C0. Introduction

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

The Asahi Kasei Group operates in the three business sectors of "Material", encompassing fibers & textiles, petrochemicals and electronic devices businesses, "Homes", covering homes and construction materials businesses, and "Health Care", including pharmaceuticals and medical devices businesses. With "contributing to life and living for people around the world" as our Group Mission, we strive to heighten resource and energy efficiency with outstanding production technology, providing products and services that meet customer needs.

C0.2

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

<table>
<thead>
<tr>
<th>Reporting year</th>
<th>Start date</th>
<th>End date</th>
<th>Indicate if you are providing emissions data for past reporting years</th>
<th>Select the number of past reporting years you will be providing emissions data for</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 1 2020</td>
<td>March 31 2021</td>
<td>No</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
</tr>
</tbody>
</table>

C0.3

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

China
France
Germany
India
Japan
Republic of Korea
Singapore
Sweden
Taiwan, Greater China
Thailand
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.

Financial control

C-CH0.7
(C-CH0.7) Which part of the chemicals value chain does your organization operate in?

Row 1

- Bulk organic chemicals
  - Polymers
  - Adipic acid
- Bulk inorganic chemicals
  - Nitric acid
  - Chlorine and Sodium hydroxide
  - Hydrogen
- Other chemicals
  - Specialty chemicals
  - Specialty organic chemicals

(C-CN0.7/C-RE0.7) Which real estate and/or construction activities does your organization engage in?

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.

<table>
<thead>
<tr>
<th>Position of individual(s)</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board Chair</td>
<td>Asahi Kasei’s business management is based on “highly value-added business with high profitability” through contributions to the social issues “clean environmental energy society”, “healthy, comfortable, secure and long-lived society”. Especially automobiles, environment, energy and healthcare are the important areas of our business, and these businesses are closely related to climate change issues, so we have to oversee those issues by the board as one of the important tasks of the management plan including financial planning. Therefore, Asahi Kasei’s board chair is regarded as the position with the highest responsibility for climate-related issues. Asahi Kasei’s board chair is served by the president. The Board made climate-related decisions such as our new medium-term strategic management initiative “Cs+ for Tomorrow 2021” for the three-year period from fiscal 2019 through fiscal 2021 which is aiming to contribute to a sustainable society by expanding businesses that help reduce GHG emissions and reducing emissions from our own production processes.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Frequency with which climate-related issues are a scheduled agenda item</th>
<th>Governance mechanisms into which climate-related issues are integrated</th>
<th>Scope of board-level oversight</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scheduled – all meetings</td>
<td>Reviewing and guiding strategy</td>
<td>Climate change is an important management issue for us. The agenda related to climate change reported from Advisory Committees such as “Responsible Care Committee”, “Sustainability Promotion Committee” and “Strategic Management Council” is decided by the board. The board meeting is held more than once a month and is held from time to time if there is an urgent agenda to be discussed. Decisions made by the Board, such as our business strategy, capital investment, loans and investments to deal with risks and opportunities, CSR issues including climate change, risk management, compliance, etc., are ordered to directors who are in charge of each department, and developed for concrete activities. The Asahi Kasei group has launched a new medium-term strategic management initiative “Cs+ for Tomorrow 2021” for the three-year period from fiscal 2019 through fiscal 2021. Under the new management initiative, Asahi Kasei expresses its stance for contribution to sustainability as “Care for People, Care for Earth.” We are aiming to contribute to a sustainable society by expanding businesses that help reduce GHG emissions and reducing emissions from our own production processes. Especially, we newly set our long-term GHG reduction target to become carbon neutral by 2050 and to decrease GHG emissions by more than 30% compared to 2013 levels by 2030 as a milestone.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reviewing and guiding major plans of action</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reviewing and guiding business plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Setting performance objectives</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Monitoring implementation and performance of objectives</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Overseeing major capital expenditures, acquisitions and divestitures</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Monitoring and overseeing progress against goals and targets for addressing climate-related issues</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

C1.2

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

<table>
<thead>
<tr>
<th>Name of the position(s) and/or committee(s)</th>
<th>Reporting line</th>
<th>Responsibility</th>
<th>Coverage of responsibility</th>
<th>Frequency of reporting to the board on climate-related issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>President</td>
<td>&lt;Not Applicable&gt;</td>
<td>Both assessing and managing climate-related risks and opportunities</td>
<td>&lt;Not Applicable&gt;</td>
<td>Quarterly</td>
</tr>
</tbody>
</table>

C1.2a
(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

<table>
<thead>
<tr>
<th>Entitled to incentive</th>
<th>Type of incentive</th>
<th>Activity incentivized</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board/Executive board</td>
<td>Monetary reward</td>
<td>Emissions reduction target</td>
<td>In terms of performance-based remuneration, which constitutes a part of the remuneration of executive directors, from the perspective of providing incentives linked to performance and management strategies as senior management, both the degree of achievement of financial targets including asset efficiency and non-financial targets such as individual targets concerning the promotion of sustainability are considered. The sustainability activities include the management of climate-related issues.</td>
</tr>
</tbody>
</table>

C.2. Risks and opportunities

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

Yes

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

<table>
<thead>
<tr>
<th>From (years)</th>
<th>To (years)</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-term</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Medium-term</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Long-term</td>
<td>5</td>
<td>10</td>
</tr>
</tbody>
</table>
(C2.1b) How does your organization define substantive financial or strategic impact on your business?

We understand that “substantive financial or strategic impact on our business” means to us any significant impact on our plants’ operations, financial performance or the relationship between us and our stakeholders. For example, if a severe drought or flood should hit an Asahi Kasei plant or any of our major suppliers, our operations could be disrupted, which might significantly affect our financial performance, and if any of our plants should release hazardous substances into rivers or the sea, affecting people’s health or fishery production, it could significantly damage our relationship with stakeholders. Therefore, the definition not only applies to impact resulting from our own operations but also impact resulting from suppliers’ operations. It is not always easy to estimate in advance the magnitude and probability of such adverse events, and it is almost impossible to quantify the impact of a decline in stakeholder trust, but because an issue with potential loss of certain billion yen or more shall be discussed at the Board of Directors, that could be thought of as a threshold that indicates substantive change. Furthermore, on our climate change risk analysis, we consider the case where the sales amount damages is assumed to be more than the ratio / amount set for each department, or the impact on direct operation or damage to the supply chain, such as a decrease in sales or a decline in market share, or cancellation for a certain period for each factory or business.

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

<table>
<thead>
<tr>
<th>Value chain stage(s) covered</th>
<th>Direct operations</th>
<th>Upstream</th>
<th>Downstream</th>
</tr>
</thead>
</table>

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
The process used to determine which risks and/or opportunities could have a substantive financial or strategic impact. We currently use the TCFD framework to determine the risks and opportunities of our company and how those could have substantive financial or strategic impact on us. We suppose two scenarios for the climate change and relevant social change, meaning +4°C scenario and +2°C scenario. In +4°C scenario, the temperature will rise sharply in accordance with the strengthening Typhoon of heavier rain and stronger wind. In +2°C scenario, the temperature will rise modestly with stricter regulations on CO2 emissions and promoting policy of more climate-friendly alternatives, such as electric vehicles. We have discussed the impact of both risks and opportunities and the members include those from our core three business units, Material, Houses and Healthcare and corporate division. After the discussion, we had more comprehensive discussion at the corporate strategy committee and the board meeting to determine the risks and opportunities. As for physical risks, the possibility of product loss and shutdown including supply chain damage is increasing, because of growing frequency and magnitude in the floods and gusts caused by climate change, so we specify the behavioral standards for each situation in case of emergency, simulate the total damages, and are considering BCP (Business Continuity Plan) countermeasures. As a concrete BCP countermeasure, we review and identify important items with long delivery period at each factory, reviewing spare parts and installed position of important equipment, and preparing and managing to make it possible to start operations at an early stage. This risk response is reviewed every few years. As a physical opportunity, we take opportunities to expand sales of our products due to the effects of climate change, and use them to manage product development and product sales expansion. We build product strategies and business strategies that contribute to climate change countermeasures, expand business and strengthen corporate value appeal through media and public relations. A case study of how the described process is applied to Transitional risks and/or opportunities As for physical risks, the possibility of product loss and shutdown including supply chain damage is increasing, because of growing frequency and magnitude in the floods and gusts caused by climate change, so we specify the behavioral standards for each situation in case of emergency, simulate the total damages, and are considering BCP (Business Continuity Plan) countermeasures. As a concrete BCP countermeasure, we review and identify important items with long delivery period at each factory, reviewing spare parts and installed position of important equipment, and preparing and managing to make it possible to start operations at an early stage. This risk response is reviewed every few years. As a physical opportunity, we take opportunities to expand sales of our products due to the effects of climate change, and use them to manage product development and product sales expansion. We build product strategies and business strategies that contribute to climate change countermeasures, expand business and strengthen corporate value appeal through media and public relations. A case study of how the described process is applied to Transitional risks and/or opportunities. With regard to transition risk, tightened regulations on environmental taxes and GHG emissions leads to a decrease in demand for our products and we will face a risk of declining profitability. However, we strive to thoroughly conserve energy and improve energy intensity. On the other hand, as a transition opportunity, by proactively developing products that contribute to reducing GHG emissions, we will seize the creation of business opportunities. Specifically, in product development, using LCA (Life Cycle Assessment), we identify risky processes and grasp the CO2 emissions at the production stage and use stage to identify the risk. In addition to managing development priorities, we have successfully improved reputation of low carbon products through disclosure of data.
(C2.2a) Which risk types are considered in your organization’s climate-related risk assessments?

<table>
<thead>
<tr>
<th>Risk Type</th>
<th>Relevance &amp; Inclusion</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current regulation</td>
<td>Relevant, always included</td>
<td>If the laws and regulations related to climate change and on energy saving are greatly tightened in the future, there will be a risk of increasing production and transportation costs. For that purpose, we set concrete quantitative targets for short-term, mid and long-term and make efforts to reduce energy consumption per unit, and continue substantive energy reduction efforts. In addition, we obtain information to which the current regulation is strengthened early from the draft stage of regulation, simulated when regulation is actually enforced, and we estimate the financial impact, technical impact on operations, impact on production volume and integrate the estimate into climate change risk assessment. For example, in our textile business, due to an increase in fixed expenses on capital investment in response to Japan’s environmental tax and CO2 emission regulation, production cost tends to increase. As a result, our international price competitiveness might decline, and there is a risk of getting worse in our profit and loss at our global business level. For this reason, we newly set our long-term GHG reduction target to become carbon neutral by 2050 and to decrease GHG emissions by more than 30% compared to 2013 levels by 2030 as a milestone. We will review the improvement plan from time to time according to regulatory trends.</td>
</tr>
<tr>
<td>Emerging regulation</td>
<td>Relevant, always included</td>
<td>In order to implement Japanese NDC in the Paris Agreement, while energy mix goes as planned, securing inexpensive electricity with low carbon is indispensable, the chemical industry improves the efficiency of existing in-house power generation facilities and newly installs private power generation facilities. We are actively investing in power generation efficiency to contribute to CO2 reduction, but as a burden of maintaining operation expenses of regulated electricity distribution network, regulation of fixed tolling for private power generation owners is discussed under the Committee for Monitoring Electricity and Gas Transactions, the Ministry of Economy, Trade and Industry in Japan. When these are enforced and regulated, a change corresponding to the generation capacity of our private power generation facility will be carried out and it will be a considerable annual burden amount for us. We send out comments through the Industrial Association, simulate the amount of burden when these are introduced, and integrated this into risk assessment as an element of our climate change risk as future emerging regulation risk.</td>
</tr>
<tr>
<td>Technology</td>
<td>Relevant, always included</td>
<td>As a result of global warming caused by climate change, unless we focus on technological development in the basic field of building insulation to prevent global warming and the insulation field in response to possible enormous natural disasters such as wind and flood damage, it leads to risk of loss of corporate value as well as risk of sales decrease. We evaluate the degree of damages to residential buildings due to natural disasters such as wind damage and flood disasters, predict the size and situation of disasters, and are working on technology development that can respond to the damage. In addition, we have been improving thermal insulation performance, for example, incorporating technologies that utilize geothermal energy together with air conditioning and hot water supply, and developing environmentally conscious housing that is more effective in reducing CO2 emissions. As a case in point, Neoma Foam TM is an eco-efficient, high-performance thermal insulation material for comfortable, energy-conserving homes. This high-performance phenolic foam insulation panel features world-leading insulation performance that is maintained over a long service life, as well as outstanding flame resistance. Thus we incorporate how we can reduce physical risks to residential buildings by developing new technologies into risk assessment.</td>
</tr>
<tr>
<td>Legal</td>
<td>Relevant, always included</td>
<td>As a result of the revised laws and regulations by climate change response, changing the operating system of our factories, it is predicted that the procedures of our operation and management system might be inadequate in conventional way. If these correspondences are not enough and then lead to violation, the credibility to our company will be lost and there is a risk that the corporate value will be reduced. For this reason, compliance with laws in product / business activities is incorporated into our risk assessment. In order to respond to global warming, further improvement of heat insulation performance might be required for building energy saving. In order to prevent materials to be used in our company’s housing business from combustion with the criteria of chemical substance, as part of our Responsible Care (IRC) program we maintain awareness of the properties of the chemical substances we use, and manage them strictly and appropriately. For example, we conduct extensive education and training for all personnel in research, manufacturing, and sales, to share information on the latest chemical regulations both in Japan and overseas and study how to respond to them, and to introduce the latest chemical management subjects.</td>
</tr>
<tr>
<td>Market</td>
<td>Relevant, always included</td>
<td>With climate change, there are areas where physical risk increases in the world. In a chronic water shortage area, as water climate change progresses, water shortage may get serious and water demand for recycling is expected to increase. If we do not develop marketing activities of our “Michozu” (water treatment membrane), understanding the water shortage level, infrastructure equipment, water quality regulations in each region of the world, there is a risk of loss of business opportunities. Our climate change risk assessment incorporates the market impact of exposure to climate change risk, such as water shortage at regional level, more detailed than country level.</td>
</tr>
<tr>
<td>Reputation</td>
<td>Relevant, always included</td>
<td>Concern in energy saving and climate change issues has increased, and consumers are deepening their understanding of “eco reform”, house renovation with photovoltaic power generation, fuel cells, salvable recovery, and eco-friendly products, especially for residential buildings and building materials, there is a tendency to consider CO2 emissions among those users and consumers. As a result, unless we intensively corporate value appeal on the environment through media and public relations, our reputation deteriorates and there is a risk of opportunity loss. We have built a product strategy (CEM, ARIS etc.) that contributes to global warming and a remodeling business strategy, and incorporate customer satisfaction survey, marketing analysis of sales department, into reputation risk assessment of climate change.</td>
</tr>
<tr>
<td>Acute physical</td>
<td>Relevant, always included</td>
<td>Many of our production sites are located in coastal areas (Kawasaki city, Fuji City, Kurashiki city, and Nobeoka city). According to the IPCC, at the end of 21st century, due to large scale floods, heavy rainstorms, heavy typhoons, storm caused by unexpectedly low pressure etc., the factory will submerge. It will take time to resume operation and then there is a risk that the business will decline. For climate change risk assessment, we also incorporate information from the regional hazard maps, the breakwater construction plan around the plant into the climate change risk assessment, as well as IPCC projections, and evaluate our acute physical risk.</td>
</tr>
<tr>
<td>Chronic physical</td>
<td>Relevant, always included</td>
<td>Many of our production sites are located in coastal areas (Kawasaki city, Fuji City, Kurashiki city, and Nobeoka city). According to the IPCC, it is predicted that the sea level will rise 26 to 82 cm at the end of the 21st century. The possibility of submergence due only to sea level rise is low, but there is a risk of stimulating the risk of flood damage due to storm surge and floods. For climate change risk assessment, we also incorporate information obtained from regional hazard maps, breakwater construction plans around the factory and evaluate our chronic physical risk.</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Identifier</th>
<th>Risk 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where in the value chain does the risk driver occur?</td>
<td>Direct operations</td>
</tr>
<tr>
<td>Risk type &amp; Primary climate-related risk driver</td>
<td>Carbon pricing mechanisms</td>
</tr>
</tbody>
</table>

