strength metrics, including performance of climate change activities. ESG strength evaluation index is determined by the evaluation by external indicators such as DJSI and CDP and the degree of achievement of internal targets. Company performance against a climate-related sustainability index is evaluation by external indicators such as DJSI and CDP. Intarenal targets include emissions reduction project and energy reduciton target. Long-term incentive rewards are paid 0-

			40% of the basic reward depending on the outcome. Kao sets 2030 targets as well as annual targets to manage progress. This targets include climate change issue as 1) reduction in absolute full lifecycle CO2 emissions (Base year 2017) and 2) reduction in absolute scope 1 + 2 CO2 emissions (Base year 2017) and 3) 100% renewable energy usage in electricity consumption. 1) CO2 emissions are reduced by launching products with good rinsability such as laundry / dishwashing detergent and body wash. 2) and 3) working on the procurement of renewable energy and the introduction of solar power generation equipment.
Director on board	Monetary reward	Emissions reduction project Emissions reduction target Energy reduction project Efficiency project Company performance against a climate-related sustainability index	Kao's director can receive long-term incentive compensation according to ESG strength metrics, including performance of climate change activities. ESG strength evaluation index is determined by the evaluation by external indicators such as DJSI and CDP and the degree of achievement of internal targets. Company performance against a climate-related sustainability index is evaluation by external indicators such as DJSI and CDP. Intarenal targets include emissions reduction project and energy reduciton target. Long-term incentive rewards are paid 0-40% of the basic reward depending on the outcome. Kao sets 2030 targets as well as annual targets to manage progress. This targets include climate change issue as 1) reduction in absolute full lifecycle CO2 emissions (Base year 2017) and 2) reduction in absolute scope 1 + 2 CO2 emissions (Base year 2017) and 3) 100% renewable energy usage in electricity consumption. 1) CO2 emissions are reduced by

			launching products with good rinsability such as laundry / dishwashing detergent and body wash. 2) and 3) working on the procurement of renewable energy and the introduction of solar power generation equipment.
Chief Procurement Officer (CPO)	Monetary reward	Environmental criteria included in purchases Supply chain engagement	Evaluate all matters of supply chain engagement such as GHG emission reduction activities and water risk management of each supplier.
Buyers/purchasers	Monetary reward	Environmental criteria included in purchases Supply chain engagement	Evaluate all matters of supply chain engagement such as level of GHG emission reduction activities and water risk management of related supplier.
Procurement manager	Monetary reward	Environmental criteria included in purchases Supply chain engagement	Evaluate all matters of supply chain engagement such as level of GHG emission reduction activities and water risk management of related supplier.
Environment/Sustainability manager	Monetary reward	Emissions reduction project Emissions reduction target Energy reduction project Energy reduction target Efficiency project Behavior change related indicator Supply chain engagement Company performance against a climate-related sustainability index	Evaluate all matters such as level of achievement of GHG emission reduction target and energy reduction target (basic unit and absolute quantity) by emission reduction projects, energy reduction projects and efficiency projects, responses to climate change problems, and expansion of sales of low-carbon products
Facilities manager	Monetary reward	Emissions reduction project	Evaluate applicable matters such as level of achievement of GHG emission reduction target and energy reduction

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

C2. Risks and opportunities

C2.1

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

Yes

C2.1a

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

	From (years)	To (years)	Comment
Short-term	0	3	
Medium-term	3	10	
Long-term	10	30	

C2.1b

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

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

C2.2

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

Value chain stage(s) covered

Direct operations
Upstream
Downstream

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

More than once a year

Time horizon(s) covered

Short-term
Medium-term

Long-term

Description of process

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

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

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

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

C2.2a

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

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	An example of risks regarding current regulation is the cap-and-trade system of the Metropolis of Tokyo. The Sumida Office in Japan, which bears plant, is subject to the cap-and-trade system of the Metropolis of Tokyo. Thus, the office must keep its emissions amount below the cap. The office manages monthly emissions, confirms whether or not emission rights must be purchased, and conducts risk assessment on the business impacts.

Emerging regulation	Relevant, always included	Japan, which accounts for approximately 50% of the Kao Group's greenhouse gas (GHG) emissions, has yet to deploy an emission trading system. Once deployed, there will be the risk that achieving sales targets becomes difficult because the production amount cannot be increased as planned due to restrictions imposed on plant operations. Therefore, Kao is monitoring trends with respect to the move toward deploying an emission trading system in Japan while evaluating risks that may arise if such a system is deployed.
Technology	Relevant, always included	Society is shifting to become more energy efficient, so failing to change with the times imposes the risk of lost sales opportunities. Although Kao has already developed products that contribute to reducing GHG emissions, such as a low temperature fixable toner, we must continue to develop highly energy efficient products ahead of other companies. To this end, we investigate market trends, conduct patent surveys, and evaluate risks associated with each technology trend at our offices and laboratories.
Legal	Relevant, always included	Because Kao is engaged in a wide range of business globally, accordingly it is susceptible to various lawsuits including climate-change cases. To prevent environmental lawsuits against us, such as climate-change cases, the Responsible Care Promotion Committee, a subordinate organization of the Internal Control Committee chaired by the CEO, manages the status of compliance with environmental laws, regulations, and amendment information—including those on climate change. Our production sites, in particular, are subject to numerous environmental laws; for Kao's plants to observe environmental laws and regulations, including those on climate change, we invested 1.125 billion yen and spent 3.659 billion yen in 2021.
Market	Relevant, always included	As an example of the risks associated with the market, there is a change in the market due to the rise in temperature. Since approximately 70% of the Kao Group's sales are accounted for by consumer products, seasonal changes in product demand due to temperature increases attributable to climate change pose the risk of lost sales opportunities. For example, a bath tablet "Bub" sales well in winter, and antiperspirant "8x4" and anti-UV products sales well in summer. Thus, Kao has been conducting sophisticated inventory management while evaluating the risks associated with store stock-outs.
Reputation	Relevant, always included	Approximately 50% of Kao's shares are held by investors outside Japan. If we are not actively involved in environmental, social, and governance (ESG) activities, there is a risk that financing, such as issuing of corporate bonds, may not proceed smoothly. For this reason, we must perform ESG activities to the same extent as other companies in our industry around the world. We benchmark such companies while evaluating the risks associated with Kao's ESG activity levels.

Acute physical	Relevant, always included	There is a risk that outdoor workers may suffer heatstroke due to increased temperatures during the summer caused by climate change, significantly reducing work efficiency. Since some Kao plants are chemical plants, they cannot avoid this risk. Therefore, they must take measures such as reducing the number of continuous work hours. Kao evaluates the risks associated with workloads and costs.
Chronic physical	Relevant, always included	An example of the risks associated with chronic phisical is that it affects the operation of factories located along the coast due to rising sea levels. Kao's factory in the Philippines is adjacent to the coast. Therefore, although measures against storm surges have been implemented, by sea level rises, it is expected that the level of the storm surge rises more than now. Therefore, Kao regularly evaluates the risk of storm surges at the plant.

C2.3

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

Yes

C2.3a

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

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation

Carbon pricing mechanisms

Primary potential financial impact

Increased direct costs

Company-specific description

With global warming, extreme weather have begun to occur, including localized torrential rains, the spread of typhoon damage, frequent wildfires, and the melting of Siberian permafrost. In Japan, localized torrential rains and typhoon cause serious damage every year. In addition, there have been reports of people who suffer from heat stroke as a result of rising daytime peak temperatures and lasting days exceeding 40°C,

leading to an increase in the number of people suffering from heat stroke. The goal of society is to achieve real zero greenhouse gas emissions by 2050 and to keep the global temperature rise below 1.5℃ compared to pre-industrial levels.
As society aims at 1.5°C, discussions are under way in many countries toward the introduction of carbon taxes as an effective means of achieving this goal.
Kao confirmed the risk of introducing a carbon tax in Japan because sales in Japan account for 60%.
Kao identified climate change as a risk and conducted a scenario analysis. Kao conducts qualitative and quantitative assessments of risks related to the realization of the "Vision we want to achieve by 2030" for the 2°C and 4°C scenarios, and identifies items that have a major impact on Kao's business. Significant risks include the introduction and enhancement of a carbon tax, increased direct cost due to higher costs for oil-derived raw materials resulting from higher crude oil prices, and damage to facilities and other assets due to increased flood damage resulting from increased short-term rainfall. From IEA World Energy Outlook 2018, Kao projected a carbon-tax of 9,297 JPY/ ton-CO2 in 2030. Meanwhile, Kao's CO2 emissions (Scope1+2) in 2030 would be 1,774,000 tons, a 1.67-fold increase from 2017. If Japan is subject to an additional carbon tax, we recognize that an additional cost of 9,895,726,800 JPY will be required and that direct costs will be increased. This is a strategically significant risk for Kao to have a material strategic or financial impact.
So Kao has introduced Internal Carbon Pricing system to reduce carbon tax.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

9,895,726,800

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Kao's CO2 emissions (Scope1+2) in 2030 would be 1,774,000 tons, a 1.67-fold increase from 2017 for BAU. Meanwhile, from IEA World Energy Outlook 2018, Kao expects a carbon-tax of 9,297 JPY/ ton-CO2 in 2030. Scope 1+2 emission in Japan is approximately 60% on Kao Group. From this, Kao's carbon tax in 2030 is assumed to be 9,895,726,800 JPY in Japan . This increases manufacturing costs as a direct

expense and creates a financial impact. This is strategically significant of Kao's material strategic or financial impact.
1,774,000 tons-CO2 × 9, 297JPY/ tons-CO2 ×60% = 9,895,726,800 JPY

<Case study>
To reduce the impact of carbon tax, we should reduce scope 1+2 emission. So, Kao has decide to raise 2030 target of scope1+2 from 22% reduction to 55% vs 2017. To achieved it, Kao has raised the ICP unit price from 3500 JPY to 18500 JPY /t-CO2, Kao has operated Internal Carbon Pricing system since 2006.
As these activities, scope1+2 emission in 2021 was 20% reduction vs 2017 (15% reduction in 2019). Kao continue to conduct these acitons until at least 2030.

Cost of response to risk

1,416,000,000

Description of response and explanation of cost calculation

In order to promote efforts to realize a decarbonizing society, it is recognized that the introduction of carbon pricing, including carbon tax, is required internationally, and discussions on the introduction of carbon tax, etc. are in progress in many countries. When carbon pricing is introduced in the future, if no GHG-reduction activities are implemented, a large amount of additional costs, such as carbon tax, will be required, and Direct Cost will be increased. To this end, Kao has established a system to promote energy-saving activities at each of its sites, and is continuing to monitor energy consumption, as well as implementing thorough energy-saving activities, such as reducing energy loss such as waste heat, upgrading to highly efficient equipment, and streamlining manufacturing processes. Kao is also promoting the installation of solar panels as a means of utilizing energy with low CO2 emissions.
In 2021, Kao implemented the following two initiatives to reduce the use of energy in its direct operations. The initiatives are reduction of cogeneration efficiency, upgrade to high efficiency machine, stop / reduction of pumps / compressors, installation of solar power generation, reduction of steam amount / steam loss, improvement of air leakage, reduction of operating number, and LED lighting. As a result of these activities in 2021, CO2 emissions were reduced by approximately 1,000 tons.
In order to reduce CO2 significantly, the departments promoting energy-saving activities at individual plants are investigating the possibility of investing in renewable energy, such as purchasing electricity from renewable energy sources and self-consuming photovoltaic power generation.
In 2021, Kao invested 1,416 million JPY in facilities to reduce Scope1+2 emissions.
751,000,000 JPY (Japan) + 665,000,000 JPY (Asia, Europe and the Americas) = 1,416,000,000 JPY

Comment

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical

Cyclone, hurricane, typhoon

Primary potential financial impact

Increased capital expenditures

Company-specific description

Kao Group's Pilipinas Kao, Inc. is located in the Philippines. It manufactures higher alcohol, fragrance materials, etc., and has facilities with a book value of JPY 14,892,000,000. If Pilipinas Kao, Inc.'s production facilities are damaged, production volume is reduced, and some production items cannot be manufactured, Kao will be unable to supply chemical products in response to customers' demands, and there is a risk of delays in the production of detergents using these products as raw materials and a decline in production volume.

On the other hand, typhoons approaching or landing in the Philippines due to climate change are becoming stronger and the damage is on the rise.

The damage rate of the capital stock of enterprises due to inundation is said to be 8.7% in underfloor flooding. The above risks have a financial impact, such as an increase in capital investment expenses. At least 1,295,604,000 JPY of capital expenditure is required to return the plant to normal when it is damaged at this rate. This is strategically significant of Kao's material strategic or financial impact.

14,892,000,000 JPY x 8.7% = 1,295,604,000 JPY

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

1,295,604,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

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

Cost of response to risk

5,000,000

Description of response and explanation of cost calculation

If inundation occurs at the plant and the production facility is damaged, capital expenditures will be required to restore the facility. Pilipinas Kao, Inc. is located along the coast, it is important to take measures to reduce the risk of flooding due to typhoons and storm surges. Accordingly, Pilipinas Kao, Inc. decided to create mangrove forests on the coast and enhance the natural disaster prevention function. Since 2010, Pilipinas Kao, Inc. has built mangrove forests on the coast and continued to do so in 2021.
5 million yen as expenses for purchasing, planting and maintaining mangroves.
0.2 million JPY (purchase of mangrove seedlings) + 4.8 million JPY (personnel expenses for tree planting, maintenance, and management) = 5 million JPY

Comment

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Downstream

Risk type & Primary climate-related risk driver

Market
Changing customer behavior

Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Company-specific description

Kao's Higene & living Care business, which accounted for 35.0% of Kao's remuneration in 2021, is comprised of products closely linked to the daily lives of consumers, such as laundry products (laundry detergents, finishing agents, and bleaches). In Japan, Kao's main market, laundry is usually dried outdoors on clear days and indoors on rainy days. In Japan, the use of laundry products depends on the weather conditions, and future weather changes due to climate change may have a major impact on the market for laundry products. The fabric and home care market, which includes laundry products in Japan, grew 3.3% in 2021 compared to the previous year and is expected to continue growing.

Kao's introduction of new products creates the risk that if it does not grow, it will lead to a decline in sales, rather than an increase in sales.

Kao's domestic Higene & living Care business in 2021 generated 366,600,000,000 JPY in remuneration, of which 3.3% was approximately 12,097,800,000 JPY. Losing this opportunity is the risk of Kao having a significant strategic or financial impact (strategically significant).

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

12,097,800,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Kao's Highgene & Living Care business, which accounted for 35.0% of Kao's remuneration in 2021, is comprised of products closely linked to the daily lives of consumers, such as laundry products (laundry detergents, finishing agents, and bleaches). In Japan, Kao's main market, laundry is usually dried outdoors on clear days and indoors on rainy days. In Japan, the use of laundry products depends on the weather conditions, and future weather changes due to climate change may have a major impact on the market for laundry products. The fabric and home care market, which includes laundry products in Japan, grew 3.3% in 2021 compared to the previous year and is expected to continue growing.

