

# Initiatives on Climate Change

(Disclosure in accordance with the framework of  
TCFD recommendations)

*Arisawa Mfg. Co., Ltd.*

# Introduction

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We consistently improve our environmental protection activities by promoting the reduction, etc. of electricity and gas consumption, hazardous chemical substance, and industrial waste in accordance with the Environmental Policy, as the Environmental Protection and Management Committee deliberates on the activities.

Under the philosophy that the solution of environmental issues leads to value creation for society as well as the reduction of business risks, we publicized “Carbon Neutral Initiatives” on our website on June, 2021 because we especially recognize climate change as a pressing issue.

We will explain the initiatives in accordance with the framework of TCFD recommendations.

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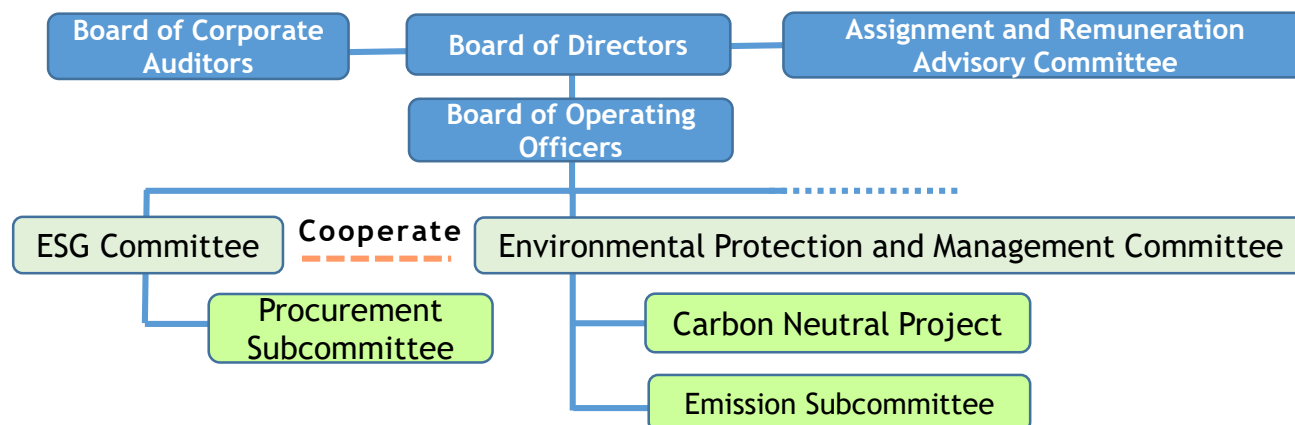
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# I . Governance

We established the ESG Committee consisting of officers in charge of ESG and representatives from each division in 2021 to deliberate four times a year on themes such as the promotion and awareness building of sustainability-conscious management, response to climate change, the realization of a decarbonized society, respect for human rights, consideration for a work environment, fair and appropriate transactions with clients. Important matters from the deliberations are reported to the Board of Operating Officers and the Board of Directors three times a year.

Especially the Environmental Protection and Management Committee in liaison with the ESG Committee deliberates on the progress of the environmental protection activities, thereby ensuring continuous improvement. Important deliberated matters are reported to the Board of Operating Officers and the Board of Directors by each Committee, and the Board of Directors makes a final decision on them.

## Governance System



Board of Directors	Supervise sustainability in general
ESG Committee	Promote company-wide activities to overcome sustainability-related issues such as policy development on sustainability in general, the coordination of department goal setting and the management of progress
Environmental Protection and Management Committee	Control budget of and coordinate company-wide improvement activities with regard to environmental load reduction such as the carbon neutral project, the coordination of department goal setting and the management of progress of the Emission Subcommittee
Carbon Neutral Project	Draft and promote the implementation of measures on the use of renewable energy and the improvement of energy use efficiency
Emission Subcommittee	Lead the reduction, elimination and recycle of emissions and wastes generated by operations
Procurement Subcommittee	Procure environment-friendly products and services and establish supply chain free from social problems related to human rights, health, etc.

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## II . Strategy

Upon scenario analysis, the ESG Committee identifies significant risks and opportunities related to climate change and assesses the amount of financial impacts that those might have.

The scenario analysis we conducted analyzed and examined the effects as of 2030 by using two scenarios, the 4°C scenario\* and the 1.5°C scenario\*\*, targeting at our whole supply chain from purchase, development, production to sales of products and services.

\*4°C scenario: a scenario where climate change measures do not make any progress from the current situation and the global average temperature rises by approximately 4°C by the end of the century compared with pre-industrial levels.