Primary potential financial impact

Increased indirect (operating) costs

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

In Japan, a "global warming countermeasures tax " was placed into effect in FY 2012 and the tax rate per quantity unit was set in a way that the tax burden equals 289 yen/ton CO2 emissions. Under this scheme, companies that utilize fossil fuels were assessed a tax rate of 250 yen/kWh petroleum and 220 yen/kWh coal starting in October 2012. The rate of petroleum rose to 500 yen/kWh in April 2014 and then to 780 yen/kWh in April 2016, also coal rose to 440 yen/kWh in 2014 and then to 670 yen/kWh in 2016. In
2020, the Asahi Kasei Group, the third-largest consumer of energy within Japan’s industrial sector, supplies about 50 percent of the Group’s total energy needs through in-house power generation and makes direct purchases of the fossil fuels consumed by its in-house power generation systems. The consumption of coal only in Asahi Kasei Group has reached to 0.37million tonnes which cost 248 million yen of carbon tax. Even though in 2020 the emission of CO2 has decrease 2.5% compared to 2019 along with the decrease rate of sales which was 2.1%, the implemented global warming countermeasures tax currently burden us 831 million yen combining all source of fossil fuels per year. In view of the strong likelihood that the global warming countermeasures tax rate will be increased in the years ahead, we have a high chance of an increase in the cost burden.

**Time horizon**
Medium-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)**
35000000000

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

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

**Explanation of financial impact figure**
Asahi Kasei is strongly aware of the need to be more aggressive in implementing large-scale GHG reduction measures. If no large-scale measures are taken, the company will continue to pay approximately 830 million yen in taxes annually, mainly on fossil fuels purchased for its domestic power generation systems. Looking at the global trend toward decarbonization, Japan currently has a low carbon tax rate of 289 yen/t-CO₂. However, according to the World Bank, in order to keep the global temperature rise below 2°C and achieve the Paris Agreement target, it is necessary to set the level of carbon tax in each country at around US $40 – 80 per t-CO₂ (4,500 to 9,000 yen). We confirmed that when calculating the potential economic impact of our Group’s total annual CO2 emissions (3.89 million t-CO₂) by taking into account the upper limit of a carbon tax estimated by the World Bank, the Group may incur a tax burden of up to 35 billion yen per year. Potential financial impact figure: Total CO2 emissions (3.89 million t-CO₂) x 9,000 yen/t-CO₂ =35,000,000,000 yen

**Cost of response to risk**
10000000000

**Description of response and explanation of cost calculation**
Situation) Companies in Japan that utilize fossil fuels are required to pay a tax on heavy fuel. The rate is scheduled to rise in a phased manner. Task) Asahi Kasei supplies about 50 percent of the Group’s total energy needs through in-house power generation and makes direct purchases of the fossil fuels consumed by its in-house power generation systems. In view of the strong likelihood that the fuel tax rate will be increased in the years ahead, we need to avoid the potential risk of an increase in the cost burden. Action) To mitigate this risk, Asahi Kasei has begun utilizing fuels that generate low CO2 emissions. In 2015, We have invested in equipment that allows the on-site generating systems at Nobeoka plant facility to burn woody biomass fuels, thus enabling us to convert approx. half of our on-site generation fossil-fuel consumption to woody biomass fuels. Furthermore, in 2018, we started to renovate two of our hydroelectric power plants located in Kyushu, the Gokasegawa Plant and Mamihara Plant which supply electricity to our manufacturing plants in the Nobeoka area. That will enable us to continue using renewable energy over the long term. Result) As a result, the biomass fuel consumption and hydropower in Nobeoka has increased to 296,290MWh and 182,982 MWh, which account for 7.03% and 4.34% of the total energy consumption in Nobeoka. ( how the figure in “ Cost of Management “ was calculated ) Renovation of our hydroelectric power plants located in Kyushu, the Gokasegawa Plant and Mamihara Plant requires approximately 10 billion yen which will be covered by our green bond.

**Comment**

**Identifier**
Risk 2

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

**Risk type & Primary climate-related risk driver**
Acute physical
Increased severity and frequency of extreme weather events such as cyclones and floods

**Primary potential financial impact**
Decreased revenues due to reduced production capacity

**Climate risk type mapped to traditional financial services industry risk classification**
<Not Applicable>

**Company-specific description**
Due to the increasing scale of flooding associated with climate change, we face an increased risk of facility water damage, lost product inventories, and lost opportunities from the suspension of production operations. In FY 2011, flood waters damaged an Asahi Kasei Group facility in Thailand that was engaged in the production of plastic compounds, forcing the closure of that facility for half a year. Our losses in that incident included 2.7 billion yen in lost income for the half-year the facility was not operational. Assessments of risk to Asahi Kasei Group facilities and business offices worldwide have determined that the aforementioned facility in Thailand is the only facility at risk of being damaged by flooding. That finding demonstrated that we would be able to limit the focus of required countermeasures to that facility alone. Unless countermeasures were taken, we could potentially face the risk of incurring an equivalent burden of losses from new flooding. The lost income of 2.7 billion yen for the flood damage in Thailand facility in the past is recorded. Our lost income opportunity was approximately 0.45 billion yen per month and we suffered for half of a year. We recognize this magnitude scale as an appropriate potential impact.

**Time horizon**
Medium-term

**Likelihood**
Virtually certain
Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
2700000000

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

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

Explanation of financial impact figure
Unless countermeasures were taken, we could potentially face the risk of incurring an equivalent burden of losses from new flooding. The lost income of 2.7 billion yen for the flood damage in Thailand factory in the past is recorded. We recognize this magnitude scale as an appropriate potential impact.

Cost of response to risk
950000000

Description of response and explanation of cost calculation
Situation) Due to the increasing flood with climate change, we face an increased risk of facility water damage, especially in Thailand. Task) The aforementioned Thai compound facility is engaged in the manufacture of functional plastic composite products using processes that blend additives into plastic feedstock at high temperatures. Extruders are the principal type of machinery at this facility, which had multiple units installed on its ground floor. We need to reduce the risk of sales loss caused by flood damage on facilities. Action) The following countermeasures were taken against potential future flood damage. 1) The power receiving and distribution boxes, transformers, and extruder control panels on the first floor were relocated to the second floor and the main extruder units were modified so that they can be lifted by crane after dismantling in the event of future flooding. 2) An upstream river monitoring framework was set up, enabling the prediction of potential flood conditions 10 days in advance. Result) These steps ensure that in the event of future flooding on a scale even larger than that experienced during the FY 2011, the equipment at this facility will suffer no damage; the duration of facility downtime will be limited to only a few weeks. (how the figure in "Cost of Management" was calculated) The cited measures including relocation of the power receiving and distribution boxes, transformers, and extruder control panels cost 950 million yen. These are mainly recorded as "buildings and accompanying facilities" and "machinery and equipment" on its financial report.

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

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
The housing market with high energy saving performance is steadily increasing in developed countries. Consumers who are end users and building materials manufacturers of houses are interested in houses and building materials with higher performance than the criteria of mandatory regulations from the viewpoint of economic view and climate change awareness. Along with the recent improvement in thermal insulation performance of buildings, interest in energy-saving performance has been increasing steadily with the spread of ZEH (zero energy house). In addition, improvement of the thermal conditions due to heat insulation has been found not only to prevent the heat shock, but also to improve various diseases, and to contribute greatly to the health of the resident. If we cannot sell products with adequate thermal performance, we may not be able to sell our products, which in turn will damage our corporate image as well. In particular among the Japanese market, HEAT 20: “High insulation technology development committee of residential building looking ahead of 2020” (Association established in 2009, composed of volunteer members, such as researcher, residential architect, home producer, insulation building material producer, etc.) suggests grade of thermal performance standards exceeding the ZEH regulation standards. Thus, thermal insulation manufacturers intensify competition to satisfy this grade. Unless we, Asahi Kasei is ahead of other companies, develop and sell high-grade products, there is a possibility of damage to sales and corporate image.

Time horizon
Short-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)
6900000000

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

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

Explanation of financial impact figure
If Asahi Kasei lags behind its competitors in the development and supply of energy-efficient building materials and ZEH products, it will inevitably lead to a decline in sales,
which will not only lower its profit margin but also adversely affect its brand images. Potential financial impact is calculated as follows. Sales related to housing in 2020 were 692.6 billion yen. The profit ratio is approximately 10%. If the sales decrease by 10%, the profit would decrease by about 6.9 billion yen even in a single fiscal year. Profit decreased by 692.6 billion yen × 10% (profit ratio) × 10% (decline in sales) ≈ 6.9 billion yen.

Cost of response to risk
341,000,000

Description of response and explanation of cost calculation
Situation) Along with the improvement of heat insulation performance of buildings, interest in energy saving has been increasing. Unless we can sell products with adequate insulation performance, we may not be able to sell our products, which in turn will damage our corporate image as well. Task) We need to develop a product that meets standards presented by HEAT 20, which exceeds the regulation criteria of ZEH (Zero Emission House) to avoid damage on our brand image. Action) To avoid the risk of sales decline as a result of not meeting market demands, we have focused on standing at the forefront of innovation. "NEOMA Foam" panels we developed represent the new standard in thermal insulation, with high performance marked by extremely low thermal conductivity, superior fire resistance, low gas release, freedom from ozone-depleting gases, ease of installation, and overall quality, safety, and efficiency. In addition, the product we developed is called "NEOMA Zeus" (equivalent to G1 of HEAT 20) which further surpassed the performance of NEOMA Foam by 10%. Result) As a result, due to solid sales increase of insulating material within our building materials business in the housing segment, sales of the entire housing segment increased by 21.6% from 570 billion yen in FY2016 to 693 billion yen in FY2020. (how the figure in “Cost of Management” was calculated) R&D for NEOMA Zeus was funded by research expenses of housing and construction materials, which accounted for 0.38% of 89.7 billion yen R&D expenditure for the entire group. 341,000,000 = 89,700,000,000 × 0.38%

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?
Downstream

Opportunity type
Products and services

Primary climate-related opportunity driver
Development of new products or services through R&D and innovation

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

Company-specific description
In 2020, the European Union (EU) has implemented regulations that capped automotive CO2 emissions at 95g/km. The Asahi Kasei Group has a business in the production of synthetic rubber compounds. Automotive tires are an important application that accounts for roughly half of the market for synthetic rubber, as measured by sales. The Asahi Kasei Group possesses polymerization and catalytic technologies for the manufacture of synthetic rubber, has developed rubber compounds using molecular structures that are suited for tires with reduced rolling resistance, and has developed and commercialized eco-tires with low rolling resistance through collaborative ventures with tire manufacturers. Its eco-tires have demonstrated sharp growth in the tire market and show potential that could lead to dramatic gains in the company’s synthetic rubber business.