It is believed that products of many of the growth, that appeal for the smell. Kao's

financial impact is that the introduction of new products will lead to a decline in sales, rather than an increase in sales, if it is not able to address its growth. Kao's domestic highgene & living care sales in 2021 amounted to 366,600,000,000 JPY, of which 3.3% were 12,097,800,000 JPY. Losing this opportunity is the risk of Kao having a strategically significant impact on its finance.
366,600,000,000 JPY×3.3%=12,097,800,000 JPY

Cost of response to risk

33,900,000,000

Description of response and explanation of cost calculation

Kao's Highgene & Living Care business, which accounted for 35.0% of Kao's remuneration in 2021, is comprised of products closely linked to the daily lives of consumers, such as laundry products (clothing detergents, finishing agents, and bleach). In Japan, Kao's main market, laundry is usually dried outdoors on clear days and indoors on rainy days.
Tactics :
In Japan, the use of laundry products depends on the weather conditions, and future weather changes due to climate change may have a major impact on the market for laundry products. On the other hand, the fabric and home care market, which includes laundry products in Japan, grew by 3.3% year-on-year in 2021 and is expected to continue growing. Kao's financial impact is that the introduction of new products will lead to a decline in sales, rather than an increase in sales, if it is not able to address its growth.
Actions performed:
Kao conducted a climate change scenario analysis in 2021 to investigate future changes in weather and the risks that changes in weather may have on the market for laundry products.
Results obtained:
Climate change scenario analysis showed that when the average temperature rises by 2°C, Japan's weather will not change in the number of sunny days in the summer, increasing the frequency of heavy rains and storm surges caused by strong cyclones and typhoons, i.e. higher humidity days. Drying clothes indoors on humid days produces odors that do not occur when dried outdoors, which may increase demand for smell-appealing laundry products and expand the market for laundry products. Failure to do so may result in increased sales and lower sales. Kao decided to strengthen R&D to increase the number of products that appeal for the smells, such as a product "Wide Hyter CLEAR HERO Deodorizing Gel" launched in 2020, and to increase production capacity.
In 2021, we spent 33.9 billion JPY on research and development in the Highgene & Living Care business and on expanding manufacturing facilities.
10.2 billion JPY (R&D expenses) + 23.7 billion JPY (manufacturing facility expansion expenses) = 33.9 billion JPY

Comment

C2.4

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

Yes

C2.4a

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

Identifier

Opp1

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Use of more efficient production and distribution processes

Primary potential financial impact

Reduced direct costs

Company-specific description

Kao has set a goal of reducing energy consumption by 1% each year. Electricity consumption in Japan and Asia is 86%. So it is efficient to save electricity comsumption in Japan and Asia.
Kao is a manufacturer and has more than 40 manufacturing bases in Japan, Asia, Europe and the Americas. These bases consume approximately 5,000 GWh of energy per year. The cost is over 10 billion yen. Kao consumes most energy at manufacturing bases, energy consumption at office and logistic site is much less than manufacturing bases. On the other hand, Kao is targeting net sales of JPY 2.5 trillion in 2030 and operating income of 17% (currently around 14%). Efforts to reduce energy use and reduce costs leads to lower manufacturing costs and provide an important opportunity to increase operating income. In addition, Kao's climate change scenario analysis conducted in 2019 showed that fossil fuel prices would increase under the 2°C scenario. Therefore, for Kao, which uses a large amount of fossil fuels, reducing energy consumption for manufacturing will lead to a reduction in manufacturing costs, which is a major opportunity to achieve the operating profit target for 2030.
Kao has established a system to promote energy-saving activities at each of its sites, and is continuing to monitor energy consumption, as well as implementing thorough energy-saving activities such as reducing energy loss such as waste heat, upgrading to highly efficient equipment, and streamlining manufacturing processes.

In 2021, Kao implemented the following initiatives to reduce the use of energy in direct operations. The initiatives are reduction of cogeneration efficiency, upgrade to high efficiency machine, stop / reduction of pumps / compressors, installation of solar power generation, reduction of steam amount / steam loss, improvement of air leakage, reduction of operating number, and LED lighting.
As a result of these activities in 2021, the amount of energy used by 16GWh was reduced, and the amount of direct cost reduced was JPY 39 million.
Kao plans to continue these energy-saving activities, and therefore, we expect to reduce this direct cost every year in the future.

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

39,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Kao is a manufacturer and has more than 40 manufacturing bases in Japan, Asia, Europe and the Americas. These bases consume approximately 5,000 GWh of energy every year to manufacture products. The cost is over 10 billion yen. Kao consumes almost the same amount of fossil fuel for heat utilization and electricity for facility operation. At the same time, Kao is targeting net sales of JPY 2.5 trillion in 2030 and operating income of 17% (currently around 14%). Efforts to reduce energy use is 'reduced direct costs' and this activity leads to lower manufacturing costs and provide an important opportunity to increase operating income. In addition, Kao's climate change scenario analysis conducted in 2019 showed that fossil fuel prices would increase under the 2°C scenario. Therefore, for Kao, which uses a large amount of fossil fuels, reducing energy consumption for manufacturing will lead to a reduction in manufacturing costs, which is a major opportunity to achieve the operating profit target for 2030.
In 2021, Kao implemented the following initiatives to reduce the use of energy in direct operations. The initiatives are reduction of cogeneration efficiency, upgrade to high efficiency machine, stop / reduction of pumps / compressors, installation of solar power generation, reduction of steam amount / steam loss, improvement of air leakage, reduction of operating number, and LED lighting. As a result of these activities in 2021,

the amount of energy used by 16GWh was reduced, and the amount of direct cost reduced was JPY 396 million. Our each manufacturing base calculates the energy savings and energy cost savings for each individual energy conservation project and add up these results of each projects. After that HQ summarizes results of them, the amount of direct cost reduction was JPY 396 million. Kao defines these reductions for each project as the amount of reduction compared to what would have occurred had the project not been implemented.
124 million JPY (Japan) +272 million JPY (Asia, Europe, and the Americas) = 1396 million JPY
Kao plans to continue these energy-saving activities past 2030, and therefore, we expect to reduce this direct cost every year in the future.

Cost to realize opportunity

1,416,000,000

Strategy to realize opportunity and explanation of cost calculation

Kao is a manufacturer and has more than 40 manufacturing bases in Japan, Asia, Europe and the Americas. These bases consume approximately 5,000 GWh of energy every year to manufacture products. The cost is over 10 billion yen. Kao consumes almost the same amount of fossil fuel for heat utilization and electricity for facility operation. At the same time, Kao is targeting net sales of JPY 2.5 trillion in 2030 and operating income of 17% (currently around 14%). Efforts to reduce energy use and reduce costs will lead to lower manufacturing costs and provide an important opportunity to increase operating income. In addition, Kao's climate change scenario analysis conducted in 2019 showed that fossil fuel prices would increase under the 2°C scenario. Therefore, for Kao, which uses a large amount of fossil fuels, reducing energy consumption for manufacturing will lead to a reduction in manufacturing costs, which is a major opportunity to achieve the operating profit target for 2030.
Kao has strategy to make continuous efforts to reduce energy consumption during manufacturing past 2030. So we has established a system to promote energy-saving activities at each manufacturing base like as reducing energy loss such as waste heat, upgrading to highly efficient equipment, and so on. Further we monitor energy consumption at each base and feed back it to them.
<case study>
In 2021, Kao reduced waste heat at plants in the Philippines and Malaysia, where a large amount of heat is used, and worked to increase the efficiency of use as described above. The project leader calculated the amount of energy saved by implementing the project. They further multiplied the amount of energy reduced by the unit cost of energy to calculate the energy cost savings associated with the energy reduction. After that HQ summarized results of them.
Kao invested 1,416 million JPY in 2021.
751 million JPY (Japan) +665 million JPY (Asia, Europe, and the Americas) = 1,416 million JPY
In addition, Kao continues energy conservation activities, including the rationalization of manufacturing processes past 2030.

Comment

Identifier

Opp2

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Kao's highgene and living care business, which accounted for 35.0% of Kao's remuneration in 2021, is comprised of products closely linked to the daily lives of consumers, such as laundry products (laundry detergents, finishing agents, and bleaches). In Japan, Kao's main market, laundry is usually dried outdoors on clear days and indoors on rainy days. The fabric and home care market, which includes laundry products in Japan, grew 3.3% in 2021 compared to the previous year and is expected to continue growing.

Kao conducted a climate change scenario analysis in 2020 to investigate future changes in weather and the potential for changes in weather to the market for laundry products. The results of the analysis showed that the weather in Japan would not change in the number of sunny days in the summer when the average temperature rose by 2°C, and the temperature would rise. Such changes in weather can lead to changes in clothing behavior, i.e., increased frequency of sweating and changing clothes, resulting in an increase in the amount of laundry and an increase in the number of laundry washes.

These changes in laundry habits have resulted in increased demand related to the Fabric & Home Care business and opportunities for increased sales in this business. The fabric and home care market, which includes laundry products in Japan, grew 3.3% in 2021 compared to the previous year due to changes in laundry habits and is expected to continue growing. We expect this growth to continue for some time in the future. Kao's highgene and living care sales in Japan were 366,600 million JPY on 2021. We expect a 3.3% (12,097,800,000 JPY) increase in this sales due to changes in laundry habits.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

12,097,800,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Kao's higene and living care business, which accounted for 35.0% of Kao's remuneration in 2021, is comprised of products closely linked to the daily lives of consumers, such as laundry products (laundry detergents, finishing agents, and bleaches). In Japan, Kao's main market, laundry is usually dried outdoors on clear days and indoors on rainy days. The fabric and home care market, which includes laundry products in Japan, grew 3.3% in 2021 compared to the previous year and is expected to continue growing.

Kao conducted a climate change scenario analysis in 2021 to investigate future changes in weather and the potential for changes in weather to the market for laundry products. The results of the analysis showed that the weather in Japan would not change in the number of sunny days in the summer when the average temperature rose by 2°C, and the temperature would rise. Such changes in weather can lead to changes in clothing behavior, i.e., increased frequency of sweating and changing clothes, resulting in an increase in the amount of laundry and an increase in the number of laundry washes.

These changes in laundry habits have resulted in increased demand related to the Fabric & Home Care business and opportunities for increased sales in this business. The fabric and home care market, which includes laundry products in Japan, grew 3.3% in 2021 compared to the previous year due to changes in laundry habits and is expected to continue growing. We expect this growth to continue for some time in the future.

Kao's domestic higene and living care sales in 2021 were 366,600 million JPY. We expect a 3.3% (12,097,800,000 JPY) increase in this sales due to changes in laundry habits.

366,600,000,000 JPY × 3.3% = 12,097,800,000 JPY

Cost to realize opportunity

30,600,000,000

Strategy to realize opportunity and explanation of cost calculation

Kao's higene and living care business, which accounted for 35.0% of Kao's remuneration in 2021, is comprised of products closely linked to the daily lives of consumers, such as laundry products (laundry detergents, finishing agents, and

bleaches). In Japan, Kao's main market, laundry is usually dried outdoors on clear days and indoors on rainy days. The fabric and home care market, which includes laundry products in Japan, grew 3.3% in 2021 compared to the previous year and is expected to continue growing.
Kao conducted a climate change scenario analysis in 2021 to investigate future changes in weather and the potential for changes in weather to the market for laundry products. The results of the analysis showed that the weather in Japan would not change in the number of sunny days in the summer when the average temperature rose by 2°C, and the temperature would rise. Such changes in weather can lead to changes in clothing behavior, i.e., increased frequency of sweating and changing clothes, resulting in an increase in the amount of laundry and an increase in the number of laundry washes.
Japan's population peaked in 2004 and has declined every year since then until 2020, and is expected to continue declining in the future. As a result, we believe that the reason for the 3.3% growth in the fabric and home care market, including laundry products in Japan in 2021 was not due to population growth, but due to changes in laundry habits. The change in laundry habit expected by scenario-analysis, i.e., the increased number of washes, results in the "opportunity" of Product and service laundry detergent, which can be washed in a short period of time.

Like the 2009 Attack NEO and the 2019 Attack ZERO, Kao decided to strengthen R&D to increase the number of "one rinse" detergents that can be washed in a short period of time, and to increase production capacity.
In 2021, we spent 30.6 billion JPY on research and development in the higene and living Care business and on expanding manufacturing facilities.

Comment

Identifier
Opp3

Where in the value chain does the opportunity occur?
Upstream

Opportunity type
Markets

Primary climate-related opportunity driver
Access to new markets

Primary potential financial impact
Increased access to capital

Company-specific description
ESG investment is drawing attention worldwide. Decarbonization is an urgent issue in particular, and it is hoped that active investment will be made in companies that are

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

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

1,050,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

ESG investment is drawing attention in the world. It is hoped that efforts to reduce carbon emissions will lead to the decarbonization of society as a whole. Kao needs to raise funds from the market in order to increase sales, and the reduction of procurement costs is an issue. In 2019, Kao established the ESG Strategy "Kirei Lifestyle Plan" and decided that the entire company (company-wide) would take action to reduce carbon emissions.
In 2021, as a result of decarbonization activities, Kao's Scope1+2 was reduced by 20% and its LC-LO2 was reduced by 4%. Kao also installed solar power generation facilities.

If the reputation is enhanced through such activities, it is expected that in the future Kao will be able to set an interest rate of 0.1%, which is 0.3% lower than the average interest rate of the bonds in the world of 0.4%, assuming a total of 50 billion JPY debentures (maturity date of 7 years).
In doing so, Kao's funding costs will be reduced by 1,050 million JPY. This is a significant strategic opportunity..
550 billion JPY × 0.3 %/Year × 7 year=1,050 million JPY

Cost to realize opportunity

4,391,000,000

Strategy to realize opportunity and explanation of cost calculation

ESG investment is drawing attention in the world. It is hoped that efforts to reduce carbon emissions will lead to the decarbonization of society as a whole. Kao needs to raise funds from the market in order to increase sales, and the reduction of procurement costs is an issue. Kao decided to strengthen its ESG activities, and in 2019, established the ESG Strategy "Kirei Lifestyle Plan" and decided to take action for decarbonization throughout the company (company-wide).
In 2021, as a result of decarbonization activities, Kao's Scope1+2 was reduced by 20% and its LC-LO2 was reduced by 4%. Kao also installed solar power generation facilities in four locations.
In 2021, Kao invested 1,416 million JPY to reduce Scope1+2 emissions and 2,976 million JPY to reduce Scope3 emissions, for a total of 4,391 million JPY, in response to company-wide efforts to decarbonization.
1,415 million JPY (Scope1+2 reductions) + 2,976 million JPY (Scope3 reductions) = 4,391 million JPY

Comment

C3. Business Strategy

C3.1

(C3.1) Does your organization’s strategy include a transition plan that aligns with a 1.5°C world?