It is assumed that, while physical risks increase such as an increased severity of extreme weather events and rising sea levels, regulations on corporate and consumption activities do not become stricter than the existing ones.

\*\*1.5°C scenario: a scenario where initiatives to realize carbon neutrality are more active and the rise of the global average temperature is limited to 1.5°C by the end of the century compared with pre-industrial levels.

It is assumed that, while the increase of physical risks is limited, the tightening of corporate and consumption activities in the form of tax system and legal regulations is strengthened.

Source: The Ministry of the Environment “Practical Guide for Scenario Analysis in line with TCFD Recommendations 3rd edition”

### 【The risks and opportunities presented by climate change】

We believe that it is important to contribute to movements for limiting temperature increase because global warming due to climate change has a huge impact on society.

We also believe that climate change is likely to cause risks such as damage to us and our supply chain due to flood damage of typhoon, heavy rain, etc. and the increase of expenses such as the introduction of carbon taxes, credit purchase, the replacement of facilities, the purchase of renewable energy, etc. associated with the tightening of regulations.

On the other hand, we see the provision of products accommodating the increased environmental awareness of customers as an opportunity for our business. In particular, not only do we respond to climate change by supplying materials for **FCV and EV, solar power generation, seawater desalination treatment, aircraft (weight reduction), and a decarbonized new energy development project**, but also we contribute to the improvement of living environment by supplying materials for **automated driving assist, medical devices**, etc.

## 【Ⅱ－1. Risks】

Transition /Physical	Factors	Timeframes	Financial Impacts	Assessment	Responses
Transition	Carbon price (carbon taxes)	Medium-Long	• Increase in operating costs due to the implementation of carbon taxes	【1.5℃】 Large	<ul style="list-style-type: none"> <li>• Set targets for energy saving and CO<sub>2</sub> emissions reduction in the company-wide environmental targets.</li> <li>• Set targets for achieving carbon neutrality by 2030.</li> <li>• Energy saving, purchase renewable energy.</li> <li>• Set targets for a recycling rate and reduce energy consumption by productivity improvement.</li> <li>• Consider renewing with energy-saving equipment in compliance with regulations.</li> <li>• Promote capital investment by introducing ICP.</li> </ul>
	Emissions trading	Medium-Long	• Additional costs incurred for credit purchases, etc.	【1.5℃】 Large	
	Response to GHG emissions regulations	Medium-Long	<ul style="list-style-type: none"> <li>• Increase in costs for renewing equipment fixtures with high efficiency</li> <li>• Regulations on the use of chlorofluorocarbon</li> </ul>	【1.5℃】 Large	
	Plastic regulations	Medium-Long	• Increase in costs due to regulations on plastic packaging materials and products	【1.5℃】 Medium	<ul style="list-style-type: none"> <li>• Reduce usage.</li> <li>• Consider replacements.</li> </ul>
	Renewable energy policy	Medium-Long	• Increase in energy costs due to higher renewable energy prices	【1.5℃】 Large	<ul style="list-style-type: none"> <li>• Set targets for energy saving and CO<sub>2</sub> emissions reduction in the company-wide environmental targets.</li> <li>• Promote investment in energy saving.</li> <li>• Reduce energy consumption by productivity improvement.</li> <li>• Set targets for achieving carbon neutrality by 2030.</li> </ul>
	Change in raw material costs	Medium-Long	<ul style="list-style-type: none"> <li>• Increase in procurement costs due to carbon taxes and other regulations</li> <li>• Increase in raw material costs due to soaring crude oil and copper prices</li> </ul>	【1.5℃】 Large	<ul style="list-style-type: none"> <li>• Reduce the usage of raw materials by improving yield.</li> <li>• Select suppliers based on risk assessment.</li> </ul>
	Change in customer reputation	Short-Long	• Decrease in sales due to suspension in trading and market share loss when environmental friendliness cannot be responded to	【1.5℃】 Large	
	Change in investor reputation	Short-Long	• Avoidance of investment and loan from financial institutions and investors when disclosing climate change-related information is delayed.	【1.5℃】 Large	
Physical	Increased severity of extreme weather events	Short-Long	<ul style="list-style-type: none"> <li>• Increase in costs to deal with the suspension of operations and logistics functions</li> <li>• Delivery delay of procured materials</li> <li>• Increase in procurement (transportation) costs</li> </ul>	【1.5℃】 Medium 【4℃】 Large	<ul style="list-style-type: none"> <li>• Store inventory of four months' worth of raw materials whose replacements are not available in raw material procurement.</li> <li>• Require suppliers of BCP measures.</li> <li>• Purchase from two companies.</li> <li>• Increase productive capacity with capital investment.</li> <li>• Renew aged buildings.</li> </ul>
	Rise in average temperature	Short-Long	• Increase in energy costs with increase in the frequency of the use of air-conditioners	【1.5℃】 Small 【4℃】 Medium	<ul style="list-style-type: none"> <li>• Set targets for energy saving and CO<sub>2</sub> emissions reduction in the company-wide environmental targets.</li> <li>• Promote investment in energy saving.</li> <li>• Paste heat-insulation sheets on windows directly exposed to sunlight.</li> </ul>