Time horizon
Medium-term

Likelihood
Very 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)
28,100,000,000

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

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

Explanation of financial impact figure
Automotive tires have grown into a US$65 billion global market. That market is expected to undergo a gradual shift to eco-tires in the years ahead, starting first in those countries that impose tighter regulatory standards. As a company that has led in the development of tire rubber compounds with low rolling resistance, Asahi Kasei has the potential to vastly expand its line of tire applications. For instance, increasing the presence of Asahi Kasei in Europe and focusing on automobile related business in the material field including tires, we will set a target to increase the sales of Asahi Kasei in Europe from current EUR 0.93 billion to EUR 2.1 billion in 2025 on across-sectional marketing. (EUR 2.1 billion approximately equals to ¥JPY 281,000,000,000).

Cost to realize opportunity
Strategy to realize opportunity and explanation of cost calculation

Situation) The market for microfiltration and ultrafiltration systems is growing by some 10% annually, driven by serious environmental water quality issues and water shortages. Task) We foresee business opportunities for the supply of filtration membranes or water filtration and recycling systems that utilize our membrane technology. Action) The Asahi Kasei Group has developed its “Microza” line of water filtration systems utilizing proprietary filtration membrane technology, which are with its Microza membranes used at over 1,000 plants worldwide, enjoying a market share of over 20%. Adoption of Microza has been growing firmly in many countries which face water shortages and growing needs for improved water quality.

Cost to realize opportunity
16900000000

Strategy to realize opportunity and explanation of cost calculation

Situation) The global market for microfiltration and ultrafiltration systems is growing by some 10% annually, driven by serious environmental water quality issues and water shortages. Task) We foresee business opportunities for the supply of filtration membranes or water filtration and recycling systems that utilize our membrane technology. Action) The Asahi Kasei Group has developed its “Microza” line of water filtration systems utilizing proprietary filtration membrane technology, which are with its Microza membranes used at over 1,000 plants worldwide, enjoying a market share of over 20%. Adoption of Microza has been growing firmly in many countries which face water shortages and growing needs for improved water quality. Result) We promote “Microza” to contribute to solutions for water resources throughout the world. For example, In February 2019, the government of Kuwait, decided to adopt a water treatment fiber filtration membrane “Microza” for seawater desalination plant, which was the largest order of our water treatment membrane, and the plant started to operate in summer 2019. Asahi Kasei has the potential to vastly expand its line of tire applications. Action) Working with a tire manufacturer, we have developed and have been developing through molecular-level design a new synthetic rubber for low rolling-resistance tires. Results) We have achieved a 20% reduction in rolling resistance compared to conventional tires. For example, In 2017, July, we decided to increase production capacity of solution polymerization method styrene-butadiene rubber (S-SBR) for low fuel consumption tires, in Singapore. The scale of facilities was expanded in February 2019 and begun operation in the summer of 2019, and our supply capability in Singapore increased by about 30,000 tons / year. (how the figure in “Cost to realize opportunity” was calculated) The expansion cost of constructing the facilities in Singapore was approximately 5 billion yen. That is mainly recorded as “buildings and accompanying facilities” and “machinery and equipment” on its financial report.

Comment
Yes, a single figure estimate
Medium-high
Virtually certain

Potential financial impact figure (currency)
999999999999999
Potential financial impact figure – minimum (currency)
<Not Applicable>
Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure

Sales of material segments including filtration membranes will be aimed at 1,650 (billion yen) in FY 2025 from 1,004 (billion yen) in FY 2015. (Since the number of digits of the system is insufficient and can not be entered, it is described as 999, 999, 999, 999, 999) This figure is calculated assuming that the high-functional product is doubled from 79.1 billion yen to 140 billion yen and the operating income margin is targeted at 8.5% in 2025. This numerical value is disclosed in IR materials at the business explanatory meeting of the material segment.
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
Growing consumer awareness of climate change is expected to strengthen consumer preferences for electric vehicles (EVs). Asahi Kasei has developed materials for high-performance lithium-ion batteries that will be used in EVs and assumes that it will enjoy significant business opportunities if the market transition from gasoline-engine automobiles to EVs gains momentum. For instance, HIPORE™ is Asahi Kasei polyolefin film, used in a wide range of high-technology fields, such as lithium ion battery separators. The membranes look like plastic films, but are actually filled with microscopic pores. HIPORE™ is high-performance microporous membrane with wide range thickness and highly uniform pores.

Time horizon
Medium-term

Likelihood
Very 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)
999,999,999,999,999

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

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

Explanation of financial impact figure
Sales of material segments including separators for lithium-ion batteries will be aimed at 1,650 (billion yen) in FY 2025 from 1,004 (billion yen) in FY 2015. (Since the number of digits of the system is insufficient and can not be entered, it is described as 999, 999, 999, 999, 999.) This figure is calculated assuming that the high functional product is doubled from 79.1 billion yen to 140 billion yen and the operating income margin is targeted at 8.5% in 2025. This numerical value is disclosed in IR materials at the business explanatory meeting of the material segment. Asahi Kasei's separators for lithium-ion batteries account for half of the global market for lithium-ion batteries used in consumer applications, the largest share in the world. We expect the market for lithium-ion batteries used in hybrid and electric vehicles to significantly expand.

Cost to realize opportunity
20,300,000,000

Strategy to realize opportunity and explanation of cost calculation
Situation) Growing consumer awareness of climate change is expected to strengthen consumer preferences for electric vehicles (EVs). Task) We see business opportunities in rapid growth of Asahi Kasei needs to develop materials for high performance product for EVs. Because of the rapid expansion of hybrid vehicles and EVs, we expect many business opportunities and need to supply battery membranes for EVs promptly. Action) Our current separators for consumer lithium-ion batteries were developed to meet the performance and cost requirements of automobiles, and have been used in hybrid and electric vehicles. Additionally, we acquired Polypore, which has a different manufacturing method from our method to match the supply for automobiles. With new capacity expansion of Moriyama plant and Polypore decided in March 2019, our total LIB separator capacity will reach 1.55 billion m2/year in fiscal 2021 from 730 million m2/year in fiscal 2018. Result) As a result of the acquisition of Polypore, our market share ratio of separator membrane in the world has increased, about 50%. As a leading manufacturer, we have greater production capacity than other companies, strengthened by acquiring Polypore and increasing the capacity of Moriyama factory. (how the figure in "Cost to realize opportunity " was calculated) Research and development of lithium-ion battery separators are conducted in our electronics business segment. The cost of R&D in this segment was 20.3 billion yen in FY 2020. That cost is composed of labor, material and depreciation.

Comment

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization’s strategy and/or financial planning?
Yes, and we have developed a low-carbon transition plan

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

<table>
<thead>
<tr>
<th>No.</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The Asahi Kasei Group recognizes the necessity to work towards sustainability and that we boldly challenge the climate change issues. The world is beginning to accelerate to realize a decarbonized society. When the society notably changes, both business risks and chances exist side by side. Under such circumstances, at the Management Briefing held in May 2021, we have declared to become one of the first Japanese companies to go carbon neutral by 2050. Responding to decarbonization, development of ecological technologies and expansion of green businesses require a large sum of investment and costs. For that reason, we need to obtain the understandings of our stakeholders with the explanation of how it will strengthen our corporate value. We sincerely disclose information at a once-a-year sustainability briefing session by the President, by Sustainability Report, and by responding to ESG rating organizations including CDP. We are discussing to report our low carbon transition plans at AGMs once the preparations have been made.</td>
</tr>
</tbody>
</table>

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### C3.2

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

Yes, qualitative and quantitative

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### C3.2a

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

<table>
<thead>
<tr>
<th>Climate-related scenarios and models applied</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nationally determined contributions (NDCs)</td>
<td>Although Japan’s NDC aims to reduce 26.0% (25.4% compared with fiscal 2005) by fiscal 2030 to fiscal 2013 and to pursue further efforts to reduce GHG emissions beyond this level, Prime Minister Suga announced a new goal in April 2021 that Japan aims to reduce GHG emissions by 46% compared to fiscal 2013. Japan is going to make efforts to achieve this goal. In order to realize this goal, it is highly possible that various laws and regulations and initiatives may be developed. We consider that the impact on our material business closely related to our automobile, housing business, and environmental energy related business will be great, and therefore we have adopted NDCs for the scenario analysis. In consideration of the time axis, in order to share the goal of making global greenhouse gas emissions be carbon neutral by 2050, under a medium-term strategic management initiative “Cs for Tomorrow 2021” we newly set our long-term GHG reduction target to become carbon neutral by 2050 and to decrease GHG emissions by more than 30% compared to 2013 levels by 2030 as a milestone. The reason we set up in 2030 is to cooperate with the Government's NDC's 2030 goal. Because our business covers multiple areas such as materials, housing, healthcare, and electronics, it is necessary to analyze different scenario for each business segment. This scenario analysis result is also included in strategic measures to achieve the mid-term management plan. &quot;Flexible allocation of management resources on priority fields&quot;, &quot;Reinforcing and extending value chain management&quot; and &quot;Further accelerating transformation to a global health care company&quot;. Scenario analysis also greatly affects long-term investment plans including M&amp;A. Our business, automobile-materials field, energy sector, sanitary materials, housing business, global health care business are easily affected by risks and opportunities of climate change transition, physical risks and opportunities. Polypore (battery separator), a company acquired in 2015, is a good example of applying the scenario analysis that the business for consumer use and the demand for automotive will expand as the climate change concerns are growing. Results of the scenario analysis considering climate change, which have a significant influence on the business, are reported to the board and reflected in the company's business plan each time. Business and management plans that take into consideration the analysis results of the climate change scenario will be also announced through IR activities, CSR activities.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Have climate-related risks and opportunities influenced your strategy in this area?</th>
<th>Description of influence</th>
</tr>
</thead>
</table>

**Products and services**

| Yes | Risk; - A company specific description of how our strategy in this area has been influenced by climate-related risks AND the time horizons it covers As concerns about global warming are increasing with interest in promoting and promoting low fuel consumption tires, a tire labeling system has been introduced in various countries around the world, and rolling resistance (fuel consumption) is beginning to be graded for all tires. Legislation / self-regulation began in Japan, Europe, South Korea and China, and introduction is decided in the United States, Brazil, the Middle East and others, and therefore the time horizon the strategy covers is short-term and mid-term. There is a risk that the market share of the tire market will decline if we lag behind competitive fuel-efficient performance with competitors. - A case study of the most substantial strategic decisions made in this area to date that have been influenced by the climate-related risks We have been developing a modified SBBR that can drastically improve fuel economy performance and wear resistance performance, so and for example we increase the production capacity of our plant in Singapore for solution-polymerized styrene-butadiene rubber (S-SBR). Opportunity; - A company specific description of how our strategy in this area has been influenced by climate-related opportunities AND the time horizons it covers Concern about the impact of the use of automotive fossil fuels on climate change was raised and the EV policy was announced in various countries around the world, which has led to the opportunity for sales of our automotive LIB separators. In fact, our business is also influenced in terms of increasing production capacity. We will increase production capacity at our factory and further focus on increasing sales volume. The time horizon the strategy covers is mid and long-term because EV market will possibly develop at an accelerating pace over time. - A case study of the most substantial strategic decisions made in this area to date that have been influenced by the climate-related opportunities We expect the demand for the LIB separator market (estimated by ourselves) to increase by an average of approximately 25% from now on, and we invest 30 billion yen to enhance its manufacturing infrastructure for LIB separator in Miyazaki plant and North Carolina plant. |