Row 1

Transition plan

Yes, we have a transition plan which aligns with a 1.5°C world

Publicly available transition plan

Yes

Mechanism by which feedback is collected from shareholders on your transition plan

We have a different feedback mechanism in place

Description of feedback mechanism

Kao's IR department regularly engages with institutional investors. Of these, the ESG Managing Committee's secretariat participates in engagements with climate change-related themes to collect feedback from shareholders. The information collected is used as one of the input information to improve the migration plan.

Frequency of feedback collection

More frequently than annually

Attach any relevant documents which detail your transition plan (optional)

sustainability2022-e-all_light4.pdf P95-96

sustainability2022-e-all_light4.pdf

C3.2

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

	Use of climate-related scenario analysis to inform strategy
Row 1	Yes, qualitative and quantitative

C3.2a

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

Climate-related scenario	Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices
Transition scenarios IEA NZE 2050	Company-wide		Kao is aiming for sales of 2.5 trillion yen in its management strategy of 2030. Therefore, using sales as a parameter, the carbon tax levied on SCOPE1 + 2 emissions in 2030 was selected as an analytical choice on the assumption that SCOPE1 + 2 emissions will increase according to sales. The 2030 carbon tax for Advanced economies under the IEA NZE 2050 is 130 USD / t-CO2. SCOPE1 + 2 emissions in 2030 will increase 1.67 times compared to 2017 without any reduction activities. It will be a carbon tax burden of about 28.8 billion yen / year. It is necessary to reduce this carbon tax burden. Therefore, Kao set a goal of reducing SCOPE1 + 2

			emissions by 55% in 2030, and ICP price of 18,500 yen / t-CO2, which is equivalent to the carbon tax of 2035, was set. As a result, the carbon tax burden when the reduction target for 2030 is achieved can be suppressed to about 7.8 billion yen / year.
Physical climate scenarios RCP 8.5	Company-wide		Kao is aiming for sales of 2.5 trillion yen in its management strategy of 2030. The temperature rise was used as a parameter, and the yield of palms whose temperature rises in the palm growing area was used as an analytical choice. From the peer-reviewed published literature, Kao confirmed that for every 1 ° C increase in temperature in 2030, palm yields would decrease by 10%. Kao relies heavily on palm oil, with businesses such as Hygiene & Living Care and chemicals accounting for 81% of sales. The impact of climate change on palm growth is one of Kao's risks. Kao needs to quantitatively understand the impact of climate change on palm growth. Therefore, Kao investigated the effects of climate change on palm growth in peer-reviewed public papers. As a result, it was confirmed that there is a risk that the yield of palm will decrease by 10% for every 1 ° C increase in temperature in Malaysia, which is one of the palm producing areas.

C3.2b

(C3.2b) Provide details of the focal questions your organization seeks to address by using climate-related scenario analysis, and summarize the results with respect to these questions.

Row 1

Focal questions

Palm oil supply problem

Products using palm oil are induced by chemicals such as surfactants and become raw materials for laundry detergents and body detergents, which are necessary for the survival of Kao's business. Kao's palm oil-related hygiene & living business and chemical business account for 81% of sales, so palm oil supply is essential for business continuity. Kao confirmed that while the Asian population is projected to grow by 5% in 2030, increasing palm oil production carries the risk of increasing GHG emmisions.

Therefore, the supply problem of palm oil is focal question.
Demand for palm derivatives will increase as the population grows. However, palms are produced only in the tropics. Furthermore, the supply may decrease due to the rise in temperature. Therefore, it is necessary to secure the necessary palm derivatives even if the temperature rises.

Results of the climate-related scenario analysis with respect to the focal questions

The scenario analysis showed that in Malaysia and Indonesia, where Kao procures more than 90% of its palm oil, the areas suitable for palm oil cultivation will decrease as the temperature rises. Further in Malaysia, where Kao procures 50% of its palm oil, a 1 degree Celsius rise in temperature results in an approximately 10% decrease in yield. Therefore, Kao has adopted the following two activities to not increase and reduce consumption of palm oil.
- Develop products with equivalent performance with fewer palm derivatives through efficient formulation design
- Development of alternative raw material manufacturing method with equivalent performance of palm derivatives from resources different from palm such as algae and CO2

C3.3

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

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	Risks and opportunities: The scenario analyses conducted by Kao in 2018 - 2021 for 2030 show that: Consumers of Kao's products tend to demand low-carbon products and other ethical products, and demand for summer products increases due to the prolonged summer season due to rising temperatures. Accordingly, it is part of Kao's growth strategy to strengthen ethical products and products for which demand is rising in the summer. Strategy: An important strategy in the short-, medium-and long-term as demand for ethical consumption is rising, summer temperatures are already apparent, and these trends are expected to continue in the future. This is clearly stated in Kao's "Kirei Lifestyle Plan" ESG strategies as items that Kao must realize in order to realize Kirei Lifestyle of consumers. [The most important case study of strategic decision-

		making] Due to the continued temperature increase, in Japan, Kao's core market, summer temperatures generally exceeded 30℃. As a result, demand for products that enable people to live without worrying about the smell of their perspiration and to live comfortably even at high temperatures has increased, and it has become necessary to develop products that meet this demand. In our principal areas of business, the Fablic & home Care segment, we made the following key strategic decisions to respond to these consumer demands: "Humming", the mainstay brand of a fabric softener, should be equipped with (i) measures to combat sweat odors and (ii) technology to feel cool by wearing clothes, the "Cool Feeling Technology." As a result, in 2021, "Humming", which is marketed in Japan, marketed 100% of products incorporating either of these technologies. As a result, sales in the Fablic & home Care segment in Japan increased 0.3%.
Supply chain and/or value chain	Yes	Risks and Opportunities: Forests that absorb carbon dioxide worldwide have greatly decreased, and about 20% of GHG emissions are due to deforestation. Malaysia and Indonesia are the countries in which the area of forests has greatly decreased. One of the reasons for this is that they cut down tropical rainforests in order to expand their palm plantations. Stop of deforestation related to palm plantations in Malaysia and Indonesia is an initiative that does not increase GHG emissions. Kao procures a large amount of palm oil. Kao also aims to increase sales to JPY2.5 trillion in 2030 (more than 1.5 times the current level). To achieve this goal, Kao needs to increase its procurement of palm oil, and it is a very important risk and opportunity for palm plantations to grow sustainably without any new deforestation, that is, to increase the efficiency of Palm plantations. Strategy: Increasing the productivity of palm plantations in Malaysia and Indonesia, the major suppliers of palm oil, is an important strategy for Kao to procure palm oil. Under this strategy, Kao has set a goal of ensuring traceability to palm plantations by 2025 and is working with suppliers and others. [The most important case study of strategic decision-making] Kao procures palm kernel oil from Malaysia and Indonesia,

		and recognizes that it is important for palm plantations in both countries to increase productivity without new deforestation. Small-scale palm plantations, which account for about 40% of palm fruit production in Indonesia in particular, are faced with major social problems such as low productivity, poor working conditions, and poor living conditions, and urgent solutions are required. Kao made the following major strategic decisions: Kao, together with two Indonesian companies , decided to work together to help resolve a variety of issues, including improving the productivity of small-scale palm plantations. In October 2020, the three companies jointly announced that by 2030, they would provide 5000 small-scale palm plantations with SMILE (Smallholder Inclusion for better Livelihood & Empowerment) programs aimed at raising productivity and supporting them in obtaining RSPO certification.
Investment in R&D	Yes	Risks and Opportunities: Demand for products that contribute to sustainable development from consumers and industry is increasing in order to realize SDGs, including climate change. As a result, expectations for Kao's innovation, which places the utmost importance on "essential research," which approaches the essence of things, are increasing year by year. Kao recognizes this as an important growth opportunity. Kao has set up KPIs for 19 key initiatives in the ESG Strategic KLP or "Kirei Lifestyle Plan". Major themes include decarbonization, water conservation, and zero waste, as well as improvement of QOL and perpass-driven brands that encourage behavioral changes in consumers. Strategy: Our R&D strategy is to drive business growth strongly through the achievement of KLP by accelerating innovation, including climate change resolution. Kao's K2025 Medium-Term Management Plan, which runs through 2025, includes becoming a company that is indispensable to a sustainable society, and becoming stronger by investing. [The most important case study of strategic decision-making] As a result of climate change scenario analysis, Kao confirmed that the supply of plastics used in essential containers and packaging for Kao products is one of the important risks and opportunities during the transition period to a net-zero society in the future. The challenge for Kao is to quickly build a recycling-oriented economy, including

		plastic packaging, ahead of society. Recognizing the need, in September 2019 Kao announced to the public that it would approach both reduction innovation to reduce Fossil based plastics and recycling innovation to recycle used plastics. In 2020, Kao formulated the K25 medium-term group management plan. These policies (objectives) include "Positive Recycling" (imagining a new business through reuse) as key achievements. Kao's R&D Division established the Recycling Science Research Center in 2020, which was advised and approved by the Executive Committee, chaired by the CEO. Kao made a major strategic decision to create the center. The center develops containers that use Recycled plastics, and researches and develops social systems that efficiently collect and recycle used plastic containers and packaging. In 2021, nine development projects to increase the use of recycled plastics were promoted as external stakeholders.
Operations	Yes	Risks and Opportunities: Since October 2018, when IPCC issued its 1.5°C Special Report, global companies have been accelerating their efforts to raise their GHG reduction targets to 1.5°C levels. While there is a risk that Kao will not be proactive in addressing climate change unless we take advantage of this trend, we expect that setting more aggressive targets will lead to opportunities and be recognized as a leading company in ESG activities. Strategy: Kao formulated and announced a new medium-to long-term strategy on climate change, which calls for zero carbon by 2040 and carbon-negative by 2050. Kao clarifies this strategy in 2021KLP Progress Report. [The most important case study of strategic decision-making] While the world was accelerating the move to raise the reduction target to 1.5℃, Kao had only a 2℃ reduction target, which was behind the world trend. Kao's task was to set a target of 1.5℃ and a net zero target (if possible, a more aggressive target). Kao's ESG Managing Committee Secretariat established a new goal of decarbonization. The goals were discussed and approved by the ESG Committee, which is chaired by the CEO, after deliberation at the ESG Promotion Council. These include "Aiming for zero carbon by 2040 and carbon-negative by 2050," "Reducing carbon emissions by 55% (Scope1+2) by 2030," and achieving RE100 by 2030. At the same time, the ESG Managing

		Committee also approved new technological developments to convert carbon dioxide into raw materials to reduce Scope1+2 emissions. These are important strategic decisions. Based on this strategy, Kao's previous mid-term plans and procedures to achieve the targets are revisited within Kao.

C3.4

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

	Financial planning elements that have been influenced	Description of influence
Row 1	Direct costs Capital expenditures	Risks and Opportunities: Since October 2018, when IPCC issued its 1.5°C Special Report, global companies have been accelerating their efforts to raise their GHG reduction targets to 1.5°C levels. While there is a risk that Kao will not be proactive in addressing climate change unless we take advantage of this trend, we expect that setting more aggressive targets will lead to opportunities and be recognized as a leading company in ESG activities. Strategy: Kao formulated and announced a new medium-to long-term strategy on climate change, which calls for zero carbon by 2040 and carbon-negative by 2050. Kao clarifies this strategy in 2021KLP Progress Report. [The most important case study of strategic decision-making] While the world was accelerating the move to raise the reduction target to 1.5℃, Kao had only a 2℃ reduction target, which was behind the world trend. Kao's task was to set a target of 1.5℃ and a net zero target (if possible, a more aggressive target). Kao's ESG Committee Secretariat established a new goal of decarbonization. The goals were discussed and approved by the ESG Committee, which is chaired by the CEO, after deliberation at the ESG Promotion Council. These include "Aiming for zero carbon by 2040 and carbon-negative by 2050," "Reducing carbon emissions by 55% (Scope1+2) by 2030," and achieving RE100 by 2030. At the same time, the ESG Committee also approved new technological developments to convert carbon dioxide into raw materials to reduce Scope1+2 emissions. These are important strategic decisions. Based on this strategy, Kao's previous mid-term plans and procedures to achieve the targets are revisited within Kao. [Case Study]

		"Expansion of Renewable Power Generation Facilities" is cited as a capital investment plan for capital expenditure and climate-related risks and opportunities that affected direct cost plans. The case studies are as follows. [Background and Issues] In Japan, policy targets for the improvement of the ratio of renewable energy sources have been set, and policy packages for the expansion of the renewable energy market are being promoted. As part of these efforts, measures are being taken to reduce not only the cost of solar panels but also the cost of construction work. Therefore, it is expected that investment in renewable energy generation facilities and unit price of purchased renewable energy will decrease in the future. On the other hand, in Japan, as a means of purchasing renewable energy power, "non-fossil certificates" are stable from the viewpoint of supply volume, but they are unparalleled expensive in the world at 1.2 JPY/kWh. For this reason, Kao must thoroughly investigate the introduction of renewable energy facilities and investigate the suppliers of renewable energy in accordance with Kao's basic policy of "expanding the procurement of renewable energy while meeting Kao's criteria for equipment installation." [Actions/Implementation Examples] Kao has declared 100% reuse of energy (RE100) in order to encourage more suppliers to make suggestions in order to drive the expansion of domestic demand for renewable energy, and has been promoting efforts from two perspectives: introduction of renewable energy power generation facilities and procurement of renewable energy. Kao has been investigating projects that can be installed within the team in charge of energy conservation in the SCM division, which has operated our plant and logistics for the past. The actual implementation plan and budget are reviewed and reflected in the capital expenditure plan for the following year. Kao makes investment decisions based on rigorous business feasibility assessments, taking into account Internal Carbon Pricing when making actual capital expenditures. In 2020, Kao started operation of four new solar power plants, including Sumida Office in Tokyo and Pilipinas Kao Inc in the Philippines. In addition to the 1,600 MW photovoltaic power generation facilities at the Tochigi Plant, the Kao Group's renewable power plants generated 4,597 MW of electricity in 2020 (up 8% from 2019). For the case where the direct cost of renewable energy procurement is increased, the facility and quantity to be introduced are planned in the medium term, and the increment of the cost is incorporated into the annual direct cost plan. In actual procurement, the Purchasing Department strategically negotiates with the power supply supplier to determine the validity of the price. In 2020, four plants in China (Kao Commercial (Shanghai) Co., Ltd., Kao Chemical Corporation Shanghai, Kao (Hefei) Co., Ltd., and Kao Huludao Casting Materials Co., Ltd.) began procuring renewable electricity.

		[Results] Reflecting it in the capital expenditure plan (capital investment plan) has led to the realization of planned and efficient capital investment, and the installation of the renewable energy power generation facility is proceeding as planned. The introduction of renewable energy is also progressing systematically by incorporating the cost increase into the annual direct cost plan. We will continue to work to increase the use of renewable electricity based on a rigorous business feasibility assessment, while giving consideration to the balance between capital expenditures and increases in direct costs and sales and profits.