## 【Ⅱ－2. Opportunities】

Transition /Physical	Factors	Timeframes	Financial Impacts	Assessment	Responses
Transition	Emissions trading	Medium-Long	<ul style="list-style-type: none"> <li>Additional revenue when emission allowances are excess</li> </ul>	【1.5℃】 Large	<ul style="list-style-type: none"> <li>Set targets for energy saving and CO<sub>2</sub> emissions reduction in the company-wide environmental targets.</li> <li>Set targets for achieving carbon neutrality by 2030.</li> <li>Energy saving, purchase renewable energy.</li> <li>Set targets for a recycling rate.</li> <li>Reduce energy consumption by productivity improvement.</li> <li>Consider renewing with energy-saving equipment in compliance with regulations.</li> <li>Promote capital investment by introducing ICP.</li> </ul>
	Progress of low-carbon technologies	Short-Long	<ul style="list-style-type: none"> <li>Increase in sales of materials for electronic parts due to the increased demand for EV</li> <li>Increase in sales of materials for fuel cell due to the increased demand for fuel-cell vehicles</li> <li>Increase in sales of materials for hydrogen generation devices due to the increased demand for hydrogen energy</li> <li>Increase in sales of carbon cloth prepregs and honeycomb materials due to the increased demand for the weight reduction of vehicles and aircrafts</li> </ul>	【1.5℃】 Large	<ul style="list-style-type: none"> <li>Develop and promote sales of high heat-resistant FPC materials for EV and high heat-dissipation/insulation adhesive sheets.</li> </ul>
	Change in customer reputation	Short-Long	<ul style="list-style-type: none"> <li>Increase in market share by receiving a high reputation in markets when environmental friendliness can be responded to</li> </ul>	【1.5℃】 Large	<ul style="list-style-type: none"> <li>Introduce our initiatives by externally delivering the Environmental Policy and issuing environmental reports.</li> <li>Publicize initiatives for ESG, TCFD, and carbon neutrality.</li> <li>Issue integrated reports.</li> </ul>
	Change in investor reputation	Short-Long	<ul style="list-style-type: none"> <li>Easier to obtain investment and loan from financial institutions and investors when climate change-related information is disclosed more than other companies</li> </ul>	【1.5℃】 Large	
Physical	Increased severity of extreme weather events	Short-Long	<ul style="list-style-type: none"> <li>Increase in sales of seawater desalination treatment devices due to the impact of water stress</li> <li>Increase in sales of electronic devices due to the increased demand for them with lower human mobility</li> </ul>	【1.5℃】 Medium 【4℃】 Large	<ul style="list-style-type: none"> <li>Promote sales in the electronic materials field and of filament winding products.</li> </ul>

Transition risks: the impact of transition to a decarbonized society;

Physical risks: the impact of natural disasters including floods and storms;

Timeframes: short (-3 years), medium (3-10 years), long (10+ years);

Assessment (small, medium, large): analyzing quantitatively and qualitatively, and assessing relative impacts.