**Supply chain and/or value chain**

| Yes | Risk; - A company specific description of how our strategy in this area has been influenced by climate-related risks AND the time horizons it covers The demand for water shortage and water quality improvement is high in counties like China, Korea, Thailand, Indonesia etc, leading to the opportunity to expand our operations in this area. The plants prepare annual plans for periodic training drills, and perform drills in coordination with the head office. Opportunity; - A company specific description of how our strategy in this area has been influenced by climate-related opportunities We create Microza (hollow-fiber membrane material) that have been influenced by the climate-related opportunities. We have developed the product “Neoma Zeus” which could further enhance the heat insulation performance of the heat insulating material “Neoma form” that we have been selling since 2004. Opportunity; - A company specific description of how our strategy in this area has been influenced by climate-related opportunities AND the time horizons it covers Automobile manufacturers are promoting lightweight materials as a response to CO2 emissions regulations during driving. We have been developing foam (automotive interior material with foamed polyethylene beads) leading to weight reduction compared to conventionally used noise parts and expanding market for automobile manufacturer. The time horizon the strategy covers is short-term and mid-term. - A case study of the most substantial strategic decisions made in this area to date that have been influenced by the climate-related opportunities CO2 emissions regulations are getting stricter globally, especially in the EU and China. Our sales in EU and China in fiscal 2020 were 124.8billion yen (5.9% of total sales) and 198.9 billion yen (9.4% of total sales) and we seek to create and expand business there. As one of measures for it, we established Asahi Kasei Europe GmbH in Dusseldorf, Germany, as a base for the future expansion of business in Europe and enable deeper ties to be gained with the Europe automotive industry. |

**Investment in R&D**

| Yes | Risk; - A company specific description of how our strategy in this area has been influenced by climate-related risks AND the time horizons it covers As concerns about global warming are increasing with interest in promoting and promoting low fuel consumption tires, a tire labeling system has been introduced in various countries around the world, and rolling resistance (fuel consumption) is beginning to be graded for all tires. Legislation / self-regulation began in Japan, Europe, South Korea and China, and introduction is decided in the United States, Brazil, the Middle East and others, and therefore the time horizon the strategy covers is short-term and mid-term. There is a risk that the market share of the tire market will decline if we lag behind competitive fuel-efficient performance with competitors. - A case study of the most substantial strategic decisions made in this area to date that have been influenced by the climate-related risks We have been developing a modified SBBR that can drastically improve fuel economy performance and wear resistance performance, so and for example we increase the production capacity of our plant in Singapore for solution-polymerized styrene-butadiene rubber (S-SBR). Opportunity; - A company specific description of how our strategy in this area has been influenced by climate-related opportunities AND the time horizons it covers Concern about the impact of the use of automotive fossil fuels on climate change was raised and the EV policy was announced in various countries around the world, which has led to the opportunity for sales of our automotive LIB separators. In fact, our business is also influenced in terms of increasing production capacity. We will increase production capacity at our factory and further focus on increasing sales volume. The time horizon the strategy covers is mid and long-term because EV market will possibly develop at an accelerating pace over time. - A case study of the most substantial strategic decisions made in this area to date that have been influenced by the climate-related opportunities We expect the demand for the LIB separator market (estimated by ourselves) to increase by an average of approximately 25% from now on, and we invest 30 billion yen to enhance its manufacturing infrastructure for LIB separator in Miyazaki plant and North Carolina plant. |

**Operations**

| Yes | Risk; - A company specific description of how our strategy in this area has been influenced by climate-related risks AND the time horizons it covers As concerns about global warming are increasing with interest in promoting and promoting low fuel consumption tires, a tire labeling system has been introduced in various countries around the world, and rolling resistance (fuel consumption) is beginning to be graded for all tires. Legislation / self-regulation began in Japan, Europe, South Korea and China, and introduction is decided in the United States, Brazil, the Middle East and others, and therefore the time horizon the strategy covers is short-term and mid-term. There is a risk that the market share of the tire market will decline if we lag behind competitive fuel-efficient performance with competitors. - A case study of the most substantial strategic decisions made in this area to date that have been influenced by the climate-related risks We have been developing a modified SBBR that can drastically improve fuel economy performance and wear resistance performance, so and for example we increase the production capacity of our plant in Singapore for solution-polymerized styrene-butadiene rubber (S-SBR). Opportunity; - A company specific description of how our strategy in this area has been influenced by climate-related opportunities AND the time horizons it covers Concern about the impact of the use of automotive fossil fuels on climate change was raised and the EV policy was announced in various countries around the world, which has led to the opportunity for sales of our automotive LIB separators. In fact, our business is also influenced in terms of increasing production capacity. We will increase production capacity at our factory and further focus on increasing sales volume. The time horizon the strategy covers is mid and long-term because EV market will possibly develop at an accelerating pace over time. - A case study of the most substantial strategic decisions made in this area to date that have been influenced by the climate-related opportunities We expect the demand for the LIB separator market (estimated by ourselves) to increase by an average of approximately 25% from now on, and we invest 30 billion yen to enhance its manufacturing infrastructure for LIB separator in Miyazaki plant and North Carolina plant. |

---

C3.4
(C4.1) Did you have an emissions target that was active in the reporting year? Both absolute and intensity targets

C4.1a

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

<table>
<thead>
<tr>
<th>Target reference number</th>
<th>Year target was set</th>
<th>Target coverage</th>
<th>Scope(s) (or Scope 3 category)</th>
<th>Base year</th>
<th>Covered emissions in base year (metric tons CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abs 1</td>
<td>2014</td>
<td>Company-wide</td>
<td>Scope 1+2 (market-based)</td>
<td>2005</td>
<td>5923229</td>
</tr>
</tbody>
</table>

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

100
Target year
2020

Targeted reduction from base year (%)
35

Covered emissions in target year (metric tons CO2e) [auto-calculated]
3850098.85

Covered emissions in reporting year (metric tons CO2e)
3890726

% of target achieved [auto-calculated]
98.0402991100197

Target status in reporting year
Expired

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

Target ambition
<Not Applicable>

Please explain (including target coverage)
By the reporting year, we have achieved a reduction of 2,032,503 t-CO2.

Target reference number
Abs 2

Year target was set
2021

Target coverage
Company-wide

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

Base year
2013

Covered emissions in base year (metric tons CO2e)
5110000

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)
100

Target year
2030

Targeted reduction from base year (%)
30

Covered emissions in target year (metric tons CO2e) [auto-calculated]
3577000

Covered emissions in reporting year (metric tons CO2e)
3890726

% of target achieved [auto-calculated]
79.5351598173516

Target status in reporting year
New

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

Target ambition
<Not Applicable>

Please explain (including target coverage)
At the Management Briefing held in May 2021, we have announced to replace our GHG emissions reduction target from an intensity target to an absolute target. We newly set our long-term GHG reduction target to become carbon neutral by 2050 and to decrease GHG emissions by more than 30% compared to 2013 levels by 2030 as a milestone.
(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

Target reference number
Int 1

Year target was set
2019

Target coverage
Company-wide

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

Intensity metric
Other, please specify (Metric tons CO2e / Sales (hundred million YEN: ¥))

Base year
2013

Intensity figure in base year (metric tons CO2e per unit of activity)
269

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

Target year
2030

Targeted reduction from base year (%)
35

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]
174.85

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

% change anticipated in absolute Scope 3 emissions
0

Intensity figure in reporting year (metric tons CO2e per unit of activity)
184.74

% of target achieved [auto-calculated]
89.4954859267127

Target status in reporting year
Underway

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

Target ambition
<Not Applicable>

Please explain (including target coverage)
At the Management Briefing held in May 2021, we have announced to replace our GHG emissions reduction target from an intensity target to an absolute target. We newly set our long-term GHG reduction target to become carbon neutral by 2050 and to decrease GHG emissions by more than 30% compared to 2013 levels by 2030 as a milestone.

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

Other climate-related target(s)

(C4.2b) Provide details of any other climate-related targets, including methane reduction targets.

(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.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Number of initiatives</th>
<th>Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under investigation</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>To be implemented*</td>
<td>2</td>
<td>28266</td>
</tr>
<tr>
<td>Implementation commenced*</td>
<td>1</td>
<td>7388</td>
</tr>
<tr>
<td>Implemented*</td>
<td>3</td>
<td>96913</td>
</tr>
<tr>
<td>Not to be implemented</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Initiative category &amp; Initiative type</th>
<th>Estimated annual CO2e savings (metric tonnes CO2e)</th>
<th>Scope(s)</th>
<th>Voluntary/Mandatory</th>
<th>Annual monetary savings (unit currency – as specified in C0.4)</th>
<th>Investment required (unit currency – as specified in C0.4)</th>
<th>Payback period</th>
<th>Estimated lifetime of the initiative</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-carbon energy consumption</td>
<td>12752</td>
<td>Scope 2 (market-based)</td>
<td>Voluntary</td>
<td>0</td>
<td>0</td>
<td>No payback</td>
<td>&lt;1 year</td>
<td>Aqua Premium (28,788 MWh) : Electricity produced by hydro power.</td>
</tr>
<tr>
<td>Low-carbon energy generation</td>
<td>81061</td>
<td>Scope 1</td>
<td>Voluntary</td>
<td>0</td>
<td>0</td>
<td>No payback</td>
<td>&gt;30 years</td>
<td>We own 9 drop-type hydroelectric power plants. In 2020, a total of 182,982 MWh was generated. CO2 emission reduction was calculated by multiplying the generated power (MWh) by the actual emission factor of The Electric Power Council for a Low Carbon Society (0.443 t/MWh). 182,982 MWh * 0.443 t-CO2e/MWh = 81,061 t-CO2e.</td>
</tr>
<tr>
<td>Low-carbon energy consumption</td>
<td>3100</td>
<td>Scope 2 (location-based)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Solar PV</td>
</tr>
</tbody>
</table>
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
<1 year

Comment
In 2020, we purchased FIT non-fossil fuel energy certificates for 7,000 MWh. The reduction of CO2 emissions is calculated as follows: The amount purchased as FIT non-fossil fuel energy certificates (MWh) × the actual emission factor of The Electric Power Council for a Low Carbon Society (0.443 t/MWh). 7,000 MWh * 0.443 t-CO2e/MWh = 3,101 t-CO2e.

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

<table>
<thead>
<tr>
<th>Method</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal price on carbon</td>
<td></td>
</tr>
</tbody>
</table>

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

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

Level of aggregation
Company-wide

Description of product/Group of products
Global warming conscious products

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

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions
Addressing the Avoided Emissions Challenge - Chemicals sector

% revenue from low carbon product(s) in the reporting year
23.8

% of total portfolio value
<Not Applicable>

Asset classes/ product types
<Not Applicable>

Comment

C5. Emissions methodology

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

Scope 1

Base year start  
April 1, 2005

Base year end  
March 31, 2006

Base year emissions (metric tons CO2e)  
5,677,104

Comment

Scope 2 (location-based)

Base year start  
April 1, 2005

Base year end  
March 31, 2006

Base year emissions (metric tons CO2e)  
246,125

Comment

Scope 2 (market-based)

Base year start  

Base year end  

Base year emissions (metric tons CO2e)  

Comment

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

Japan Ministry of the Environment, Law Concerning the Promotion of the Measures to Cope with Global Warming, Superseded 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)  
2,987,729

Start date  
Not Applicable

End date  
Not Applicable

Comment

C6.2

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

Row 1

Scope 2, location-based  
We are reporting a Scope 2, location-based figure

Scope 2, market-based  
We are reporting a Scope 2, market-based figure

Comment

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

<table>
<thead>
<tr>
<th>Reporting year</th>
<th>Scope 2, location-based</th>
<th>918572</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Scope 2, market-based (if applicable)</td>
<td>902998</td>
</tr>
<tr>
<td>Start date</td>
<td>&lt;Not Applicable&gt;</td>
<td></td>
</tr>
<tr>
<td>End date</td>
<td>&lt;Not Applicable&gt;</td>
<td></td>
</tr>
<tr>
<td>Comment</td>
<td>A location-based figure for Asahi Kasei Corporation and domestic subsidiaries is calculated by the most recent actual emissions coefficient announced by the Electric Power Council for a Low Carbon Society (ELCS), while that for overseas subsidiaries is done by the most recent emissions coefficient according to country, as published by the International Energy Agency (IEA).</td>
<td></td>
</tr>
</tbody>
</table>

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

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.

<table>
<thead>
<tr>
<th>Source</th>
<th>Relevance of Scope 1 emissions from this source</th>
<th>Relevance of location-based Scope 2 emissions from this source</th>
<th>Relevance of market-based Scope 2 emissions from this source (if applicable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-production site overseas (Sales office, office, branch office, headquarters)</td>
<td>Emissions are not relevant</td>
<td>Emissions are not relevant</td>
<td>Emissions are not relevant</td>
</tr>
</tbody>
</table>

Explain why this source is excluded
The amount of energy consumption of air conditioning and lighting are negligible compared to chemical production sites.

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

<table>
<thead>
<tr>
<th>Purchased goods and services</th>
<th>Evaluation status</th>
<th>Metric tonnes CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Relevant, calculated</td>
<td>4140070</td>
</tr>
</tbody>
</table>

Emissions calculation methodology
Activity data: Purchased volumes of materials, Emission factor: t-CO2/volume (Set for each type of material) Data Quality: Activity data (very good), Emission factor (Good). "Emission intensity unit database (Ver.2.5)" was used as the emission factor calculated according to the calculation method of "Ministry of the Environment's basic guidelines for calculation of greenhouse gas emissions through supply chain (ver2.3)".