C3.5

(C3.5) In your organization's financial accounting, do you identify spending/revenue that is aligned with your organization's transition to a 1.5°C world?

No, but we plan to in the next two years

C4. Targets and performance

C4.1

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

Absolute target

C4.1a

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

Target reference number

Abs 1

Year target was set

2018

Target coverage

Company-wide

Scope(s)

Scope 1

Scope 2

Scope 2 accounting method

Market-based

Scope 3 category(ies)

Base year

2017

Base year Scope 1 emissions covered by target (metric tons CO2e)

653,145

Base year Scope 2 emissions covered by target (metric tons CO2e)

404,968

Base year Scope 3 emissions covered by target (metric tons CO2e)

Total base year emissions covered by target in all selected Scopes (metric tons CO2e)

1,058,113

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1

62

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2

38

Base year Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

100

Target year

2030

Targeted reduction from base year (%)

55

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]

476,150.85

Scope 1 emissions in reporting year covered by target (metric tons CO2e)

604,624

Scope 2 emissions in reporting year covered by target (metric tons CO2e)

241,490

Scope 3 emissions in reporting year covered by target (metric tons CO2e)

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)

846,114

% of target achieved relative to base year [auto-calculated]

36.4283141094

Target status in reporting year

Underway

Is this a science-based target?

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

Target ambition

1.5°C aligned

Please explain target coverage and identify any exclusions

This target covers all of company wide.
There is no exclusions.

Plan for achieving target, and progress made to the end of the reporting year

Scope1: We have set a target of reducing energy consumption by 1% every year at all Kao Group bases, and are promoting activities at each base. Boiler, co-generation system etc. are being updated to BPT (Best Practice Technologies) equipment. Optimal control of multiple boilers is being promoted for efficient operation in response to fluctuating demand. We took measures such as finding wasteful energy and reducing it to the minimum necessary amount, and effectively using unused energy for other processes. With the aim of improving the efficiency of steam utilization, we are continuously strengthening the maintenance of steam traps and improving the amount of steam recovered. We are also actively promoting on-site improvement activities to optimize energy consumption, such as lowering the set temperature that keeps the tank warm and shortening the operating time.
Kao introduced an internal carbon pricing system in 2006 to curb CO2 emissions (scope 1 + 2) and has been operating it for 14 years. Last year, Kao updated its 2030 CO2 emission reduction target (Scope 1 + 2) from a 22% reduction to a 55% reduction. In order to achieve this target, the equipment to be introduced in the future must be equipment that emits as little CO2 as possible, otherwise the reduction target cannot be achieved and there is a risk of becoming a stranded asset. Therefore, Kao will raise the in-house carbon price from ¥ 3,500 / ton-CO2 to ¥ 18,500 / ton-CO2.
Scope2: We are proceeding with a plan to increase the ratio of renewable energy consumption to 100% by 2030. In 2021, in addition to the use of conventional non-fossil certificates, the newly adopted corporate PPA will be used at the Kao Headquarters (Kayabacho Office) for purchased electricity, and the Kao Group's largest solar power generation facility for private consumption will be used. We have promoted the conversion of electric power to renewable energy, such as the introduction of electricity

to the Sakata Plant (total panel power generation capacity of 2,845 kW). The Kao Group's renewable energy ratio of electricity used was 38% in 2021, and as of the end of 2021, there were a total of 17 installation bases for solar power generation facilities for private consumption. In addition, 100% renewable energy consumption has been achieved at all logistics bases (55 locations) in Japan, the Sumida Plant (including the Tokyo Plant), and the Sakata Plant.

List the emissions reduction initiatives which contributed most to achieving this target

Target reference number

Abs 2

Year target was set

2018

Target coverage

Company-wide

Scope(s)

Scope 1
Scope 2
Scope 3

Scope 2 accounting method

Market-based

Scope 3 category(ies)

Category 1: Purchased goods and services
Category 4: Upstream transportation and distribution
Category 11: Use of sold products
Category 12: End-of-life treatment of sold products

Base year

2017

Base year Scope 1 emissions covered by target (metric tons CO2e)

653,145

Base year Scope 2 emissions covered by target (metric tons CO2e)

404,968

Base year Scope 3 emissions covered by target (metric tons CO2e)

10,851,000

Total base year emissions covered by target in all selected Scopes (metric tons CO2e)

11,909,113

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1

5.5

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2

3.4

Base year Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)

91.1

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

95.42

Target year

2030

Targeted reduction from base year (%)

22

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]

9,289,108.14

Scope 1 emissions in reporting year covered by target (metric tons CO2e)

604,624

Scope 2 emissions in reporting year covered by target (metric tons CO2e)

241,490

Scope 3 emissions in reporting year covered by target (metric tons CO2e)

10,552,000

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)

11,398,114

% of target achieved relative to base year [auto-calculated]

19.5037424473

Target status in reporting year

Underway

Is this a science-based target?

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

Target ambition

1.5°C aligned

Please explain target coverage and identify any exclusions

This target covers all of company wide.
There is no exclusions.

Plan for achieving target, and progress made to the end of the reporting year

Scope1,2: Kao's progress are the same as Abs1.
Scope-3: Kao evaluates CO2 emissions across the entire product life cycle. We are focusing on these categories, with Category 1 accounting for 37% and Category 11 accounting for 41%.
In Category 1, Kao have engaged with suppliers to reduce carbon footprint of our raw materials. 89% of our supplier has started actions in 2021.
In Category 11 , Kao sells products with low CO2 emmision in use stage. We are developing low carbon products like as water-saving laundry detergent, dishwashing detergent, shampoo and body cleaner etc. Kao launched no-water shampoo in 2021.

List the emissions reduction initiatives which contributed most to achieving this target

C4.2

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

Net-zero target(s)

C4.2c

(C4.2c) Provide details of your net-zero target(s).

Target reference number

NZ1

Target coverage

Company-wide

Absolute/intensity emission target(s) linked to this net-zero target

Abs1
Abs2

Target year for achieving net zero

2040

Is this a science-based target?

Yes, we consider this a science-based target, and we have committed to seek validation of this target by the Science Based Targets initiative in the next 2 years

Please explain target coverage and identify any exclusions

This target covers scope-1+2+3. This means Kao evaluates CO2 emissions across the entire product life cycle.
Kao focuses on the categories of 1, 4, 11 and 12 related to site activities to save energy and reduce waste materials, as well as on the product lifecycle.

Do you intend to neutralize any unabated emissions with permanent carbon removals at the target year?

Unsure

Planned milestones and/or near-term investments for neutralization at target year

Planned actions to mitigate emissions beyond your value chain (optional)

- By 2030, Kao will have reduced Scope 1+2 CO2 emissions (absolute value) by 55% (taking 2017 as the base year)
In line with the SBTi 1.5°C target, Kao has increased the rate of reduction, which was originally set in 2019 (as one of the mid- to long-term decarbonization goals in the Kirei Lifestyle Plan ESG strategy), by 22% (taking 2017 as the base year) in Scope 1+2 CO2 emissions (absolute value).
By utilizing the internal carbon pricing system that was adopted in 2006, Kao is promoting the use of equipment that has low CO2 emissions, and in the use of renewable energy.
- By 2030, 100% of the electricity used will be sourced from renewable energy
Kao is aiming to join the RE100 initiative, and will continue to use renewable energy in its business practices with the adoption of photovoltaic electricity generation equipment and the purchase of electricity generated from renewable energy.
- By 2030, Kao will have reduced CO2 emissions (absolute value) throughout the product lifecycle by 22% (taking 2017 as the base year)*6Kao will continue to implement the mid- to long-term decarbonization targets outlined in 2019 in the Kirei Lifestyle Plan ESG strategy.
Kao will promote reduction in raw material usage, use of natural raw materials, development of water-saving products, reduction in plastic packaging usage, and use of recycled plastic.

C4.3

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

Yes

C4.3a

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

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	2	
To be implemented*	73	3,911
Implementation commenced*	34	214
Implemented*	198	173,788
Not to be implemented	10	

C4.3b

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

Initiative category & Initiative type

Energy efficiency in buildings
Lighting

Estimated annual CO2e savings (metric tonnes CO2e)

1,572

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

71,800,000

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

42,000,000

Payback period

4-10 years

Estimated lifetime of the initiative

3-5 years

Comment

Initiative category & Initiative type

Low-carbon energy generation

Solar PV

Estimated annual CO2e savings (metric tonnes CO2e)

2,873

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

39,000,000

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

461,000,000

Payback period

4-10 years

Estimated lifetime of the initiative

Ongoing

Comment

Initiative category & Initiative type

Low-carbon energy consumption

Low-carbon electricity mix

Estimated annual CO2e savings (metric tonnes CO2e)

165,193

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

0

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

0

Payback period

No payback

Estimated lifetime of the initiative

Ongoing

Comment

Initiative category & Initiative type

Energy efficiency in production processes
Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

4,149

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 1
Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

120,000,000

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

242,000,000

Payback period

1-3 years

Estimated lifetime of the initiative

1-2 years

Comment

C4.3c

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

Method	Comment
Compliance with regulatory requirements/standards	We promote the introduction of methods with a lower CO2 reduction cost to achieve the reduction amounts required by law. We have reviewed the effectiveness of methods with a high-reduction potential by introducing them on a trial basis.

Dedicated budget for energy efficiency	We promote the introduction of methods with a lower CO2 reduction cost to achieve the reduction amounts required by law. We have reviewed the effectiveness of methods with a high-reduction potential by introducing them on a trial basis.
Dedicated budget for low-carbon product R&D	At the time an opportunity is located, we estimate the potential reduction amount with regard to customers in the product development stage, confirm with customers whether the reduction amount is attractive to them, and start development.
Dedicated budget for other emissions reduction activities	We promote the introduction of methods with a lower CO2 reduction cost. We have reviewed the effectiveness of methods with a high-reduction potential by introducing them on a trial basis.
Partnering with governments on technology development	When we estimate CO2 reduction costs in preparing budgets such as the energy-conserving investment and the low-carbon investment, we also include public assistance such as available subsidies.
Other	The methodologies mentioned above are all applicable to either Scope 1, 2, or 3, targeting the medium-term objective to reduce LC-CO2 by 22 percent by 2030, 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?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products.

Level of aggregation

Product or service

Taxonomy used to classify product(s) or service(s) as low-carbon

The IEA Energy Technology Perspectives Clean Energy Technology Guide

Type of product(s) or service(s)

Other

Other, please specify

Laundry detergent

Description of product(s) or service(s)

Rinsing in the washing machine is usually done twice, but we sell laundry detergents that can achieve one rinse. By reducing the number of rinses to one, the amount of electricity used by the washing machine and the amount of water used are reduced, which is effective in reducing CO2.

Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

Yes

Methodology used to calculate avoided emissions

Evaluating the carbon-reducing impacts of ICT

Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Use stage

Functional unit used

CO2 emissions per washing machine one time use

Reference product/service or baseline scenario used

Baseline product is the case of laundry detergent that are needed to be rinsed twice using a vertical washing machine.
This baseline need laudrydetergent 41.8g, electrical power 53.2WH and water 104 leter.

Life cycle stage(s) covered for the reference product/service or baseline scenario

Cradle-to-gate

Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

0.068

Explain your calculation of avoided emissions, including any assumptions

Condition of laundry detergent that are rinsed once using a washing machine is as below.
Concentrated type laundry detergent 16.8g
Power consumption 45.1WH
Uses 96L of water
Concentrated laundry detergent 0.138kg CO2 per one time use
Baseline product base unit 0.206kg CO2 per one time use
0.206kg - 0.138kg = 0.068 kg CO2 per one time use

Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

4.65

C5. Emissions methodology

C5.1

(C5.1) Is this your first year of reporting emissions data to CDP?

No

C5.1a

(C5.1a) Has your organization undergone any structural changes in the reporting year, or are any previous structural changes being accounted for in this disclosure of emissions data?

Row 1

Has there been a structural change?

No

C5.1b

(C5.1b) Has your emissions accounting methodology, boundary, and/or reporting year definition changed in the reporting year?

	Change(s) in methodology, boundary, and/or reporting year definition?
Row 1	No

C5.2

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

Scope 1

Base year start

January 1, 2017

Base year end

December 31, 2017

Base year emissions (metric tons CO2e)

653,145

Comment

Scope 2 (location-based)

Base year start

January 1, 2017

Base year end

December 31, 2017

Base year emissions (metric tons CO2e)

447,267

Comment

Scope 2 (market-based)

Base year start

January 1, 2017

Base year end

December 31, 2017

Base year emissions (metric tons CO2e)

404,968

Comment

Scope 3 category 1: Purchased goods and services

Base year start

January 1, 2017

Base year end

December 31, 2017

Base year emissions (metric tons CO2e)

4,496,000

Comment

Scope 3 category 2: Capital goods

Base year start

January 1, 2017

Base year end

December 31, 2017

Base year emissions (metric tons CO2e)

239,000

Comment

Scope 3 category 3: Fuel-and-energy-related activities (not included in Scope 1 or 2)

Base year start

January 1, 2017

Base year end

December 31, 2017

Base year emissions (metric tons CO2e)

29,000

Comment

Scope 3 category 4: Upstream transportation and distribution

Base year start

January 1, 2017

Base year end

December 31, 2017

Base year emissions (metric tons CO2e)

253,000

Comment

Scope 3 category 5: Waste generated in operations

Base year start

January 1, 2017

Base year end

December 31, 2017

Base year emissions (metric tons CO2e)

58,000

Comment

Scope 3 category 6: Business travel

Base year start

January 1, 2017

Base year end

December 31, 2017

Base year emissions (metric tons CO2e)

4,000

Comment

Scope 3 category 7: Employee commuting

Base year start

January 1, 2017

Base year end

December 31, 2017

Base year emissions (metric tons CO2e)

18,000

Comment

Scope 3 category 8: Upstream leased assets

Base year start

January 1, 2017

Base year end

December 31, 2017

Base year emissions (metric tons CO2e)

0

Comment

Scope 3 category 9: Downstream transportation and distribution

Base year start

January 1, 2017

Base year end

December 31, 2017

Base year emissions (metric tons CO2e)

97,000

Comment

Scope 3 category 10: Processing of sold products

Base year start

January 1, 2017

Base year end

December 31, 2017

Base year emissions (metric tons CO2e)

119,000

Comment

Scope 3 category 11: Use of sold products

Base year start

January 1, 2017

Base year end

December 31, 2017

Base year emissions (metric tons CO2e)

4,570,000

Comment

Scope 3 category 12: End of life treatment of sold products

Base year start

January 1, 2017

Base year end

December 31, 2017

Base year emissions (metric tons CO2e)

1,415,000

Comment

Scope 3 category 13: Downstream leased assets

Base year start

January 1, 2017

Base year end

December 31, 2017

Base year emissions (metric tons CO2e)

0

Comment

Scope 3 category 14: Franchises

Base year start
January 1, 2017

Base year end
December 31, 2017

Base year emissions (metric tons CO2e)
0

Comment

Scope 3 category 15: Investments

Base year start
January 1, 2017

Base year end
December 31, 2017

Base year emissions (metric tons CO2e)
7,000

Comment

Scope 3: Other (upstream)

Base year start
January 1, 2017

Base year end
December 31, 2017

Base year emissions (metric tons CO2e)
0

Comment

Scope 3: Other (downstream)

Base year start
January 1, 2017

Base year end
December 31, 2017

Base year emissions (metric tons CO2e)
0

Comment

C5.3

(C5.3) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

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

C6. Emissions data

C6.1

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

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)

604,624

Start date

January 1, 2021

End date

December 31, 2021

Comment

Past year 1

Gross global Scope 1 emissions (metric tons CO2e)

616,385

Start date

January 1, 2020

End date

December 31, 2020

Comment

Past year 2

Gross global Scope 1 emissions (metric tons CO2e)

644,039

Start date

January 1, 2019

End date

December 31, 2019

Comment

Past year 3

Gross global Scope 1 emissions (metric tons CO2e)

651,825

Start date

January 1, 2018

End date

December 31, 2018

Comment

C6.2

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

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We are reporting a Scope 2, market-based figure

Comment

C6.3

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

Reporting year

Scope 2, location-based

435,073

Scope 2, market-based (if applicable)

241,490

Start date

January 1, 2021

End date

December 31, 2021

Comment

Past year 1

Scope 2, location-based

443,419

Scope 2, market-based (if applicable)

283,430

Start date

January 1, 2020

End date

December 31, 2020

Comment

Past year 2

Scope 2, location-based

443,636

Scope 2, market-based (if applicable)

320,081

Start date

January 1, 2019

End date

December 31, 2019

Comment

Past year 3

Scope 2, location-based

437,305

Scope 2, market-based (if applicable)

386,102

Start date

January 1, 2018

End date

December 31, 2018

Comment

C6.4

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

Yes

C6.4a

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

Source

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

Relevance of Scope 1 emissions from this source

Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source

No emissions excluded

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

No emissions excluded

Explain why this source is excluded

Data for Factories, Offices, Warehouses and sales car outside Japan had been collected only CO2. Assuming that 7 gases other than CO2 are emitted outside Japan at the same rate as the actual data collected in Japan, the emissions other than CO2 from these emission sources are estimated to be less than 1.0% of the total.

Estimated percentage of total Scope 1+2 emissions this excluded source represents

1

Explain how you estimated the percentage of emissions this excluded source represents

The total emissions of the seven gases in Japan were 2.21 thousand tons. Since the domestic GHG emissions in Japan are 263,000 tons, the ratio of emissions is calculated

as 2.21/263 = 0.84 (%)
0.84% is almost about 1%.

C6.5

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

Purchased goods and services

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

4,228,000

Emissions calculation methodology

Supplier-specific method
Hybrid method
Average data method

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

24

Please explain

We have established a CO2 emission factor for each type of raw material purchased. For raw materials that are purchased in large quantities, we get information directly from our suppliers. Other raw material CO2 emissions is origined from database.

Capital goods

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

264,000

Emissions calculation methodology

Spend-based method

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

0

Please explain

We calculate by multiplying spend-based cost by database-derived emmision factor.

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

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

60,000

Emissions calculation methodology

Spend-based method

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

0

Please explain

We calculate by multiplying spend-based Scope-1 and 2 by database-derived emmision factor.

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

245,000

Emissions calculation methodology

Average spend-based method

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

0

Please explain

We calculate by multiplying average spend-based raw material transportation distance by database-derived emmision factor.

Waste generated in operations

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

68,000

Emissions calculation methodology

Waste-type-specific method

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

0

Please explain

Kao confirms the amount of waste generated for each type of waste.
It is calculated by multiplying each database-derived emmision factor.

Business travel

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

4,000

Emissions calculation methodology

Average data method

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

0

Please explain

We calculate by multiplying average spend-based business trip by database-derived emmision factor.

Employee commuting

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

18,000

Emissions calculation methodology

Average data method

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

0

Please explain

We calculate by multiplying average spend-based employee commuting by database-derived emmision factor.

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

Kao have leased assets. All Kao's leased assets include scope 1 &2. We evaluate that upstream leased assets is zero.
So, we choose Not relevant, explanation provided.

Downstream transportation and distribution

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

108,000

Emissions calculation methodology

Hybrid method
Average spend-based method

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

0

Please explain

We calculate by multiplying average spend-based product transportation distance by database-derived emmision factor.

Processing of sold products

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

131,000

Emissions calculation methodology

Average product method

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

0

Please explain

We calculate by multiplying average processing of sold products by database-derived emmision factor.

Use of sold products

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

4,647,000

Emissions calculation methodology

Methodology for direct use phase emissions, please specify

Kao products use water and electricity at the stage of use. So, we investigate the average value of water and electricity used for each product. Multiply the calculated CO2 emission factor of water and electricity used by the sales quantity.

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

0

Please explain

Kao products use water and electricity at the stage of use. So, we investigate the average value of water and electricity used for each product. Multiply the calculated CO2 emission factor of water and electricity used by the sales quantity.

End of life treatment of sold products

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

1,432,000

Emissions calculation methodology

Waste-type-specific method

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

0

Please explain

Kao products use water and electricity at use stage. Therefore, we investigate the average value of water and electricity used for each product. For each product, we multiply the CO2 emission factor by the sales..

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

Kao doesn't have downstream leased assets.
So, we choose Not relevant, explanation provided.

Franchises

Evaluation status

Not relevant, explanation provided

Please explain

Kao doesn't have any franchises.
So, we choose Not relevant, explanation provided.

Investments

Evaluation status
Not relevant, calculated

Emissions in reporting year (metric tons CO2e)
5,000

Emissions calculation methodology
Investment-specific method

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

Please explain
We calculate by multiplying investment as holding stocks by database-derived emmision factor.

Other (upstream)

Evaluation status
Not evaluated

Please explain
Kao's Scope 3 covers all categories 1 to 15.

Other (downstream)

Evaluation status
Not evaluated

Please explain
Kao's Scope 3 covers all categories 1 to 15.

C6.5a

(C6.5a) Disclose or restate your Scope 3 emissions data for previous years.

Past year 1

Start date
January 1, 2020

End date
December 31, 2020

Scope 3: Purchased goods and services (metric tons CO2e)

4,206,000

Scope 3: Capital goods (metric tons CO2e)

259,000

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

59,000

Scope 3: Upstream transportation and distribution (metric tons CO2e)

249,000

Scope 3: Waste generated in operations (metric tons CO2e)

65,000

Scope 3: Business travel (metric tons CO2e)

4,000

Scope 3: Employee commuting (metric tons CO2e)

18,000

Scope 3: Upstream leased assets (metric tons CO2e)

0

Scope 3: Downstream transportation and distribution (metric tons CO2e)

111,000

Scope 3: Processing of sold products (metric tons CO2e)

116,000

Scope 3: Use of sold products (metric tons CO2e)

4,653,000

Scope 3: End of life treatment of sold products (metric tons CO2e)

1,438,000

Scope 3: Downstream leased assets (metric tons CO2e)

0

Scope 3: Franchises (metric tons CO2e)

0

Scope 3: Investments (metric tons CO2e)

6,000

Scope 3: Other (upstream) (metric tons CO2e)

0

Scope 3: Other (downstream) (metric tons CO2e)

0

Comment

Past year 2

Start date

January 1, 2019

End date

December 31, 2019

Scope 3: Purchased goods and services (metric tons CO2e)

4,295,000

Scope 3: Capital goods (metric tons CO2e)

342,000

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

30,000

Scope 3: Upstream transportation and distribution (metric tons CO2e)

254,000

Scope 3: Waste generated in operations (metric tons CO2e)

56,000

Scope 3: Business travel (metric tons CO2e)

4,000

Scope 3: Employee commuting (metric tons CO2e)

17,000

Scope 3: Upstream leased assets (metric tons CO2e)

0

Scope 3: Downstream transportation and distribution (metric tons CO2e)

107,000

Scope 3: Processing of sold products (metric tons CO2e)

111,000

Scope 3: Use of sold products (metric tons CO2e)

4,510,000

Scope 3: End of life treatment of sold products (metric tons CO2e)

1,432,000

Scope 3: Downstream leased assets (metric tons CO2e)

0

Scope 3: Franchises (metric tons CO2e)

0

Scope 3: Investments (metric tons CO2e)

7,000

Scope 3: Other (upstream) (metric tons CO2e)

0

Scope 3: Other (downstream) (metric tons CO2e)

0

Comment

Past year 3

Start date

January 1, 2018

End date

December 31, 2018

Scope 3: Purchased goods and services (metric tons CO2e)

4,430,000

Scope 3: Capital goods (metric tons CO2e)

269,000

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

27,000

Scope 3: Upstream transportation and distribution (metric tons CO2e)

253,000

Scope 3: Waste generated in operations (metric tons CO2e)

60,000

Scope 3: Business travel (metric tons CO2e)

4,000

Scope 3: Employee commuting (metric tons CO2e)

21,000

Scope 3: Upstream leased assets (metric tons CO2e)

0

Scope 3: Downstream transportation and distribution (metric tons CO2e)

106,000

Scope 3: Processing of sold products (metric tons CO2e)

119,000

Scope 3: Use of sold products (metric tons CO2e)

4,570,000

Scope 3: End of life treatment of sold products (metric tons CO2e)

1,452,000

Scope 3: Downstream leased assets (metric tons CO2e)

0

Scope 3: Franchises (metric tons CO2e)

0

Scope 3: Investments (metric tons CO2e)

8,000

Scope 3: Other (upstream) (metric tons CO2e)

0

Scope 3: Other (downstream) (metric tons CO2e)

0

Comment

C6.7

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

Yes

C6.7a

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

	CO2 emissions from biogenic carbon (metric tons CO2)	Comment
Row 1	37,078.04	

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

5,964

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

846,114

Metric denominator

unit total revenue

Metric denominator: Unit total

1,418,768,000,000

Scope 2 figure used

Market-based

% change from previous year

8.41

Direction of change

Decreased

Reason for change

Sales in 2021 increased 2.67% over the previous year. On the other hand, CO2 emissions decreased by 5.97% from the previous year as a result of numerous reduction activities. We are promoting the introduction of solar photovoltaic power generation systems for on-site power generation at Kao-owned facilities. In 2021, the systems installed at the Sakata Plant, Kawasaki Plant and Kao Chimigraf started generating electricity. The total power generating capacity of these systems was 6,944 MWh in 2021. The generating capacity of individual facilities is shown on the next page. We are also promoting the purchasing of electric power that is generated using renewable energy. Kao Chemicals GmbH, Kao Manufacturing Germany GmbH, Kao Corporation SA's three plants in Spain, Kao Chimigraf, Molton Brown, Kao USA, Kao Corporation's Sakata Plant, Kashima Plant, Sumida Office, Kawasaki Plant, Odawara Office, Toyohashi Plant, Kao Sanitary Products Ehime, Kao Paper Manufacturing Fuji, Kao Logistics, Kao Group Customer Marketing and four plants in China (Kao Corporation Shanghai, Kao Chemical Corporation Shanghai, Kao (Hefei) Co., Ltd. and Kao Huludao Casting Materials Co., Ltd.)* have all converted to purchasing only electric power that has been generated from renewable sources. In addition, Kao Corporation's Wakayama Plant and Tochigi Plant are purchasing electric power generated from renewable sources. Use of this renewable power reduced CO2 emissions by 168 thousand tons.

C7. Emissions breakdowns

C7.1

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

Yes

C7.1a

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

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	602,416	IPCC Fifth Assessment Report (AR5 – 100 year)
CH4	170	IPCC Fifth Assessment Report (AR5 – 100 year)
N2O	749	IPCC Fifth Assessment Report (AR5 – 100 year)
HFCs	1,341	IPCC Fifth Assessment Report (AR5 – 100 year)
PFCs	0	IPCC Fifth Assessment Report (AR5 – 100 year)
SF6	19	IPCC Fifth Assessment Report (AR5 – 100 year)
NF3	0	IPCC Fifth Assessment Report (AR5 – 100 year)

C7.2

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

Country/Region	Scope 1 emissions (metric tons CO2e)
Japan	244,483
Asia Pacific (or JAPA)	264,378
US, Latin America and Caribbean (USLAC)	45,474
Eastern Europe, Middle East, and Africa (EEMEA)	50,289

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	592,343

Office,sales	12,281

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)
Japan	154,429	18,625
Asia Pacific (or JAPA)	236,622	213,036
US, Latin America and Caribbean (USLAC)	20,080	7,668
Europe, the Middle East, Africa and Russia (EMEAR)	23,947	2,161

C7.6

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

By business division

C7.6a

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

Business division	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Production	403,588	230,279
Offices, sales	31,490	11,211

C7.9

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

Decreased

C7.9a

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

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation

Change in renewable energy consumption	37,154	Decreased	4.13	In 2021, emissions of "Change in output" increased from the previous year due to the effect of increased production, but total emissions decreased by 5.97% from the previous year due to the reduction of emissions in "Change in renewable energy consumption" and "Other emissions reduction activities", etc. In 2021, 37,154 (tCO2e) was reduced by promoting emission reduction projects through the introduction of renewable energy. Since the total emissions of Scope 1 and Scope 2 in 2020 were 899,816 (tCO2e), we reached (-37,154/899,816)*100 = -4.13% (In other words, emissions decreased by 4.13% from the previous year).
Other emissions reduction activities	5,935	Decreased	0.66	In 2021, 5,935 (tCO2e) was reduced through energy conservation activities promoted throughout the Kao Group. Since the total emissions of Scope 1 and Scope 2 in 2020 were 899,816 (tCO2e), we reached (-5,935/899,816))*100 = -0.66% (In other words, emissions decreased by 0.66% from the previous year).
Divestment	0	No change	0	
Acquisitions	0	No change	0	
Mergers	0	No change	0	
Change in output	22,658	Increased	2.52	In 2021, production increased by 1.5% compared to the previous year, resulting in an increase of 22,658 (tCO2e). Since the total emissions of Scope 1 and Scope 2 in 2020 were 899,816 (tCO2e), we reached (22,658/899,816)*100 = 2.52% (In other words, emissions increased by 2.52% from the previous year).
Change in methodology	1,079	Decreased	0.12	As a result of the change in the GHG emission coefficient due to a change in the electric power company or the electricity menu, the reduction was 1,079 (tCO2e). Since the total emissions of Scope 1 and Scope 2 in 2020 were

				899,816 (tCO2e), we reached (-1,079/899,816)*100=-0.12% (In other words, emissions decreased by 0.12% from the previous year).
Change in boundary	0	No change	0	
Change in physical operating conditions	0	No change	0	
Unidentified	592	Decreased	0.07	
Other	31,600	Decreased	3.51	This was mainly due to the closure of Kao Chemical Coporation Shanghai and as a result, Kao (Shanghai) Chemical Industries has more than doubled its procuction amount, resulting in a reduction of 31,600 (tCO2e). Since the total emissions of Scope 1 and Scope 2 in 2020 were 899,816 (tCO2e), we reached (-31,600/899,816)*100=-3.51% (In other words, emissions decreased by 3.51% from the previous year).