Percentage of emissions calculated using data obtained from suppliers or value chain partners
40.74

Please explain
Capital goods

**Evaluation status**
Relevant, calculated

**Metric tonnes CO2e**
361102

**Emissions calculation methodology**
Activity data: Purchased volumes of materials, Emission factor: t-CO2/volume (Set for each type of material) Data Quality: Activity data (very good), Emission factor (Good).

* Emission intensity unit database (Ver.2.5) * was used as the emission factor calculated according to the calculation method of "Ministry of the Environment's basic guidelines for calculation of greenhouse gas emissions through supply chain (ver2.3)".

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**
3.55

Please explain

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

**Evaluation status**
Relevant, calculated

**Metric tonnes CO2e**
207876

**Emissions calculation methodology**
Activity data: Purchased volumes of materials, Emission factor: t-CO2/volume (Set for each type of material) Data Quality: Activity data (very good), Emission factor (Good).

* Emission intensity unit database (Ver.2.5) * was used as the emission factor calculated according to the calculation method of "Ministry of the Environment's basic guidelines for calculation of greenhouse gas emissions through supply chain (ver2.3)".

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**
2.05

Please explain

Upstream transportation and distribution

**Evaluation status**
Relevant, calculated

**Metric tonnes CO2e**
250120

**Emissions calculation methodology**
Activity data: Purchased volumes of materials, Emission factor: t-CO2/volume (Set for each type of material) Data Quality: Activity data (very good), Emission factor (Good).

* Emission intensity unit database (Ver.2.5) * was used as the emission factor calculated according to the calculation method of "Ministry of the Environment's basic guidelines for calculation of greenhouse gas emissions through supply chain (ver2.3)".

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**
2.46

Please explain

Waste generated in operations

**Evaluation status**
Relevant, calculated

**Metric tonnes CO2e**
425

**Emissions calculation methodology**
Activity data: Purchased volumes of materials, Emission factor: t-CO2/volume (Set for each type of material) Data Quality: Activity data (very good), Emission factor (Good).

* Emission intensity unit database (Ver.2.5) * was used as the emission factor calculated according to the calculation method of "Ministry of the Environment's basic guidelines for calculation of greenhouse gas emissions through supply chain (ver2.3)".

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

Please explain

Business travel

**Evaluation status**
Relevant, calculated

**Metric tonnes CO2e**
4599

**Emissions calculation methodology**
Activity data: Purchased volumes of materials, Emission factor: t-CO2/volume (Set for each type of material) Data Quality: Activity data (very good), Emission factor (Good).

* Emission intensity unit database (Ver.2.5) * was used as the emission factor calculated according to the calculation method of "Ministry of the Environment's basic guidelines for calculation of greenhouse gas emissions through supply chain (ver2.3)".

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**
0.05

Please explain
Employee commuting

Evaluation status
Relevant, calculated

Metric tonnes CO2e
29465

Emissions calculation methodology
Activity data: Purchased volumes of materials, Emission factor: t-CO2/volume (Set for each type of material) Data Quality: Activity data (very good), Emission factor (Good).
* Emission intensity unit database (Ver.2.5) * was used as the emission factor calculated according to the calculation method of * Ministry of the Environment’s basic guidelines for calculation of greenhouse gas emissions through supply chain (ver2.3) *.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0.29

Please explain

Upstream leased assets

Evaluation status
Relevant, calculated

Metric tonnes CO2e
0

Emissions calculation methodology
Activity data: Purchased volumes of materials, Emission factor: t-CO2/volume (Set for each type of material) Data Quality: Activity data (very good), Emission factor (Good).
* Emission intensity unit database (Ver.2.5) * was used as the emission factor calculated according to the calculation method of * Ministry of the Environment’s basic guidelines for calculation of greenhouse gas emissions through supply chain (ver2.3) *.

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

Please explain

Downstream transportation and distribution

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
The emissions of downstream transportation depends on final products, which includes much of uncertainty.

Processing of sold products

Evaluation status
Relevant, not yet calculated

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
The emissions of downstream transportation depends on final products, which includes much of uncertainty.

Use of sold products

Evaluation status
Relevant, calculated

Metric tonnes CO2e
652824

Emissions calculation methodology
Activity data: Purchased volumes of materials, Emission factor: t-CO2/volume (Set for each type of material) Data Quality: Activity data (very good), Emission factor (Good).
* Emission intensity unit database (Ver.2.5) * was used as the emission factor calculated according to the calculation method of * Ministry of the Environment’s basic guidelines for calculation of greenhouse gas emissions through supply chain (ver2.3) *.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
6.42

Please explain
End of life treatment of sold products

Evaluation status
Relevant, calculated

Metric tonnes CO2e
4516740

Emissions calculation methodology
Activity data: Purchased volumes of materials, Emission factor: t-CO2/volume (Set for each type of material) Data Quality: Activity data (very good), Emission factor (Good). * Emission intensity unit database (Ver.2.5) * was used as the emission factor calculated according to the calculation method of * Ministry of the Environment's basic guidelines for calculation of greenhouse gas emissions through supply chain (ver2.3) *.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
44.44

Please explain

Downstream leased assets

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Asahi Kasei does not have leasing operations. Reports in this category are considered to be unnecessary.

Franchises

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Asahi Kasei does not franchise shops or systems.

Investments

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Asahi Kasei does not have applicable activity.

Other (upstream)

Evaluation status
Not evaluated

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Other (downstream)

Evaluation status
Not evaluated

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain

C6.7

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

C6.7a

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

<table>
<thead>
<tr>
<th>CO2 emissions from biogenic carbon (metric tons CO2)</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Row 1</td>
<td>17754</td>
</tr>
</tbody>
</table>

C6.10

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

Intensity figure
0.0000018474

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)
3890726

Metric denominator
unit total revenue

Metric denominator: Unit total
2106100000000

Scope 2 figure used
Market-based

% change from previous year
0.39

Direction of change
Decreased

Reason for change
We have improved our emissions a little as we have been continuing energy saving activities, such as optimizing operation condition of diesel electricity generator and steam boiler. In addition, we have started to purchase hydropower electricity.

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).

<table>
<thead>
<tr>
<th>Greenhouse gas</th>
<th>Scope 1 emissions (metric tons of CO2e)</th>
<th>GWP Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO2</td>
<td>2576136</td>
<td>IPCC Fifth Assessment Report (AR5 – 100 year)</td>
</tr>
<tr>
<td>CH4</td>
<td>901</td>
<td>IPCC Fifth Assessment Report (AR5 – 100 year)</td>
</tr>
<tr>
<td>N2O</td>
<td>293878</td>
<td>IPCC Fifth Assessment Report (AR5 – 100 year)</td>
</tr>
<tr>
<td>HFCs</td>
<td>33997</td>
<td>IPCC Fifth Assessment Report (AR5 – 100 year)</td>
</tr>
<tr>
<td>PFCs</td>
<td>75672</td>
<td>IPCC Fifth Assessment Report (AR5 – 100 year)</td>
</tr>
<tr>
<td>SF6</td>
<td>6896</td>
<td>IPCC Fifth Assessment Report (AR5 – 100 year)</td>
</tr>
<tr>
<td>NF3</td>
<td>248</td>
<td>IPCC Fifth Assessment Report (AR5 – 100 year)</td>
</tr>
</tbody>
</table>

C7.2

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

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Scope 1 emissions (metric tons CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>2486406</td>
</tr>
<tr>
<td>Germany</td>
<td>2518</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>344289</td>
</tr>
<tr>
<td>Singapore</td>
<td>40811</td>
</tr>
<tr>
<td>Thailand</td>
<td>7408</td>
</tr>
<tr>
<td>Taiwan, Greater China</td>
<td>5246</td>
</tr>
<tr>
<td>China</td>
<td>53003</td>
</tr>
<tr>
<td>United States of America</td>
<td>36758</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>83</td>
</tr>
<tr>
<td>France</td>
<td>7272</td>
</tr>
<tr>
<td>India</td>
<td>3840</td>
</tr>
<tr>
<td>Sweden</td>
<td>0</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Business division</th>
<th>Scope 1 emissions (metric ton CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production and non-production segments in Japan</td>
<td>2486406</td>
</tr>
<tr>
<td>Production segments overseas</td>
<td>501323</td>
</tr>
</tbody>
</table>

C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization’s total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

<table>
<thead>
<tr>
<th>Production activity</th>
<th>Gross Scope 1 emissions, metric tons CO2e</th>
<th>Net Scope 1 emissions, metric tons CO2e</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cement production activities</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td></td>
</tr>
<tr>
<td>Chemicals production activities</td>
<td>1472453</td>
<td>&lt;Not Applicable&gt;</td>
<td>No credits purchased.</td>
</tr>
<tr>
<td>Coal production activities</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td></td>
</tr>
<tr>
<td>Electric utility activities</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td></td>
</tr>
<tr>
<td>Metals and mining production activities</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td></td>
</tr>
<tr>
<td>Oil and gas production activities (upstream)</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td></td>
</tr>
<tr>
<td>Oil and gas production activities (midstream)</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td></td>
</tr>
<tr>
<td>Oil and gas production activities (downstream)</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td></td>
</tr>
<tr>
<td>Steel production activities</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td></td>
</tr>
<tr>
<td>Transport OEM activities</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td></td>
</tr>
<tr>
<td>Transport services activities</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td></td>
</tr>
</tbody>
</table>
(C7.5) Break down your total gross global Scope 2 emissions by country/region.

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Scope 2, location-based (metric tons CO2e)</th>
<th>Scope 2, market-based (metric tons CO2e)</th>
<th>Purchased and consumed electricity, heat, steam or cooling (MWh)</th>
<th>Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>390146</td>
<td>1207158</td>
<td>28788</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>29309</td>
<td>92959</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>60015</td>
<td>112641</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Singapore</td>
<td>100809</td>
<td>389052</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Thailand</td>
<td>84348</td>
<td>190051</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Taiwan, Greater China</td>
<td>16819</td>
<td>112641</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>17737</td>
<td>207406</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>United States of America</td>
<td>85264</td>
<td>13113</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Viet Nam</td>
<td>595</td>
<td>21038</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>1153</td>
<td>21038</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>7175</td>
<td>9605</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Sweden</td>
<td>28</td>
<td>2134</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

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

By business division

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

<table>
<thead>
<tr>
<th>Business division</th>
<th>Scope 2, location-based (metric tons CO2e)</th>
<th>Scope 2, market-based (metric tons CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production and non-production segments in Japan</td>
<td>390146</td>
<td></td>
</tr>
<tr>
<td>Production segments overseas</td>
<td>512852</td>
<td></td>
</tr>
</tbody>
</table>

(C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7) Break down your organization’s total gross global Scope 2 emissions by sector production activity in metric tons CO2e.

<table>
<thead>
<tr>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cement production activities</td>
</tr>
<tr>
<td>Chemicals production activities</td>
</tr>
<tr>
<td>Coal production activities</td>
</tr>
<tr>
<td>Metals and mining production activities</td>
</tr>
<tr>
<td>Oil and gas production activities (upstream)</td>
</tr>
<tr>
<td>Oil and gas production activities (midstream)</td>
</tr>
<tr>
<td>Oil and gas production activities (downstream)</td>
</tr>
<tr>
<td>Steel production activities</td>
</tr>
<tr>
<td>Transport OEM activities</td>
</tr>
<tr>
<td>Transport services activities</td>
</tr>
</tbody>
</table>

C-CH7.8
(C7.8) Disclose the percentage of your organization’s Scope 3, Category 1 emissions by purchased chemical feedstock.