C7.9b

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

Market-based

C8. Energy

C8.1

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

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

C8.2

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

	Indicate whether your organization undertook this energy-related activity in the reporting year

Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	Yes
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

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

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	0	2,791,318	2,791,318
Consumption of purchased or acquired electricity		1,035,615	1,168,421	2,204,036
Consumption of purchased or acquired steam		0	64,431	64,431
Consumption of self-generated non-fuel renewable energy		6,889		6,889
Total energy consumption		1,042,504	4,024,170	5,066,674

C8.2b

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

	Indicate whether your organization undertakes this fuel application

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

C8.2c

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

Sustainable biomass

Heating value

HHV

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

Other biomass

Heating value

HHV

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

Other renewable fuels (e.g. renewable hydrogen)

Heating value

HHV

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

Coal

Heating value

HHV

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

Oil

Heating value

HHV

Total fuel MWh consumed by the organization

366,598

MWh fuel consumed for self-generation of electricity

21,692

MWh fuel consumed for self-generation of heat

44,912

MWh fuel consumed for self-generation of steam

299,994

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

Gas

Heating value

HHV

Total fuel MWh consumed by the organization

2,424,720

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

280,556

MWh fuel consumed for self-generation of steam

848,312

MWh fuel consumed for self- cogeneration or self-trigeneration

1,294,975

Comment

Other non-renewable fuels (e.g. non-renewable hydrogen)

Heating value

HHV

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

Total fuel

Heating value

HHV

Total fuel MWh consumed by the organization

2,791,318

MWh fuel consumed for self-generation of electricity

21,692

MWh fuel consumed for self-generation of heat

325,468

MWh fuel consumed for self-generation of steam

1,148,306

MWh fuel consumed for self- cogeneration or self-trigeneration

1,294,975

Comment

C8.2d

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

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	291,899	214,762	7,500	6,889
Heat	0	0	0	0
Steam	0	0	0	0
Cooling	0	0	0	0

C8.2g

(C8.2g) Provide a breakdown of your non-fuel energy consumption by country.

Country/area

Japan

Consumption of electricity (MWh)

862,330

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

862,330

Is this consumption excluded from your RE100 commitment?

No

Country/area

United States of America

Consumption of electricity (MWh)

98,817

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

98,817

Is this consumption excluded from your RE100 commitment?

No

Country/area

Mexico

Consumption of electricity (MWh)

27,867

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

27,867

Is this consumption excluded from your RE100 commitment?

No

Country/area

Spain

Consumption of electricity (MWh)

103,806

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

103,806

Is this consumption excluded from your RE100 commitment?

No

Country/area

Germany

Consumption of electricity (MWh)

63,941

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

63,941

Is this consumption excluded from your RE100 commitment?

No

Country/area

United Kingdom of Great Britain and Northern Ireland

Consumption of electricity (MWh)

3,235

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

3,235

Is this consumption excluded from your RE100 commitment?

No

Country/area

China

Consumption of electricity (MWh)

100,419

Consumption of heat, steam, and cooling (MWh)

45,820

Total non-fuel energy consumption (MWh) [Auto-calculated]

146,239

Is this consumption excluded from your RE100 commitment?

No

Country/area

Taiwan, China

Consumption of electricity (MWh)

59,169

Consumption of heat, steam, and cooling (MWh)

18,611

Total non-fuel energy consumption (MWh) [Auto-calculated]

77,780

Is this consumption excluded from your RE100 commitment?

No

Country/area

Philippines

Consumption of electricity (MWh)

218,146

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

218,146

Is this consumption excluded from your RE100 commitment?

No

Country/area

Thailand

Consumption of electricity (MWh)

130,191

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

130,191

Is this consumption excluded from your RE100 commitment?

No

Country/area

Viet Nam

Consumption of electricity (MWh)

4,279

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

4,279

Is this consumption excluded from your RE100 commitment?

No

Country/area

Malaysia

Consumption of electricity (MWh)

142,557

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

142,557

Is this consumption excluded from your RE100 commitment?

No

Country/area

Indonesia

Consumption of electricity (MWh)

386,023

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

386,023

Is this consumption excluded from your RE100 commitment?

No

Country/area

Australia

Consumption of electricity (MWh)

196

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

196

Is this consumption excluded from your RE100 commitment?

No

Country/area

New Zealand

Consumption of electricity (MWh)

42

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

42

Is this consumption excluded from your RE100 commitment?

No

Country/area

Canada

Consumption of electricity (MWh)

943

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

943

Is this consumption excluded from your RE100 commitment?

No

Country/area
Brazil

Consumption of electricity (MWh)
9

Consumption of heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]

9

Is this consumption excluded from your RE100 commitment?
No

Country/area
Italy

Consumption of electricity (MWh)
1,232

Consumption of heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]

1,232

Is this consumption excluded from your RE100 commitment?
No

Country/area
Austria

Consumption of electricity (MWh)
45

Consumption of heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]

45

Is this consumption excluded from your RE100 commitment?
No

Country/area
Belgium

Consumption of electricity (MWh)
65

Consumption of heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
65

Is this consumption excluded from your RE100 commitment?
No

Country/area
Switzerland

Consumption of electricity (MWh)
221

Consumption of heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
221

Is this consumption excluded from your RE100 commitment?
No

Country/area
Czechia

Consumption of electricity (MWh)
58

Consumption of heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]

58

Is this consumption excluded from your RE100 commitment?

No

Country/area

Finland

Consumption of electricity (MWh)

124

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

124

Is this consumption excluded from your RE100 commitment?

No

Country/area

France

Consumption of electricity (MWh)

49

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

49

Is this consumption excluded from your RE100 commitment?

No

Country/area

Netherlands

Consumption of electricity (MWh)

297

Consumption of heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]

297

Is this consumption excluded from your RE100 commitment?
No

Country/area
Norway

Consumption of electricity (MWh)
70

Consumption of heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]

70

Is this consumption excluded from your RE100 commitment?
No

Country/area
Sweden

Consumption of electricity (MWh)
216

Consumption of heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]

216

Is this consumption excluded from your RE100 commitment?
No

Country/area
South Africa

Consumption of electricity (MWh)

254

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

254

Is this consumption excluded from your RE100 commitment?

No

Country/area

Singapore

Consumption of electricity (MWh)

61

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

61

Is this consumption excluded from your RE100 commitment?

No

Country/area

Hong Kong SAR, China

Consumption of electricity (MWh)

1,731

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

1,731

Is this consumption excluded from your RE100 commitment?

No

C8.2h

(C8.2h) Provide details of your organization's renewable electricity purchases in the reporting year by country

Country/area of renewable electricity consumption

Japan

Sourcing method

Default delivered renewable electricity from the grid, supported by energy attribute certificates

Renewable electricity technology type

Renewable electricity mix, please specify

Biomass(66%), Wind (20%), Solar (8%), Hydro (7%)

Renewable electricity consumed via selected sourcing method in the reporting year (MWh)

692,984

Tracking instrument used

Other, please specify

Non-fossil certificate

Total attribute instruments retained for consumption by your organization (MWh)

382,961

Country/area of origin (generation) of the renewable electricity/attribute consumed

Japan

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2,005

Vintage of the renewable energy/attribute (i.e. year of generation)

Before 2018

Brand, label, or certification of the renewable electricity purchase

No brand, label, or certification

Comment

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

KCMK (Kao Customer Marketing) and Kao Logistics in Japan also have purchased electricity with zero CO2 emissions using non-fossil certificates.

Country/area of renewable electricity consumption

Japan

Sourcing method

Unbundled Energy Attribute Certificate (EAC) purchase

Renewable electricity technology type

Solar

Renewable electricity consumed via selected sourcing method in the reporting year (MWh)

50,916

Tracking instrument used

J-Credit

Total attribute instruments retained for consumption by your organization (MWh)

50,916

Country/area of origin (generation) of the renewable electricity/attribute consumed

Japan

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2,012

Vintage of the renewable energy/attribute (i.e. year of generation)

Before 2018

Brand, label, or certification of the renewable electricity purchase

No brand, label, or certification

Comment

Kao Customer Marketing and Kao Logistics in Japan have purchased J-Credit for mainly their rental offices since 2020.

Country/area of renewable electricity consumption

Japan

Sourcing method

Unbundled Energy Attribute Certificate (EAC) purchase

Renewable electricity technology type

Sustainable Biomass

Renewable electricity consumed via selected sourcing method in the reporting year (MWh)

1,635

Tracking instrument used

Other, please specify

Renewable Energy Certificate

Total attribute instruments retained for consumption by your organization (MWh)

1,635

Country/area of origin (generation) of the renewable electricity/attribute consumed

Japan

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2,006

Vintage of the renewable energy/attribute (i.e. year of generation)

Before 2018

Brand, label, or certification of the renewable electricity purchase

No brand, label, or certification

Comment

Arita Training Center in Kao Japan has converted to purchase "Renewable Energy Certificates electricity" since 2020.

Country/area of renewable electricity consumption

China

Sourcing method

Unbundled Energy Attribute Certificate (EAC) purchase

Renewable electricity technology type

Large hydropower (>25 MW)

Renewable electricity consumed via selected sourcing method in the reporting year (MWh)

91,211

Tracking instrument used

I-REC

Total attribute instruments retained for consumption by your organization (MWh)

91,211

Country/area of origin (generation) of the renewable electricity/attribute consumed

China

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2,010

Vintage of the renewable energy/attribute (i.e. year of generation)

Before 2018

Brand, label, or certification of the renewable electricity purchase

No brand, label, or certification

Comment

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

Country/area of renewable electricity consumption

United States of America

Sourcing method

Unbundled Energy Attribute Certificate (EAC) purchase

Renewable electricity technology type

Renewable electricity mix, please specify

Wind (99%), Hydro (<1%)

Renewable electricity consumed via selected sourcing method in the reporting year (MWh)

33,974

Tracking instrument used

US-REC

Total attribute instruments retained for consumption by your organization (MWh)

33,974

Country/area of origin (generation) of the renewable electricity/attribute consumed

United States of America

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2,009

Vintage of the renewable energy/attribute (i.e. year of generation)

Before 2018

Brand, label, or certification of the renewable electricity purchase

Green-e

Comment

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

Country/area of renewable electricity consumption

Germany

Sourcing method

Default delivered renewable electricity from the grid, supported by energy attribute certificates

Renewable electricity technology type

Renewable electricity mix, please specify

Biomass (55%), Wind (24%), Solar (11%), Hydro (4%), Geothermal (4%), Solar thermal (2%)

Renewable electricity consumed via selected sourcing method in the reporting year (MWh)

58,898

Tracking instrument used

GO

Total attribute instruments retained for consumption by your organization (MWh)

58,898

Country/area of origin (generation) of the renewable electricity/attribute consumed

Germany

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

1,990

Vintage of the renewable energy/attribute (i.e. year of generation)

Before 2018

Brand, label, or certification of the renewable electricity purchase

No brand, label, or certification

Comment

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

Country/area of renewable electricity consumption

Spain

Sourcing method

Default delivered renewable electricity from the grid, supported by energy attribute certificates

Renewable electricity technology type

Renewable electricity mix, please specify

Wind (89%), Hydro (3%), Solar (8%)

Renewable electricity consumed via selected sourcing method in the reporting year (MWh)

99,067

Tracking instrument used

GO

Total attribute instruments retained for consumption by your organization (MWh)

99,067

Country/area of origin (generation) of the renewable electricity/attribute consumed

Spain

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

1,990

Vintage of the renewable energy/attribute (i.e. year of generation)

Before 2018

Brand, label, or certification of the renewable electricity purchase

No brand, label, or certification

Comment

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

Country/area of renewable electricity consumption

Spain

Sourcing method

Default delivered renewable electricity from the grid, supported by energy attribute certificates

Renewable electricity technology type

Renewable electricity mix, please specify

Wind (89%), Hydro (3%), Solar (8%)

Renewable electricity consumed via selected sourcing method in the reporting year (MWh)

4,739

Tracking instrument used

GO

Total attribute instruments retained for consumption by your organization (MWh)

4,739

Country/area of origin (generation) of the renewable electricity/attribute consumed

Spain

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2,019

Vintage of the renewable energy/attribute (i.e. year of generation)

2019

Brand, label, or certification of the renewable electricity purchase

No brand, label, or certification

Comment

5 bases of Kao Chimigraf have converted all purchased electricity into renewable energy sources.

Country/area of renewable electricity consumption

United Kingdom of Great Britain and Northern Ireland

Sourcing method

Default delivered renewable electricity from the grid, supported by energy attribute certificates

Renewable electricity technology type

Renewable electricity mix, please specify

Wind (43%), Hydro (57%)

Renewable electricity consumed via selected sourcing method in the reporting year (MWh)

2,191

Tracking instrument used

REGO

Total attribute instruments retained for consumption by your organization (MWh)

2,191

Country/area of origin (generation) of the renewable electricity/attribute consumed

United Kingdom of Great Britain and Northern Ireland

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2,021

Vintage of the renewable energy/attribute (i.e. year of generation)

2021

Brand, label, or certification of the renewable electricity purchase

No brand, label, or certification

Comment

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

C8.2i

(C8.2i) Provide details of your organization's low-carbon heat, steam, and cooling purchases in the reporting year by country.

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

Japan

Sourcing method

Other, please specify

Kao has not get any low-carbon steam yet.

Energy carrier

Heat, steam, and cooling combined

Low-carbon technology type

Other, please specify

Kao has not get any low-carbon steam yet.

Low-carbon heat, steam, or cooling consumed (MWh)

0

Comment

C8.2j

(C8.2j) Provide details of your organization's renewable electricity generation by country in the reporting year.