<table>
<thead>
<tr>
<th>Purchased feedstock</th>
<th>Percentage of Scope 3, Category 1 tCO2e from purchased feedstock</th>
<th>Explain calculation methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Value Chemicals (Steam cracking)</td>
<td>12.25</td>
<td>We use “CO2 converted equivalent unit basic database for Carbon Footprint System trial project” of the Japan Environmental Management Association of Industry. In this database, CO2 emission factors of raw materials disclosed by industrial associations of each material industry group in Japan, including Ministry of Economy, Trade and Industry. Input-output table is covered. We calculate the emission by multiplying CO2 intensity of this database by usage amount.</td>
</tr>
<tr>
<td>Ammonia</td>
<td>6.73</td>
<td>We use “National Institute for Environmental Studies Research Institute for Environmental Impact of Environment Impact (SEID) based on the input-output table”. In this database, CO2 emission factor per purchase price calculated using the input-output table is recorded. We calculate the figure by multiplying CO2 intensity of this database by raw material purchase price.</td>
</tr>
<tr>
<td>Aromatics extraction</td>
<td>7.36</td>
<td>We use “National Institute for Environmental Studies Research Institute for Environmental Impact of Environment Impact (SEID) based on the input-output table”. In this database, CO2 emission factor per purchase price calculated using the input-output table is recorded. We calculate the figure by multiplying CO2 intensity of this database by raw material purchase price.</td>
</tr>
<tr>
<td>Methanol</td>
<td>3.53</td>
<td>We use “National Institute for Environmental Studies Research Institute for Environmental Impact of Environment Impact (SEID) based on the input-output table”. In this database, CO2 emission factor per purchase price calculated using the input-output table is recorded. We calculate the figure by multiplying CO2 intensity of this database by raw material purchase price.</td>
</tr>
<tr>
<td>Propylene (FCC)</td>
<td>26.89</td>
<td>We use “National Institute for Environmental Studies Research Institute for Environmental Impact of Environment Impact (SEID) based on the input-output table”. In this database, CO2 emission factor per purchase price calculated using the input-output table is recorded. We calculate the figure by multiplying CO2 intensity of this database by raw material purchase price.</td>
</tr>
<tr>
<td>Butadiene (C4 asp.)</td>
<td>1.71</td>
<td>We use “CO2 converted equivalent unit basic database for Carbon Footprint System trial project” of the Japan Environmental Management Association of Industry. In this database, CO2 emission factors of raw materials disclosed by industrial associations of each material industry group in Japan, including Ministry of Economy, Trade and Industry. Input-output table is covered. We calculate the emission by multiplying CO2 intensity of this database by usage amount.</td>
</tr>
<tr>
<td>Polymers</td>
<td>10.66</td>
<td>We use “CO2 converted equivalent unit basic database for Carbon Footprint System trial project” of the Japan Environmental Management Association of Industry. In this database, CO2 emission factors of raw materials disclosed by industrial associations of each material industry group in Japan, including Ministry of Economy, Trade and Industry. Input-output table is covered. We calculate the emission by multiplying CO2 intensity of this database by usage amount.</td>
</tr>
<tr>
<td>Specialty chemicals</td>
<td>1.98</td>
<td>We use “National Institute for Environmental Studies Research Institute for Environmental Impact of Environment Impact (SEID) based on the input-output table”. In this database, CO2 emission factor per purchase price calculated using the input-output table is recorded. We calculate the figure by multiplying CO2 intensity of this database by raw material purchase price.</td>
</tr>
<tr>
<td>Other base chemicals</td>
<td>1.66</td>
<td>We use “CO2 converted equivalent unit basic database for Carbon Footprint System trial project” of the Japan Environmental Management Association of Industry. In this database, CO2 emission factors of raw materials disclosed by industrial associations of each material industry group in Japan, including Ministry of Economy, Trade and Industry. Input-output table is covered. We calculate the emission by multiplying CO2 intensity of this database by usage amount.</td>
</tr>
<tr>
<td>Other base chemicals</td>
<td>0.32</td>
<td>We use “CO2 converted equivalent unit basic database for Carbon Footprint System trial project” of the Japan Environmental Management Association of Industry. In this database, CO2 emission factors of raw materials disclosed by industrial associations of each material industry group in Japan, including Ministry of Economy, Trade and Industry. Input-output table is covered. We calculate the emission by multiplying CO2 intensity of this database by usage amount.</td>
</tr>
</tbody>
</table>

C7.8a

(C7.8a) Disclose sales of products that are greenhouse gases.

<table>
<thead>
<tr>
<th></th>
<th>Sales, metric tons</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon dioxide (CO2)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Methane (CH4)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Nitrous oxide (N2O)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Hydrofluorocarbons (HFC)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Perfluorocarbons (PFC)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Sulphur hexafluoride (SF6)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Nitrogen trifluoride (NF3)</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Change in emissions (metric tons CO2e)</th>
<th>Direction of change</th>
<th>Emissions value (percentage)</th>
<th>Please explain calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in renewable energy consumption</td>
<td>Decreased</td>
<td>0.33</td>
<td>Due to purchase of hydroelectric power produced by TEPCO Energy Partner Incorporated, we reduced our carbon emissions. (12,752 t-CO2e) Last year’s scope 1+2 emissions Scope1: 2,987,729 t-CO2e, Scope2: 902,998 t-CO2e, Scope 1+2 3,890,727 t-CO2e in total. (12,752/3,890,727)*100=0.33%.</td>
</tr>
<tr>
<td>Other emissions reduction activities</td>
<td>Decreased</td>
<td>0.18</td>
<td>6,855 t-CO2e was reduced by the following 2 measures. - Asahi Kasei Construction Materials Corp., Hozumi Plant Heavy oil boilers were replaced with gas (LNG) boilers. - Asahi Kasei Corp., Kawasaki Plant The reduction of steam through stable operation of monomer production process Last year’s scope 1+2 emissions Scope1: 2,987,729 t-CO2e, Scope2: 902,998 t-CO2e, Scope 1+2 3,890,727 t-CO2e in total. (6,855/3,890,727)*100=0.18%.</td>
</tr>
<tr>
<td>Divestment</td>
<td>&lt;Not Applicable&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acquisitions</td>
<td>&lt;Not Applicable&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mergers</td>
<td>&lt;Not Applicable&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in output</td>
<td>Decreased</td>
<td>5.39</td>
<td>Due to the COVID-19 pandemic, the production output of the following company and manufacturing plant has significantly decreased. Consequently, CO2 emissions have also largely decreased. (209,550 t-CO2e) -Nobeoka: the production output of the Benberg plant has been reduced. -South Korea: the production output of the Tong Suh Petrochemical Corp., Ltd. has also resulted in the significant reduction of CO2 emissions. Last year’s scope 1+2 emissions Scope1: 2,987,729 t-CO2e, Scope2: 902,998 t-CO2e, Scope 1+2 3,890,727 t-CO2e in total. (209,550/3,890,727)*100=5.39%.</td>
</tr>
<tr>
<td>Change in methodology</td>
<td>&lt;Not Applicable&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in boundary</td>
<td>Decreased</td>
<td>0.53</td>
<td>Closing of Eltas Plant, Corydon Plant, and Kyuasa Co., Ltd resulted in the reduction of approximately 20,683 t-CO2e. Last year’s scope 1+2 emissions Scope1: 2,987,729 t-CO2e, Scope2: 902,998 t-CO2e, Scope 1+2 3,890,727 t-CO2e in total. (20,683/3,890,727)*100=0.53%.</td>
</tr>
<tr>
<td>Change in physical operating conditions</td>
<td>Increased</td>
<td>4.25</td>
<td>Due to a problem with equipment at some plant, GHG emissions have increased in comparison to the last year (+165,499 t-CO2e). The equipment has already been repaired. GHG emissions in 2021 are expected to improve by about the same amount. Last year’s scope 1+2 emissions Scope1: 2,987,729 t-CO2e, Scope2: 902,998 t-CO2e, Scope 1+2 3,890,727 t-CO2e in total. (165,499/3,890,727)*100=4.25%</td>
</tr>
<tr>
<td>Unidentified</td>
<td>&lt;Not Applicable&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>&lt;Not Applicable&gt;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Indicate whether your organization undertook this energy-related activity in the reporting year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption of fuel (excluding feedstocks)</td>
<td>Yes</td>
</tr>
<tr>
<td>Consumption of purchased or acquired electricity</td>
<td>Yes</td>
</tr>
<tr>
<td>Consumption of purchased or acquired heat</td>
<td>No</td>
</tr>
<tr>
<td>Consumption of purchased or acquired steam</td>
<td>Yes</td>
</tr>
<tr>
<td>Consumption of purchased or acquired cooling</td>
<td>No</td>
</tr>
<tr>
<td>Generation of electricity, heat, steam, or cooling</td>
<td>Yes</td>
</tr>
</tbody>
</table>
C8.2a

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

<table>
<thead>
<tr>
<th>Consumption of fuel (excluding feedstock)</th>
<th>Heating value (HHV)</th>
<th>MWh from renewable sources</th>
<th>MWh from non-renewable sources</th>
<th>Total (renewable and non-renewable) MWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption of purchased or acquired electricity</td>
<td>&lt;Not Applicable&gt;</td>
<td>28788</td>
<td>3028275</td>
<td>3057063</td>
</tr>
<tr>
<td>Consumption of purchased or acquired steam</td>
<td>&lt;Not Applicable&gt;</td>
<td>906768</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
</tr>
<tr>
<td>Consumption of self-generated non-fuel renewable energy</td>
<td>&lt;Not Applicable&gt;</td>
<td>182982</td>
<td>&lt;Not Applicable&gt;</td>
<td>182982</td>
</tr>
<tr>
<td>Total energy consumption</td>
<td>&lt;Not Applicable&gt;</td>
<td>580060</td>
<td>11540737</td>
<td>12048797</td>
</tr>
</tbody>
</table>

C-CH8.2a

(C-CH8.2a) Report your organization’s energy consumption totals (excluding feedstocks) for chemical production activities in MWh.

<table>
<thead>
<tr>
<th>Consumption of fuel (excluding feedstock)</th>
<th>Heating value (HHV)</th>
<th>Total MWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption of purchased or acquired electricity</td>
<td>&lt;Not Applicable&gt;</td>
<td>28788</td>
</tr>
<tr>
<td>Consumption of purchased or acquired steam</td>
<td>&lt;Not Applicable&gt;</td>
<td>906768</td>
</tr>
<tr>
<td>Consumption of self-generated non-fuel renewable energy</td>
<td>&lt;Not Applicable&gt;</td>
<td>182982</td>
</tr>
<tr>
<td>Total energy consumption</td>
<td>&lt;Not Applicable&gt;</td>
<td>2517343</td>
</tr>
</tbody>
</table>

C8.2b

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

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

C8.2c

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

**Fuels (excluding feedstocks)**

- **Bituminous Coal**

  **Heating value**
  
  HHV (higher heating value)

  **Total fuel MWh consumed by the organization**
  
  2669827

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

  **MWh fuel consumed for self-generation of heat**
  
  0

  **MWh fuel consumed for self-generation of steam**
  
  0

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

  **MWh fuel consumed for self-cogeneration or self-trigeneration**
  
  2669827

  **Emission factor**
  
  2.33

  **Unit**
  
  metric tons CO2e per metric ton
Emissions factor source
Japan Ministry of the Environment, Law Concerning the Promotion of the Measures to Cope with Global Warming, Superseded by Revision of the Act on Promotion of Global Warming Countermeasures (2005 Amendment)

Comment

Fuels (excluding feedstocks)
Liquefied Natural Gas (LNG)

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
1522478

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

MWh fuel consumed for self-generation of heat
152248

MWh fuel consumed for self-generation of steam
456743

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

MWh fuel consumed for self-cogeneration or self-trigeneration
913487

Emission factor
2.7

Unit
metric tons CO2e per metric ton

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

Comment

Fuels (excluding feedstocks)
Residual Fuel Oil

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
879709

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

MWh fuel consumed for self-generation of heat
87971

MWh fuel consumed for self-generation of steam
263913

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

MWh fuel consumed for self-cogeneration or self-trigeneration
527825

Emission factor
3

Unit
metric tons CO2e per liter

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

Comment

Fuels (excluding feedstocks)
Other, please specify

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
2385307

MWh fuel consumed for self-generation of electricity
<Not Applicable>
MWh fuel consumed for self-generation of heat
238531
MWh fuel consumed for self-generation of steam
715592
MWh fuel consumed for self-generation of cooling
<Not Applicable>
MWh fuel consumed for self-cogeneration or self-trigeneration
1431184

Emission factor
3.36

Unit
metric tons CO2e per metric ton

Emissions factor source
The actual emission factor for product gas is provided here. Since the variability depends on each factory and/or the operation conditions, its representative value is provided.

Comment

C8.2d

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

<table>
<thead>
<tr>
<th>Total Gross generation (MWh)</th>
<th>Generation that is consumed by the organization (MWh)</th>
<th>Gross generation from renewable sources (MWh)</th>
<th>Generation from renewable sources that is consumed by the organization (MWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity 1229438</td>
<td>0</td>
<td>182982</td>
<td>182982</td>
</tr>
<tr>
<td>Heat 0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Steam 0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cooling 0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

C-CH8.2d

(C-CH8.2d) Provide details on electricity, heat, steam, and cooling your organization has generated and consumed for chemical production activities.

<table>
<thead>
<tr>
<th>Total gross generation (MWh) inside chemicals sector boundary</th>
<th>Generation that is consumed (MWh) inside chemicals sector boundary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity 1229438</td>
<td>1229438</td>
</tr>
<tr>
<td>Heat 0</td>
<td>0</td>
</tr>
<tr>
<td>Steam 0</td>
<td>0</td>
</tr>
<tr>
<td>Cooling 0</td>
<td>0</td>
</tr>
</tbody>
</table>

C8.2e

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

Sourcing method
Power purchase agreement (PPA) with a grid-connected generator with energy attribute certificates

Low-carbon technology type
Hydropower

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

MWh consumed accounted for at a zero emission factor
28788

Comment
Aqua premium supplied by Tokyo Electricity Energy Partner

C-CH8.3

(C-CH8.3) Does your organization consume fuels as feedstocks for chemical production activities?
Yes
C-CH8.3a

(C-CH8.3a) Disclose details on your organization’s consumption of fuels as feedstocks for chemical production activities.

Fuels used as feedstocks
Other, please specify (Feedstock here are not applicable to us.)

Total consumption
0

Total consumption unit
metric tons

Inherent carbon dioxide emission factor of feedstock, metric tons CO2 per consumption unit
0

Heating value of feedstock, MWh per consumption unit
0

Heating value
HHV

Comment

C-CH8.3b

(C-CH8.3b) State the percentage, by mass, of primary resource from which your chemical feedstocks derive.

<table>
<thead>
<tr>
<th>Percentage of total chemical feedstock (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil</td>
</tr>
<tr>
<td>Natural Gas</td>
</tr>
<tr>
<td>Coal</td>
</tr>
<tr>
<td>Biomass</td>
</tr>
<tr>
<td>Waste (non-biomass)</td>
</tr>
<tr>
<td>Fossil fuel (where coal, gas, oil cannot be distinguished)</td>
</tr>
<tr>
<td>Unknown source or unable to disaggregate</td>
</tr>
</tbody>
</table>

C9. Additional metrics

C9.1

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

C-CH9.3a

(C-CH9.3a) Provide details on your organization’s chemical products.

Output product
Other base chemicals

Production (metric tons)
624000

Capacity (metric tons)
749000

Direct emissions intensity (metric tons CO2e per metric ton of product)
0.785

Electricity intensity (MWh per metric ton of product)
0.24

Steam intensity (MWh per metric ton of product)
0.675

Steam/heat recovered (MWh per metric ton of product)
0.394

Comment
We disclose data about a basic chemical. The basic unit data is exemplified with one of the bases having multiple bases in the world as a representative. Since it is different for each base such as manufacturing method and catalyst, it is meaningless to summarize everything, which inhibits our strategy.
Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

<table>
<thead>
<tr>
<th>Investment in low-carbon R&amp;D</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Row 1</td>
<td>Yes</td>
</tr>
</tbody>
</table>

(C-CH9.6a) Provide details of your organization’s investments in low-carbon R&D for chemical production activities over the last three years.

<table>
<thead>
<tr>
<th>Technology area</th>
<th>Stage of development in the reporting year</th>
<th>Average % of total R&amp;D investment over the last 3 years</th>
<th>R&amp;D investment figure in the reporting year (optional)</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unable to disaggregate by technology area</td>
<td>&lt;Not Applicable&gt;</td>
<td>≤20%</td>
<td></td>
<td>Long-term investment totalled accounts for 670 billion yen that we disclosed at CT2018. Among them, the total amount of publicized individual amounts for Low-Carbon investment is 110 billion yen (Because the number of digits of the system is insufficient and cannot be entered, it is described as 99,999,999,999). Low-Carbon investment targets are below. · Enhancement of separator capacity for LIB · Rubber capacity enhancement for eco tires · Acquisition of CO2 sensor module company · Acquisition of textile companies for automobiles. There is no plan to disclose the amount of all projects. The amount of each year has not been disclosed. Under the new medium-term business management plan “Cs + for Tomorrow 2021”, which started in 2019, it is planned to carry out capital investment including low-carbon one of about 800 billion yen or more in total for three years.</td>
</tr>
</tbody>
</table>

(C-CN9.6a/C-RE9.6a) Provide details of your organization’s investments in low-carbon R&D for real estate and construction activities over the last three years.

Technology area
Please select

Stage of development in the reporting year
<Not Applicable>

Average % of total R&D investment over the last 3 years
Please select

R&D investment figure in the reporting year (optional)

Comment

C10. Verification

C10.1

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

<table>
<thead>
<tr>
<th>Verification/assurance status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope 1</td>
</tr>
<tr>
<td>Scope 2 (location-based or market-based)</td>
</tr>
<tr>
<td>Scope 3</td>
</tr>
</tbody>
</table>

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
Underway but not complete for reporting year – previous statement of process attached

Type of verification or assurance
Limited assurance

Attach the statement
Asahi KASEI_10.1a,b.pdf

Page/section reference
1,2/a/b

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
Underway but not complete for reporting year – previous statement of process attached

Type of verification or assurance
Limited assurance

Attach the statement
Asahi KASEI_10.1a,b.pdf

Page/section reference
1,2/a/b

Relevant standard
ISAE 3410

Proportion of reported emissions verified (%)
100

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

**Scope 3 category**
Scope 3: Purchased goods and services

**Verification or assurance cycle in place**
Annual process

**Status in the current reporting year**
Underway but not complete for reporting year – previous statement of process attached

**Type of verification or assurance**
Limited assurance

Attach the statement
Asahi KASEI_10.1a,b.pdf

**Relevant section reference**
1,2/all

**Proportion of reported emissions verified (%)**
100

---

**Scope 3 category**
Scope 3: Use of sold products

**Verification or assurance cycle in place**
Annual process

**Status in the current reporting year**
Underway but not complete for reporting year – previous statement of process attached

**Type of verification or assurance**
Limited assurance

Attach the statement
Asahi KASEI_10.1a,b.pdf

**Relevant section reference**
1,2/all

**Proportion of reported emissions verified (%)**
100

---

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

**Verification or assurance cycle in place**
Annual process

**Status in the current reporting year**
Underway but not complete for reporting year – previous statement of process attached

**Type of verification or assurance**
Limited assurance

Attach the statement
Asahi KASEI_10.1a,b.pdf

**Relevant section reference**
1,2/all

**Proportion of reported emissions verified (%)**
100

---

(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?
No, but we are actively considering verifying within the next two years

---

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.

Japan carbon tax
Korea ETS

C11.1b

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

Korea ETS

| % of Scope 1 emissions covered by the ETS | 13.1 |
| % of Scope 2 emissions covered by the ETS | 0 |
| Period start date | January 1 2020 |
| Period end date | December 31 2020 |
| Allowances allocated | 343969 |
| Allowances purchased | 48000 |
| Verified Scope 1 emissions in metric tons CO2e | 391471 |
| Verified Scope 2 emissions in metric tons CO2e | 0 |
| Details of ownership | Facilities we own and operate |
| Comment | Allowances allocated 343,969 t-CO2e = 343,032 t-CO2e (Korea ETS Allowances allocated for 2020) + 937 t-CO2e (Korea ETS Allowances carried over from 2019) |

C11.1c

(C11.1c) Complete the following table for each of the tax systems you are regulated by.

Japan carbon tax

| Period start date | October 1 2012 |
| Period end date | December 31 2021 |
| % of total Scope 1 emissions covered by tax | 29.1 |
| Total cost of tax paid | 250000000 |
| Comment | We accounted for global warming countermeasure tax. |

C11.1d

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

In all businesses, energy consumption and CO2 emissions tend to increase with the expansion of production volume in the future. Improving productivity, the energy intensity and the ratio of renewable energy use, we set up such targets by business and factory, and are taking a strategy to reduce the carbon tax burden.
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
- Change internal behavior
- Drive energy efficiency
- Drive low-carbon investment
- Identify and seize low-carbon opportunities

GHG Scope
- Scope 1
- Scope 2

Application
It is set for each business headquarters and business company, and is used for decisions on capital investment.

Actual price(s) used (Currency / metric ton)
10000

Variance of price(s) used

Type of internal carbon price
- Shadow price

Impact & implication
We used to use oil-fuel boiler for the chemical plant in Miyazaki which must be replaced by the new one. It was rational to be replaced by the same type of oil-fuel boiler in the sense of economy, but assuming of CO2 cost based on the internal carbon pricing, we have decided to replace it by LNG-fuel boiler.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?
- Yes, our suppliers
- Yes, other partners in the value chain
(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
71

% total procurement spend (direct and indirect)
82

% of supplier-related Scope 3 emissions as reported in C6.5
100

**Rationale for the coverage of your engagement**
We send out a CSR questionnaire to our major suppliers selected among those suppliers from which we had purchased raw materials in the previous two years. Specifically, we selected top 71% suppliers by purchase amount because high volume suppliers play significant roles in dealing with climate-related risks on supply chain. We believe this 82% coverage is reasonable from a stand point of the Asahi Kasei Group's responsibility and risks. We are deliberately thinking about further expanding the scope since we believe additional costs and burden on our suppliers will not justify that.

**Impact of engagement, including measures of success**
Impact of engagement; Our purchasing division sends questionnaire to suppliers as a supplier assessment and encourage them to make improvement regarding CSR procurement including climate change issues. The Asahi Kasei Group is considering more formally requiring suppliers to meet a certain level of CSR performance standards by including it in the terms of conditions. This has already been communicated to our suppliers. Measure of success; Asahi Kasei group already set up "Purchasing Policy" and "Purchasing mission statement". We sent CSR questionnaires, including environment and energy saving, to suppliers and asked them to cooperate with CSR procurement. We tabulate the results of questionnaires and analyze the number and proportion of companies that have clear environmental policies and systems to promote environmental conscious activities. We consider increase in those numbers as our success of supplier responses to our CSR policy including climate-related issues.

**Comment**

---

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

i) A clear explanation of who other partners in the value chain constitutes: When we collaborate, we are prioritizing the following areas: 1) large market, 2) market growth can be expected in the near future, 3) regulations will be introduced or tightened, and 4) high interest of consumer. Especially, regarding climate-related engagement, we work with a variety of organizations such as universities and research institutes. ii) A case study of your climate-related engagement strategy with other partners in the value chain: A case in point is h2herten which is the Hydrogen Competence Center in Herten, Germany. In 2018, Asahi Kasei Europe started a demonstration project to produce hydrogen from simulated wind energy in the Hydrogen City of Herten in the German state of North Rhine-Westphalia. The project will transform simulated electric power from wind energy into hydrogen and contribute to the development of a green hydrogen production system. Hydrogen is a focus of increasing interest on recent years, not only in the field of energy storage (Power-to-Gas) but also as an important component of alternative fuels for automobiles (Power-to-Fuel). Europe in general and Germany in particular, with its ambitious goals for CO2 reduction, its drop-out of nuclear energy by 2022 and its high share of electric power supply from fluctuating renewable energy sources, have a high need for reliable power storage technologies. The joint project together with the Hydrogen Competence Center h2herten will contribute to the development of an electrolysis system to produce green hydrogen on a large scale.

---

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

**Trade associations**

---

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

Yes

---

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

**Trade association**
Japan Chemical Industry Association

Is your position on climate change consistent with theirs?
Consistent

**Please explain the trade association’s position**
Formulated by the Japan Chemical Industry Association, the Commitment to a Low Carbon Society has been integrated into the Commitment to a Low Carbon Society prepared by Keidanren, the trade association representing Japan’s business community. As such, it is positioned as an industry-oriented voluntary action plan that has been endorsed by the Japanese government.

**How have you influenced, or are you attempting to influence their position?**
We have members on a committee for measures against global warming and were involved with the formulation of the Japanese chemical industry’s Commitment to a Low Carbon Society. The Asahi Kasei Group’s strategy for global warming mitigation is to reduce the amount of CO2 that we emit ourselves, and to sell products that emit less CO2 during use. The Commitment to a Low Carbon Society of the Japan Chemical Industry Association and the Keidanren, which represents the larger business community in Japan, is in agreement with this strategy. Asahi Kasei Group’s strategies and information dissemination on greenhouse gas reductions have an impact in contributing to the expansion of Japan’s industrial climate change countermeasures through Keidanren.

C12.3f

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

All external engagement is managed by the Global Environment Committee (members: officers of group operating companies), Global Environment Action Committee (members: RC Promoters of operating companies (General Manager of Corporate ESH & QA)) and the RC Promotion Committees of operating companies. Engagement with third parties is reported beforehand to the respective committees, the chairs of which provide guidance as needed to ensure that the engagement is consistent with overall company strategy.

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).

<table>
<thead>
<tr>
<th>Publication</th>
<th>In mainstream reports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
<td>Complete</td>
</tr>
<tr>
<td>Attach the document</td>
<td>annual securities report 2021 (Japanese).pdf</td>
</tr>
<tr>
<td>Page/Section reference</td>
<td>PDF 30/192 page</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Content elements</th>
<th>Governance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strategy</td>
</tr>
<tr>
<td></td>
<td>Risks &amp; opportunities</td>
</tr>
</tbody>
</table>

| Comment | Business Risk, Climate change risk |

---

<table>
<thead>
<tr>
<th>Publication</th>
<th>In voluntary sustainability report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
<td>Underway – previous year attached</td>
</tr>
<tr>
<td>Attach the document</td>
<td>sustainability_report2020e.pdf</td>
</tr>
<tr>
<td>Page/Section reference</td>
<td></td>
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<table>
<thead>
<tr>
<th>Content elements</th>
<th>Governance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Emissions figures</td>
</tr>
</tbody>
</table>

| Comment | |

---

<table>
<thead>
<tr>
<th>Publication</th>
<th>In mainstream reports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
<td>Underway – previous year attached</td>
</tr>
<tr>
<td>Attach the document</td>
<td>Asahi KASEI report 2020 en.pdf</td>
</tr>
<tr>
<td>Page/Section reference</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Content elements</th>
<th>Governance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strategy</td>
</tr>
<tr>
<td></td>
<td>Emissions figures</td>
</tr>
</tbody>
</table>

| Comment | |

---

C15. Signoff

---

C-FI

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

---

C15.1

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

<table>
<thead>
<tr>
<th>Row</th>
<th>Job title</th>
<th>Corresponding job category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>President</td>
<td>Chief Executive Officer (CEO)</td>
</tr>
</tbody>
</table>

---

SC. Supply chain module
(SC0.0) If you would like to do so, please provide a separate introduction to this module.