Country/area of generation

Japan

Renewable electricity technology type

Solar

Facility capacity (MW)

5.97

Total renewable electricity generated by this facility in the reporting year (MWh)

4,797.35

Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were not issued (MWh)

4,797.35

Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were issued and retired (MWh)

0

Renewable electricity sold to the grid in the reporting year (MWh)

81.88

Certificates issued for the renewable electricity that was sold to the grid (MWh)

0

Certificates issued and retired for self-consumption for the renewable electricity that was sold to the grid (MWh)

0

Type of energy attribute certificate

Total self-generation counted towards RE100 target (MWh) [Auto-calculated]

4,797.35

Comment

Country/area of generation

Thailand

Renewable electricity technology type

Solar

Facility capacity (MW)

0.58

Total renewable electricity generated by this facility in the reporting year (MWh)

781.27

Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were not issued (MWh)

781.27

Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were issued and retired (MWh)

0

Renewable electricity sold to the grid in the reporting year (MWh)

0

Certificates issued for the renewable electricity that was sold to the grid (MWh)

0

Certificates issued and retired for self-consumption for the renewable electricity that was sold to the grid (MWh)

0

Type of energy attribute certificate

Total self-generation counted towards RE100 target (MWh) [Auto-calculated]

781.27

Comment

Country/area of generation

China

Renewable electricity technology type

Solar

Facility capacity (MW)

0.3

Total renewable electricity generated by this facility in the reporting year (MWh)

558.13

Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were not issued (MWh)

558.13

Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were issued and retired (MWh)

0

Renewable electricity sold to the grid in the reporting year (MWh)

0

Certificates issued for the renewable electricity that was sold to the grid (MWh)

0

Certificates issued and retired for self-consumption for the renewable electricity that was sold to the grid (MWh)

0

Type of energy attribute certificate

Total self-generation counted towards RE100 target (MWh) [Auto-calculated]

558.13

Comment

Country/area of generation

Taiwan, China

Renewable electricity technology type

Solar

Facility capacity (MW)

0.44

Total renewable electricity generated by this facility in the reporting year (MWh)

529.98

Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were not issued (MWh)

529.98

Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were issued and retired (MWh)

0

Renewable electricity sold to the grid in the reporting year (MWh)

529.98

Certificates issued for the renewable electricity that was sold to the grid (MWh)

0

Certificates issued and retired for self-consumption for the renewable electricity that was sold to the grid (MWh)

0

Type of energy attribute certificate

Total self-generation counted towards RE100 target (MWh) [Auto-calculated]

529.98

Comment

Country/area of generation

Philippines

Renewable electricity technology type

Solar

Facility capacity (MW)

0.26

Total renewable electricity generated by this facility in the reporting year (MWh)

370.15

Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were not issued (MWh)

370.15

Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were issued and retired (MWh)

0

Renewable electricity sold to the grid in the reporting year (MWh)

0

Certificates issued for the renewable electricity that was sold to the grid (MWh)

0

Certificates issued and retired for self-consumption for the renewable electricity that was sold to the grid (MWh)

0

Type of energy attribute certificate

Total self-generation counted towards RE100 target (MWh) [Auto-calculated]

370.15

Comment

Country/area of generation

Malaysia

Renewable electricity technology type

Solar

Facility capacity (MW)

0.14

Total renewable electricity generated by this facility in the reporting year (MWh)

183.63

Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were not issued (MWh)

183.63

Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were issued and retired (MWh)

0

Renewable electricity sold to the grid in the reporting year (MWh)

0

Certificates issued for the renewable electricity that was sold to the grid (MWh)

0

Certificates issued and retired for self-consumption for the renewable electricity that was sold to the grid (MWh)

0

Type of energy attribute certificate

Total self-generation counted towards RE100 target (MWh) [Auto-calculated]

183.63

Comment

Country/area of generation

Spain

Renewable electricity technology type

Solar

Facility capacity (MW)

0.19

Total renewable electricity generated by this facility in the reporting year (MWh)

110.92

Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were not issued (MWh)

110.92

Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were issued and retired (MWh)

0

Renewable electricity sold to the grid in the reporting year (MWh)

0

Certificates issued for the renewable electricity that was sold to the grid (MWh)

0

Certificates issued and retired for self-consumption for the renewable electricity that was sold to the grid (MWh)

0

Type of energy attribute certificate

Total self-generation counted towards RE100 target (MWh) [Auto-calculated]

110.92

Comment

Country/area of generation

United States of America

Renewable electricity technology type

Solar

Facility capacity (MW)

0.15

Total renewable electricity generated by this facility in the reporting year (MWh)

108.42

Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were not issued (MWh)

108.42

Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were issued and retired (MWh)

0

Renewable electricity sold to the grid in the reporting year (MWh)

0

Certificates issued for the renewable electricity that was sold to the grid (MWh)

0

Certificates issued and retired for self-consumption for the renewable electricity that was sold to the grid (MWh)

0

Type of energy attribute certificate

Total self-generation counted towards RE100 target (MWh) [Auto-calculated]

108.42

Comment

Country/area of generation

Austria

Renewable electricity technology type

Solar

Facility capacity (MW)

0.06

Total renewable electricity generated by this facility in the reporting year (MWh)

34.5

Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were not issued (MWh)

34.5

Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were issued and retired (MWh)

0

Renewable electricity sold to the grid in the reporting year (MWh)

0

Certificates issued for the renewable electricity that was sold to the grid (MWh)

0

Certificates issued and retired for self-consumption for the renewable electricity that was sold to the grid (MWh)

0

Type of energy attribute certificate

Total self-generation counted towards RE100 target (MWh) [Auto-calculated]

34.5

Comment

Country/area of generation

Indonesia

Renewable electricity technology type

Solar

Facility capacity (MW)

0.04

Total renewable electricity generated by this facility in the reporting year (MWh)

26.1

Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were not issued (MWh)

26.1

Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were issued and retired (MWh)

0

Renewable electricity sold to the grid in the reporting year (MWh)

0

Certificates issued for the renewable electricity that was sold to the grid (MWh)

0

Certificates issued and retired for self-consumption for the renewable electricity that was sold to the grid (MWh)

0

Type of energy attribute certificate

Total self-generation counted towards RE100 target (MWh) [Auto-calculated]

26.1

Comment

C8.2k

(C8.2k) Describe how your organization's renewable electricity sourcing strategy directly or indirectly contributes to bringing new capacity into the grid in the countries/areas in which you operate.

We believe that we can contribute to the spread of renewable energy power in countries / regions where the introduction of renewable energy power is not yet widespread by actively promoting the introduction based on the power procurement strategy. Especially in Japan, we are contributing to the spread of PPA, which is said to be highly additive, by introducing PPA to the head office as soon as possible and introducing examples.

C8.2l

(C8.2l) In the reporting year, has your organization faced any challenges to sourcing renewable electricity?

	Challenges to sourcing renewable electricity
Row 1	Yes, in specific countries/areas in which we operate

C8.2m

(C8.2m) Provide details of the country-specific challenges to sourcing renewable electricity faced by your organization in the reporting year.

Country/area	Reason(s) why it was challenging to source renewable electricity within selected country/area	Provide additional details of the barriers faced within this country/area
Taiwan, China	Limited supply of renewable electricity in the market	In Taiwan, the supply of renewable electricity cannot keep up with the demand, and the price of renewable energy certificates is soaring.

C9. Additional metrics

C9.1

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

Description

Metric value

Metric numerator

Metric denominator (intensity metric only)

% change from previous year

Direction of change

Please explain

C10. Verification

C10.1

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

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

C10.1a

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

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance
Limited assurance

Attach the statement

KAO2022_KPMG-CDP-verification -inc.forest.pdf

Page/ section reference
KAO2022_KPMG-CDP-verification -inc.forest.pdf P1

Relevant standard
ISAE 3410

Proportion of reported emissions verified (%)
100

C10.1b

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

Scope 2 approach
Scope 2 market-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement

KAO2022_KPMG-CDP-verification -inc.forest.pdf

Page/ section reference
KAO2022_KPMG-CDP-verification -inc.forest.pdf P1

Relevant standard
ISAE 3410

Proportion of reported emissions verified (%)
100

C10.1c

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

Scope 3 category

Scope 3: Purchased goods and services
Scope 3: Upstream transportation and distribution
Scope 3: Use of sold products
Scope 3: End-of-life treatment of sold products

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

KAO2022_KPMG-CDP-verification -inc.forest.pdf

Page/section reference

KAO2022_KPMG-CDP-verification -inc.forest.pdf P1

Relevant standard

ISAE 3410

Proportion of reported emissions verified (%)

100

C10.2

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

Yes

C10.2a

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

KAO_Independent_Assurance_Report_2022.pdf

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C8. Energy	Energy consumption	ISAE3000	KAO_Independent_Assurance_Report_2022.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 - ETS

C11.1b

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

EU ETS

% of Scope 1 emissions covered by the ETS

4.47

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1, 2021

Period end date

December 31, 2021

Allowances allocated

4,937

Allowances purchased

22,094

Verified Scope 1 emissions in metric tons CO2e

27,031

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Facilities we own and operate

Comment

Situation: Olesa site in Kao Corporation, S.A. is subject to EU-ETS. We purchase allowances when our emissions exceed the allowances allocated. The allowances allocated in 2021 was 4,937 tons.
Task: Emissions (scope1) must be reduced steadily by improving production efficiency and energy intensity.
Action: Our main activity is as follows; Steam boiler and chiller renewal, Heat exchangers renewals, Air conditioner renewals, Condensates recovery, Leakages prevention and control, Thermal insulation improvement.
Result: There is no big change from the previous year. Compared to 2020, almost the same in emissions (scope1) (27,018t-->27,031t, 0.05% increase) against the slight decrease in production (64,892t-->64,392t, 0.8% decrease).

Tokyo CaT - ETS

% of Scope 1 emissions covered by the ETS

1.44

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1, 2021

Period end date

December 31, 2021

Allowances allocated

10,490

Allowances purchased

0

Verified Scope 1 emissions in metric tons CO2e

8,692

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Facilities we own and operate

Comment

Situation) Since Sumida site in Kao Japan is equivalent to a large-scale business office designated by the Tokyo Metropolitan Government, there is an obligation of total emission reduction. From 2020, we have shifted to the third reduction plan period (2020-2024, reduction obligation rate: 27%), so allowances allocated will be as follows.
Allowances allocated = Standard emission 14,370(t-CO2) * 0.73 = 10,490(t-CO2)
Task) Sumida site is a complex business establishment with factory, laboratories and offices. Compared to other factories, there are very few mechanical equipment, and there is little room for reduction activities by improving equipment efficiency and devising production activities, so the current situation is that reduction activities are limited to LED lighting, etc.
Action) In order to fulfill our reduction obligations, we have implemented the following reduction activities: LED lighting, Reduction of steam loss, Repair of air leaks, etc.
Result) Compared to the allowances allocated 10,490 tons, emissions were 8,692 tons, which increased by about 4% from the previous year because production, which decreased due to the impact of COVID-19 in 2020, turned to increase in 2021.

C11.1d

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

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

Some Kao sites are already subject to the Emissions Trading System (ETS). Since our policy is to prioritize the reduction, we would purchase emission rights if the amount of emissions exceeded the allocation. Kao is promoting activities to reduce emissions by sharing the Kao Group's energy-saving technologies globally through the Responsible Care Committee, which oversees the activities of each site, and other organizations. We are prioritizing capital investment in factories that consume a large amount of energy, including those that are subject to ETS, and are developing a strategy to implement additional measures to reduce emissions that are being rolled out throughout the company.

・An explanation of how the strategy has been applied with reference to results of actions and timescale of implementation

The activity themes of the Tokyo Metropolitan Government's ETS 3rd Plan period (2020~2024) are the continuation of energy conservation and the promotion of renewable energy use with an eye toward a decarbonized society. At the Sumida Plant in Tokyo, which has introduced ETS, in addition to promoting the use of LEDs that we have been working on so far, in 2020 we actively promoted the renewal of air conditioners. In 2021, we also worked on repairing air leaking equipment and reducing air consumption. In addition, in April 2021, we began introducing renewable energy electricity, reducing CO2 emissions from purchased electricity to zero.

C11.2

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

No

C11.3

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

Yes

C11.3a

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

Objective for implementing an internal carbon price

Drive low-carbon investment

GHG Scope

Scope 1
Scope 2

Application

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

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

3,500

Variance of price(s) used

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

Type of internal carbon price

Implicit price

Impact & implication

Each of Kao’s plants has introduced internal carbon pricing to promote energy-saving investment. Specifically, they calculate the sum of the cost of energy reduced by the introduction of energy-saving equipment and the carbon price of the amount of CO2 reduced as the cost advantage. Our Investment Committee made a resolution on and runs this initiative. We determine whether or not to make a capital investment based on the evaluation of various items. Kao has set an internal carbon price of 3,500 JPY. Kao confirmed that some plants can introduce renewable energy such as solar panels at a carbon price of 3,500 JPY. However, on the other hand, Kao confirmed that it is impossible to introduce equipment to achieve the SBTi 1.5 degC target, and we decided to set a CO2 reduction target on Scope1+2 which follows SBT 1.5degC and to increase the internal carbon price to 18,500 JPY. We will use new internal carbon price from 2021.
One investment item is “number of years for simple recovery of investment.” Kao has stipulated the estimation method and the base years for this item and requires that the

number of years for simple recovery of investment calculated from the above-mentioned cost advantage and the total investment be below the base years. The projects in which investment is now possible as a result of introducing internal carbon pricing include the solar panels with 1,500-kW generation capacity installed at the Tochigi Plant, and the solar panels with 336-kW generation capacity installed at the Toyohashi Plant. The solar panels installed at these two plants generate a total power output of 1,900 MWh per year, reducing CO2 by approximately 1,100 tons.
Kao has set a target of reducing SCOPE1+2 emissions by 55% by 2030. Kao has analyzed the possibility of achieving this target by setting the ICP unit cost at 18,500 yen/t-CO2.

C12. Engagement

C12.1

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

Yes, our suppliers
Yes, our customers/clients
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)

53

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

37.7

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.
Further, Kao also participates in the CDP SC program and requests that important suppliers respond to surveys. Number of supplier was 53% on procurement base. 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

Since the ratio of Category 1 in Kao's Scope 3 is as important as 37.7%, we consider that it is effective to reduce Category 1 through engagement with suppliers.
Kao is promoting activities and requests for suppliers to reduce CO2 emissions through the CDP SC program, targeting suppliers who account for the majority of Category 1 emissions.
Kao participates in Climate Change section of the CDP SC Program and asks key suppliers to provide responses. For reporting purposes, we selected 337 suppliers from the important business fields such as plastics, paper, and other chemicals. This covers 53% of suppliers on a purchase price basis and all kind of Kao product 2021.
Through the CDP SC Programs, we evaluated their reply and divided into four levels such as the information disclosure level *, awareness level**, management level***, and leadership level****. Kao consider measures of success is that supplier get management level*** or leadership level****. Management level*** or leadership level**** suppliers need to set targets in one of 1) CO2 reduction project recording or CO2 emission amount reduction recording, 2) Scope 3 (procurement) estimation, or 3) Estimation of the amount of CO2 emissions associated with the portion supplied to Kao, in 2021 increased by 4% (7 companies) from 2020. There were 176 companies with the management level *** and leadership level****. This is 52% of the suppliers who asked for an answer. Kao will engage suppliers so that the percentage of suppliers who get management level *** and leadership level**** will be more than 80% by 2030.
As a result, Kao can receive low CO2 emissions raw material from these suppliers. Kao's Category 1 is 422.8 million tons, a decrease of 6% from the target base year of 4496 thousand tons in 2017.