The Asahi Kasei Group operates in the three business sectors of "Material", encompassing fibers & textiles, petrochemicals and electronic devices businesses, "Homes", covering homes and construction materials businesses, and "Health Care", including pharmaceuticals and medical devices businesses. With “contributing to life and living for people around the world” as our Group Mission, we strive to heighten resource and energy efficiency with outstanding production technology, providing products and services that meet customer needs.

(SC0.1) What is your company’s annual revenue for the stated reporting period?

<table>
<thead>
<tr>
<th></th>
<th>Annual Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Row 1</td>
<td>2106100000000</td>
</tr>
</tbody>
</table>

(SC0.2) Do you have an ISIN for your company that you would be willing to share with CDP?
Yes

(SC0.2a) Please use the table below to share your ISIN.

<table>
<thead>
<tr>
<th>ISIN country code (2 letters)</th>
<th>ISIN numeric identifier and single check digit (10 numbers overall)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Row 1</td>
<td>JP 3111200006</td>
</tr>
</tbody>
</table>

(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.

Requesting member
KAO Corporation

Scope of emissions
Scope 1

Allocation level
Company wide

Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e
164

Uncertainty (%)
5

Major sources of emissions
CO2 emissions generated by fuel use and Green House Gas (GHG) generated from production process

Verified
Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
CO2 emissions calculation for Fuel and Gas: The amount of use x Fuel (or Gas) calorie coefficient x CO2 emission coefficient, CO2 emissions calculation for Electricity and Steam: The amount of use x CO2 emission coefficient
Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e
5668

Uncertainty (±%) 5

Major sources of emissions
Electricity and Steam for production

Verified Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
CO2 emissions calculation for Electricity and Steam: The amount of use x CO2 emission coefficient

Requesting member
SEKISUI CHEMICAL CO., LTD.

Scope of emissions
Scope 1

Allocation level
Company wide

Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e

Uncertainty (±%) 5

Major sources of emissions
Steam for production

Verified Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
CO2 emissions calculation for Gas: The amount of use x Gas calorie coefficient x CO2 emission coefficient, CO2 emissions calculation for Steam: The amount of use x CO2 emission coefficient

Requesting member
SEKISUI CHEMICAL CO., LTD.

Scope of emissions
Scope 2

Allocation level
Company wide

Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e

Uncertainty (±%) 5

Major sources of emissions
Electricity for production

Verified Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
CO2 emissions calculation for Gas: The amount of use x Gas calorie coefficient x CO2 emission coefficient, CO2 emissions calculation for Steam: The amount of use x CO2 emission coefficient

Requesting member
The Yokohama Rubber Co., Ltd.

Scope of emissions
Scope 1

Allocation level
Company wide
Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e
2387.5488

Uncertainty (±%)
5

Major sources of emissions
Electricity and Steam for production

Verified
Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
CO2 emissions calculation for Gas: The amount of use x Gas calorie coefficient x CO2 emission coefficient, CO2 emissions calculation for Steam: The amount of use x CO2 emission coefficient

Requesting member
The Yokohama Rubber Co., Ltd.

Scope of emissions
Scope 2

Allocation level
Company wide

Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e
7985.5763

Uncertainty (±%)
5

Major sources of emissions
Electricity and Steam for production

Verified
Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
CO2 emissions calculation for Electricity and Steam: The amount of use x CO2 emission coefficient

Requesting member
Pirelli

Scope of emissions
Scope 1

Allocation level
Company wide

Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e
898.5674

Uncertainty (±%)
5

Major sources of emissions
Gas and Steam for production

Verified
Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
CO2 emissions calculation for Gas: The amount of use x Gas calorie coefficient x CO2 emission coefficient, CO2 emissions calculation for Steam: The amount of use x CO2 emission coefficient

Requesting member
Pirelli

Scope of emissions
Scope 2

CDP
Emissions in metric tonnes of CO2e:

- Johnson & Johnson:
  - Scope 1
  - Allocation level: Company wide
  - Allocation level detail: Not Applicable
  - Uncertainty (±%): 5
  - Major sources of emissions: Electricity and Steam for production
  - Verified: Yes
  - Allocation method: Allocation based on mass of products purchased

- HP Inc:
  - Scope 1
  - Allocation level: Please select
  - Allocation level detail: Not Applicable
  - Emissions in metric tonnes of CO2e: 201
  - Uncertainty (±%): 5
  - Major sources of emissions: Electricity and Steam for production
  - Verified: Yes
  - Allocation method: Allocation based on area

- Microsoft Corporation:
  - Scope 1
  - Allocation level: Please select
  - Allocation level detail: Not Applicable
  - Emissions in metric tonnes of CO2e
  - Uncertainty (±%)
  - Major sources of emissions
  - Verified
  - Allocation method
  - Please explain how you have identified the GHG source, including major limitations to this process and assumptions made.

For calculation of CO2e emissions of our products which you procured, please use emission intensity per unit of net sales of our company. CO2e emission intensity: CO2e (Scope 1+2) 3,890,726 t-CO2e / Sales 2,106,100,000,000 Yen = 1.84736E-06 t-CO2e/Yen
Please select
 Allocation level detail
 <Not Applicable>

Emissions in metric tonnes of CO2e
Uncertainty (±%)

Major sources of emissions
For calculation of CO2e emissions of our products which you procured, please use emission intensity per unit of net sales of our company. CO2e emission intensity: CO2e (Scope 1+2) 3,890,726 t-CO2e / Sales 2,106,100,000,000 Yen = 1.84736E-06 t-CO2e/Yen

Verified
Please select
Allocation method
Please select

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
For calculation of CO2e emissions of our products which you procured, please use emission intensity per unit of net sales of our company. CO2e emission intensity: CO2e (Scope 1+2) 3,890,726 t-CO2e / Sales 2,106,100,000,000 Yen = 1.84736E-06 t-CO2e/Yen

Requesting member
Robert Bosch GmbH
Scope of emissions
Please select
Allocation level
Please select
Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e
Uncertainty (±%)

Major sources of emissions
For calculation of CO2e emissions of our products which you procured, please use emission intensity per unit of net sales of our company. CO2e emission intensity: CO2e (Scope 1+2) 3,890,726 t-CO2e / Sales 2,106,100,000,000 Yen = 1.84736E-06 t-CO2e/Yen

Verified
Please select
Allocation method
Please select

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
For calculation of CO2e emissions of our products which you procured, please use emission intensity per unit of net sales of our company. CO2e emission intensity: CO2e (Scope 1+2) 3,890,726 t-CO2e / Sales 2,106,100,000,000 Yen = 1.84736E-06 t-CO2e/Yen

Requesting member
Stanley Black & Decker, Inc.
Scope of emissions
Please select
Allocation level
Please select
Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e
Uncertainty (±%)

Major sources of emissions
For calculation of CO2e emissions of our products which you procured, please use emission intensity per unit of net sales of our company. CO2e emission intensity: CO2e (Scope 1+2) 3,890,726 t-CO2e / Sales 2,106,100,000,000 Yen = 1.84736E-06 t-CO2e/Yen

Verified
Please select
Allocation method
Please select

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
For calculation of CO2e emissions of our products which you procured, please use emission intensity per unit of net sales of our company. CO2e emission intensity: CO2e (Scope 1+2) 3,890,726 t-CO2e / Sales 2,106,100,000,000 Yen = 1.84736E-06 t-CO2e/Yen

SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).
SC1.3

(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?

<table>
<thead>
<tr>
<th>Allocation challenges</th>
<th>Please explain what would help you overcome these challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diversity of product lines makes accurately accounting for each product/product line cost ineffective</td>
<td>Allocation based on emissions per unit production volume</td>
</tr>
<tr>
<td>Diversity of product lines makes accurately accounting for each product/product line cost ineffective</td>
<td>Calculated based on sales volume with referring to emissions per unit production volume for each plant</td>
</tr>
</tbody>
</table>

SC1.4

(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?

No

SC1.4b

(SC1.4b) Explain why you do not plan to develop capabilities to allocate emissions to your customers.

As we know the total CO2 emissions by each plant, we can calculate our customer's emissions by dividing it by sales volume.

SC2.1

(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.

SC2.2

(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?

No

SC4.1

(SC4.1) Are you providing product level data for your organization's goods or services?

Yes, I will provide data

SC4.1a

(SC4.1a) Give the overall percentage of total emissions, for all Scopes, that are covered by these products.

SC4.2a

(SC4.2a) Complete the following table for the goods/services for which you want to provide data.

<table>
<thead>
<tr>
<th>Name of good/ service</th>
<th>Description of good/ service</th>
<th>Type of product</th>
<th>SKU (Stock Keeping Unit)</th>
<th>Total emissions in kg CO2e per unit</th>
<th>% change from previous figure supplied</th>
<th>Date of previous figure supplied</th>
<th>Explanation of change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tufdene, Asadene</td>
<td>Rubber</td>
<td>Intermediate</td>
<td>ton</td>
<td>819.47</td>
<td>7.8739269848</td>
<td>June 28 2021</td>
<td>Total emissions in kg CO2e per unit increased because of decrease in production volume.</td>
</tr>
<tr>
<td>Name of good/ service</td>
<td>Description of good/ service</td>
<td>Type of product</td>
<td>SKU (Stock Keeping Unit)</td>
<td>Total emissions in kg CO2e per unit</td>
<td>±% change from previous figure supplied</td>
<td>Date of previous figure supplied</td>
<td>Explanation of change</td>
</tr>
<tr>
<td>-----------------------</td>
<td>------------------------------</td>
<td>-----------------</td>
<td>--------------------------</td>
<td>--------------------------------------</td>
<td>----------------------------------------</td>
<td>------------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>Suntec TM - HD</td>
<td>High Density Polyethylene</td>
<td>Intermediate</td>
<td>ton</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suntec TM - LD</td>
<td>Low density polyethylene</td>
<td>Intermediate</td>
<td>ton</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELTAS</td>
<td>non-woven fabric</td>
<td>Intermediate</td>
<td>ton</td>
<td>1200</td>
<td>+43</td>
<td>July 19 2021</td>
<td>Operation became impossible due to a natural disaster</td>
</tr>
<tr>
<td>ROICA</td>
<td>polyurethane fiber</td>
<td>Intermediate</td>
<td>ton</td>
<td>4090</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Name of good/ service
Planova

Description of good/ service
Virus Removal Filter

Type of product
Final

SKU (Stock Keeping Unit)
square meter

Total emissions in kg CO2e per unit
201

±% change from previous figure supplied
17.15

Date of previous figure supplied
July 19, 2021

Explanation of change
The emissions in kg CO2e per unit has improved by 17.15% due to the improvement of production efficiency.

Methods used to estimate lifecycle emissions
Please select

<table>
<thead>
<tr>
<th>Name of good/service</th>
<th>Initiative ID</th>
<th>Description of initiative</th>
<th>Completed or planned</th>
<th>Emission reductions in kg CO2e per unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tufdene, Asadene</td>
<td>Please select</td>
<td>Decrease of steam by optimized temperature for dissolution tank.</td>
<td>Completed</td>
<td>0.19</td>
</tr>
<tr>
<td>Tufdene, Asadene</td>
<td>Please select</td>
<td>Optimization of the process operating conditions.</td>
<td>Completed</td>
<td>7.62</td>
</tr>
<tr>
<td>Suntec TM - HD</td>
<td>Please select</td>
<td>Optimization of the process operating conditions.</td>
<td>Please select</td>
<td>3.9</td>
</tr>
<tr>
<td>Suntec TM - LD</td>
<td>Please select</td>
<td>Optimization of the process operating conditions.</td>
<td>Please select</td>
<td>54.6</td>
</tr>
<tr>
<td>ELTAS</td>
<td>Please select</td>
<td>Installation of high energy efficiency equipment in place of aging one.</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>ROICA</td>
<td>Please select</td>
<td>Installation of high energy efficiency equipment in place of aging one.</td>
<td>Ongoing</td>
<td></td>
</tr>
</tbody>
</table>

(SC4.2d) Have any of the initiatives described in SC4.2c been driven by requesting CDP Supply Chain members?
No

Submit your response

In which language are you submitting your response?
English

Please confirm how your response should be handled by CDP

<table>
<thead>
<tr>
<th>I am submitting to</th>
<th>Public or Non-Public Submission</th>
<th>Are you ready to submit the additional Supply Chain questions?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investors, Customers</td>
<td>Public</td>
<td>Yes, I will submit the Supply Chain questions now</td>
</tr>
</tbody>
</table>

Please confirm below
I have read and accept the applicable Terms