Comment

C12.1b

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

Type of engagement & Details of engagement

Education/information sharing

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

% of customers by number

56

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

41.5

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 41.45% of the entire product life cycle. We are engaging in "eco together" activities with various stakeholders to reduce the environmental load when products are used, and such important stakeholders include customers. Kao accounts for approximately 70% of its sales in Japan, of which 81% is for consumer businesses. Since 56% (= 70% x 81%) is sales to Japanese consumers, 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 in Japan. As engagement methods, we visit elementary and middle schools to give lectures, offer plant tours to students and general consumers, and
participate in environmental events held by local governments and at stores. We further enhance engagement with customers by actively interacting with the users and customers of our products through our website and encourage them to take action for climate change through energy-saving, water-saving, and electricity-saving activities.

Impact of engagement, including measures of success

-The impact of climate-related engagement strategy ; On our CO2 emissions through Kao products' entire life cycle (11,398 Kton-CO2), products use phase (category 11 of scope 3) accounted for 41%. To reduce category 11 emission, we engage with customers. So one of measures of success is reduce CO2 emissions of scope3-category 11 vs previous year. In 2021, CO2 emissions in category 11 was 4,647K ton-CO2, a slight decrease from 4,653Kton-CO2 in 2020. This means there was an impact of engagement to our products' entire life cycle CO2 emission in 2021.
Thus, Kao has added the activity of engaging with customers, "eco together with customers," to the strategy to our products' entire life cycle CO2 emission

-description of measures of success ; We use the number of people we engaged, sales of environmentally-friendly products, etc., to measure the effect of our engagement. Cumulative number of people reached by awareness-raising activities for promoting environmentally friendly lifestyles and realizing a sustainable world (cumulative since 2016) was 3.10 million in 2021 (3.07 million in 2020). In 2021. The ratio of sales of products with a low environmental burden that have cleared Kao's unique strict certification criteria in Japan was 29%, higher than the 28% of the previous year. This is attributed to some refill products not displaying a "eco together" logo even though they met the standards.

C12.1d

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

Kao's Scope 3 emissions are the third highest at 12.8% of the disposal stage. That's why we engage stakeholders involved in product disposal. Stakeholders involved in disposal are consumers, recyclers, distributors and municipalities. Therefore, we are working with these stakeholders on an activity called "Recycreation". "Recycreation" transforms plastic packaging into new value rather than disposing. Consumers bring refill containers to local governments and distribution stores. These containers are clollect to recycler and recycled. So far, we have regenerated refillable containers into blocks that are easy to assemble and reuse. Recycled plastic was calculated to be 3.32kg-CO2 / kg while virgin plastic was calculated to be 4.32kg-CO2 / kg . In 2021, 6 ton refill container was regenerated into a block.

C12.2

(C12.2) Do your suppliers have to meet climate-related requirements as part of your organization's purchasing process?

Yes, climate-related requirements are included in our supplier contracts

C12.2a

(C12.2a) Provide details of the climate-related requirements that suppliers have to meet as part of your organization's purchasing process and the compliance mechanisms in place.

Climate-related requirement

Complying with regulatory requirements

Description of this climate related requirement

Kao has formulated and published a basic procurement policy. We promise to comply with relevant laws regarding legal compliance and ethics.

% suppliers by procurement spend that have to comply with this climate-related requirement

100

% suppliers by procurement spend in compliance with this climate-related requirement

100

Mechanisms for monitoring compliance with this climate-related requirement

Supplier self-assessment

Response to supplier non-compliance with this climate-related requirement

Suspend and engage

Climate-related requirement

Climate-related disclosure through a public platform

Description of this climate related requirement

We are participating in the CDP Supply Chain Program and asking our key suppliers to disclose relevant information. In 2021, the key suppliers are 337 companies and response rate was 78% in regard to climate change. These suppliers by procurement spend are 41%.

% suppliers by procurement spend that have to comply with this climate-related requirement

53

% suppliers by procurement spend in compliance with this climate-related requirement

41

Mechanisms for monitoring compliance with this climate-related requirement

Second-party verification

Response to supplier non-compliance with this climate-related requirement

Retain and engage

Climate-related requirement

Setting a low-carbon energy target

Description of this climate related requirement

The requirements for suppliers are disclosed as follows in the partnership requirements for business partners.
Environmental management
Promotion of decarbonization throughout the product life cycle (reduction target setting, resource saving, energy saving, utilization of renewable energy, transportation efficiency, etc.)

% suppliers by procurement spend that have to comply with this climate-related requirement

100

% suppliers by procurement spend in compliance with this climate-related requirement

100

Mechanisms for monitoring compliance with this climate-related requirement

Supplier self-assessment

Response to supplier non-compliance with this climate-related requirement

Retain and engage

Climate-related requirement

Implementation of emissions reduction initiatives

Description of this climate related requirement

The requirements for suppliers are disclosed as follows in the partnership requirements for business partners.
Environmental management
Promotion of decarbonization throughout the product life cycle (reduction target setting, resource saving, energy saving, utilization of renewable energy, transportation efficiency, etc.)

% suppliers by procurement spend that have to comply with this climate-related requirement

100

% suppliers by procurement spend in compliance with this climate-related requirement

100

Mechanisms for monitoring compliance with this climate-related requirement

Supplier self-assessment

Response to supplier non-compliance with this climate-related requirement

Retain and engage

Climate-related requirement

Purchasing renewable energy

Description of this climate related requirement

The requirements for suppliers are disclosed as follows in the partnership requirements for business partners.
Environmental management

Promotion of decarbonization throughout the product life cycle (reduction target setting, resource saving, energy saving, utilization of renewable energy, transportation efficiency, etc.)

% suppliers by procurement spend that have to comply with this climate-related requirement

100

% suppliers by procurement spend in compliance with this climate-related requirement

100

Mechanisms for monitoring compliance with this climate-related requirement

Supplier self-assessment

Response to supplier non-compliance with this climate-related requirement

Retain and engage

Climate-related requirement

Setting a science-based emissions reduction target

Description of this climate related requirement

We are participating in the CDP Supply Chain Program and asking our key suppliers to disclose relevant information. In 2021, the key suppliers are 337 companies and response rate was 78% in regard to climate change. And 27 companies satisfied SBTi targets. 27 suppliers by procurement spend are 8%.

% suppliers by procurement spend that have to comply with this climate-related requirement

53

% suppliers by procurement spend in compliance with this climate-related requirement

8

Mechanisms for monitoring compliance with this climate-related requirement

Supplier self-assessment

Response to supplier non-compliance with this climate-related requirement

Retain and engage

Climate-related requirement

Waste reduction and material circularity

Description of this climate related requirement

The requirements for suppliers are disclosed as follows in the partnership requirements for business partners.
Environmental management
Promotion of decarbonization throughout the product life cycle (reduction target setting, resource saving, energy saving, utilization of renewable energy, transportation efficiency, etc.)

% suppliers by procurement spend that have to comply with this climate-related requirement

100

% suppliers by procurement spend in compliance with this climate-related requirement

100

Mechanisms for monitoring compliance with this climate-related requirement

Supplier self-assessment

Response to supplier non-compliance with this climate-related requirement

Retain and engage

C12.3

(C12.3) Does your organization engage in activities that could either directly or indirectly influence policy, law, or regulation that may impact the climate?

Row 1

Direct or indirect engagement that could influence policy, law, or regulation that may impact the climate

Yes, we engage directly with policy makers
Yes, we engage indirectly through trade associations

Does your organization have a public commitment or position statement to conduct your engagement activities in line with the goals of the Paris Agreement?

Yes

Attach commitment or position statement(s)

environmental-statement.pdf
environmental-statement.pdf

Describe the process(es) your organization has in place to ensure that your engagement activities are consistent with your overall climate change strategy

In Japan, the person in charge of the environmental department checks the policymaker's and trade association's site site multiple times a year. If there are changes to policies, laws or regulations and the changes are important, they would be

deliberated by the ESG Management Committee.
At locations outside of Japan, local environmental department personnel get information from the policymaker's site. If there are changes in policies, laws or regulations and the changes are important, contact the HQ Japan and the ESG Management Committee would discuss them.

C12.3a

(C12.3a) On what policy, law, or regulation that may impact the climate has your organization been engaging directly with policy makers in the reporting year?

Focus of policy, law, or regulation that may impact the climate

Adaptation and/or resilience to climate change

Specify the policy, law, or regulation on which your organization is engaging with policy makers

Amendment of the Act on Promotion of Global Warming Countermeasures (2021) in Japan
In addition to positioning 2050 carbon neutral, which was declared in the fall of 2020, as a basic principle, we will take measures to decarbonize by utilizing local renewable energy, and digitize and open data on corporate emissions information. We have established a mechanism to promote.

Policy, law, or regulation geographic coverage

National

Country/region the policy, law, or regulation applies to

Japan

Your organization's position on the policy, law, or regulation

Support with no exceptions

Description of engagement with policy makers

Kao participated in the decarbonization management network planned by the Ministry of the Environment, and expressed his opinion as a leading company in Japan on the issues in the revision of the Act on Promotion of Global Warming Countermeasures.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

Have you evaluated whether your organization's engagement is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

C12.3b

(C12.3b) Provide details of the trade associations your organization engages with which are likely to take a position on any policy, law or regulation that may impact the climate.

Trade association

Japan Chemical Industry Association/日本化学工業協会

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

Kao is a corporate member of the Japan Chemical Industry Association. By being a corporate member, we can promote the decarbonization efforts of the world as an industry group.
The Japan Chemical Industry Association has announced "a stance as a chemical industry toward carbon neutrality" aiming for carbon neutrality in 2050. Kao is aiming for carbon neutrality in 2040, but both the Chemical Industry Association and Kao agree that the target is consistent with the 1.5C target.
Kao agree with Japan Chemical industry Association's policy as below.
The chemical industry participated in Keidanren's "Voluntary Environmental Action Plan" from 1997 to 2012, promoted energy conservation, and continued activities to curb CO2 emissions. From fiscal 2013, we will participate in Keidanren's "Low Carbon Society Action Plan" to (1) reduce CO2 emissions from domestic business activities, and (2) reduce CO2 emissions throughout the supply chain through the spread of low-carbon products and technologies. Strengthening cooperation between actors to be promoted, (3) International contribution through overseas expansion of Japanese chemical products and processes, (4) Development of innovative technologies that are medium- to long-term technological developments with a view to practical application after 2020. We are promoting global warming countermeasures with these four pillars.

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

Describe the aim of your organization's funding

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

C12.4

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

Publication

In mainstream reports

Status

Complete

Attach the document

securities-fy2021-all-01.pdf

Page/Section reference

securities-fy2021-all-01.pdf P14-15

Content elements

Governance
Strategy
Risks & opportunities

Comment

Publication

In voluntary communications

Status

Complete

Attach the document

sustainability2022-e-all_light4.pdf

Page/Section reference

sustainability2022-e-all_light4.pdf

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

C15. Biodiversity

C15.1

(C15.1) Is there board-level oversight and/or executive management-level responsibility for biodiversity-related issues within your organization?

	Board-level oversight and/or executive management-level responsibility for biodiversity-related issues	Description of oversight and objectives relating to biodiversity
Row 1	Yes, both board-level oversight and executive management-level responsibility	i) Where does the position or committee fit within the organizational structure? Kao recognizes that the degradation of the world's biodiversity has a significant impact on the development and sustainability of our business. Biodiversity is under the supervision of the CEO because it is a management issue that needs to be monitored. Biodiversity-related risks are managed by the Risk and Crisis Management Committee (chaired by executive manager, meets four times a year) and the Responsible Care Promotion Committee (chaired by executive manager, meets twice a year). The Risk and Crisis Management Committee and the Responsible Care Promotion Committee are under the Internal Control Committee (chaired by the CEO, meets at least once a year). Biodiversity-related opportunities are managed by the ESG Committee (meets 6 times a year, chaired by the CEO, with executive managers as members). ii) Clear rationale for why the position or committee is responsible The Internal Control Committee and the ESG Committee, both of which are chaired by the CEO, address issues related to Kao's biodiversity. This is because Kao recognizes that addressing biodiversity is an important issue that requires

		management judgment as part of its business activities. Because risks related to biodiversity are of management importance, the Risk and Crisis Management Committee is responsible for assessing and managing them. Because biodiversity laws and regulations are important to management, the Responsible Care Promotion Committee is responsible for compliance and management of these laws and regulations. The Internal Control Committee receives reports on the activities of the Responsible Care Promotion Committee and the Risk and Crisis Management Committee and supervises the activities of each committee. Because opportunities related to biodiversity are important for management, the ESG Committee manages, deliberates, and approves basic policies such as the “Basic Policy on Biodiversity”, as well as themes and targets for Kao's ESG activity strategy, the "Kirei Lifestyle Plan”. The activities of the Internal Control Committee and the ESG Committee are reported to and supervised by the Board of Directors at least once a year. Therefore, the CEO is ultimately responsible for Kao's biodiversity.

C15.2

(C15.2) Has your organization made a public commitment and/or endorsed any initiatives related to biodiversity?

	Indicate whether your organization made a public commitment or endorsed any initiatives related to biodiversity	Biodiversity-related public commitments
Row 1	Yes, we have made public commitments only	Commitment to no conversion of High Conservation Value areas Commitment to secure Free, Prior and Informed Consent (FPIC) of Indigenous Peoples Other, please specify the Cartagena Protocol on Biodiversity

C15.3

(C15.3) Does your organization assess the impact of its value chain on biodiversity?

	Does your organization assess the impact of its value chain on biodiversity?
Row 1	Yes, we assess impacts on biodiversity in both our upstream and downstream value chain

C15.4

(C15.4) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?

	Have you taken any actions in the reporting period to progress your biodiversity-related commitments?	Type of action taken to progress biodiversity- related commitments
Row 1	Yes, we are taking actions to progress our biodiversity-related commitments	Land/water protection Land/water management Species management Education & awareness Law & policy Livelihood, economic & other incentives

C15.5

(C15.5) Does your organization use biodiversity indicators to monitor performance across its activities?

	Does your organization use indicators to monitor biodiversity performance?	Indicators used to monitor biodiversity performance
Row 1	No, we do not use indicators, but plan to within the next two years	

C15.6

(C15.6) Have you published information about your organization's response to biodiversity-related issues for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Report type	Content elements	Attach the document and indicate where in the document the relevant biodiversity information is located
In mainstream financial reports	Risks and opportunities	Annual Securities Report (securities-fy2021-all-01.pdf) p15 Risks and opportunities related to Kao's business, transition - conservation of biodiversity 1
In voluntary sustainability report or other voluntary communications	Content of biodiversity-related policies or commitments Governance Impacts on biodiversity	p16-17 ESG governance structure, p83-90 Responsibly sourced raw materials, p316-329 Biodiversity 2

	Risks and opportunities Biodiversity strategy	

[1]securities-fy2021-all-01.pdf

[2]sustainability2022-e-all_light4.pdf

C16. 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.

C16.1

(C16.1) Provide details for the person that has signed off (approved) your CDP climate change response.

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