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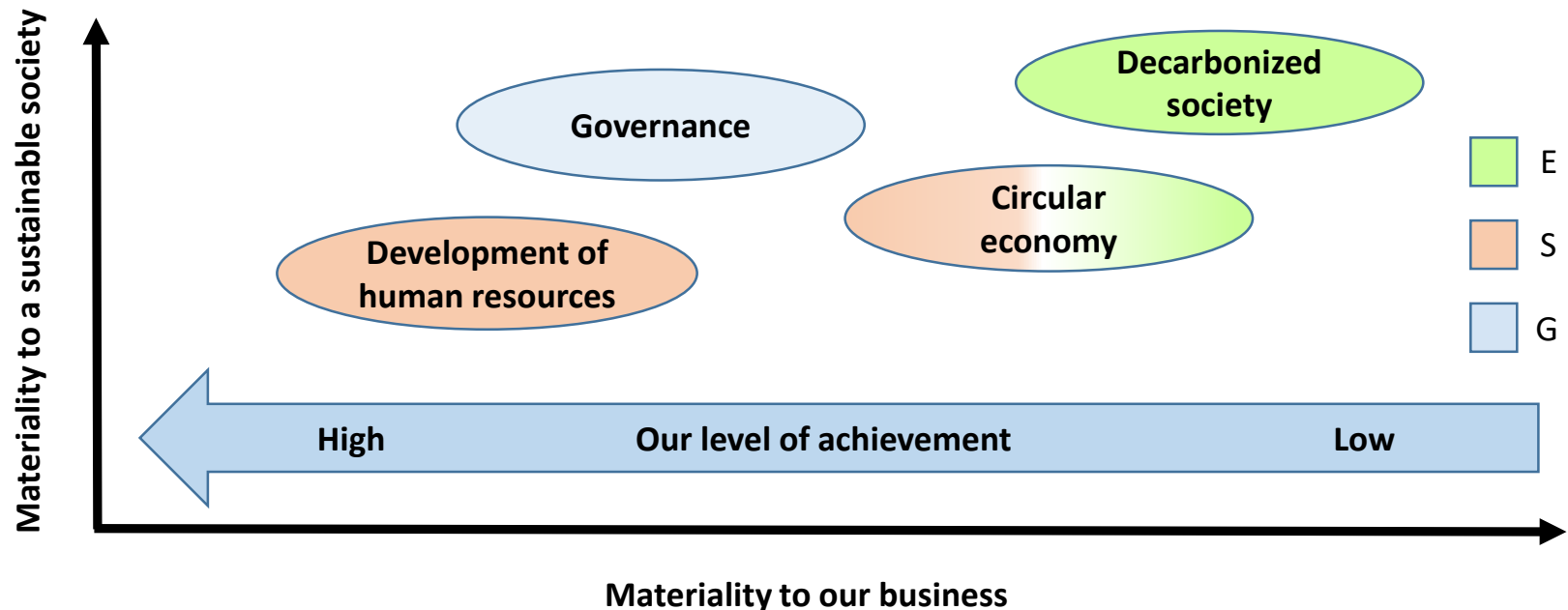
# III. Risk Management

We recognize that climate change-related risks are important management issues. Therefore, the ESG committee identifies and assesses climate change-related risks, and reports to the Board of Operating Officers and the Board of Directors, thereby defining key issues. We improve our risk management system by managing these risks.


















As for assessing climate change-related risks, upon identifying climate change factors in businesses, we understand changes such as future regulations, and societal, technological and climate conditions, etc. for each 1.5°C and 4°C scenarios.

We have also considered responding to the changes of external environments associated with environmental issues and contributing to international sustainable development goals, or SDGs. As a result, we have identified four items as key issues (materiality) to be addressed in the medium-term management plan, i.e. “Contribution to a decarbonized society,” “Promotion of a circular economy,” “Enhancement of governance,” and “Development of diverse human resources and enhancement of descent work.” We will address the issues for their resolution as a whole company.

As for identifying materiality, the ESG committee narrowed down to four items from a perspective of materiality to a sustainable society and to our business, and the items were approved by the Board of Directors.



### 【Ⅲ－1. Materiality and Vision】

Materiality	Vision	Global goals that are expected to progress
Contribution to a decarbonized society	<ul style="list-style-type: none"> <li>Achieving carbon neutrality by 2030</li> <li>Promotion of energy saving and resource saving</li> <li>Substituting with renewable energy</li> <li>Provision of environmental load reduction materials</li> </ul>	 
Promotion of a circular economy	<ul style="list-style-type: none"> <li>Reduction of emissions</li> <li>Strengthening supply chain management</li> </ul>	       
Enhancement of governance	<ul style="list-style-type: none"> <li>Organization with high ethical standards</li> <li>Organization system with a culture of openness</li> </ul>	  
Development of diverse human resources Enhancement of descent work	<ul style="list-style-type: none"> <li>Development of next-generation human resources</li> <li>Company where all employees work actively</li> </ul>	   

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# IV. Indicators and Goals

We have implemented various measures to improve energy use efficiency. From now on, we will not only expand the deployment of the measures, but also aim to achieve carbon neutrality (compared to CO<sub>2</sub> emissions in FY2020)\* in FY2030 in terms of direct emissions (Scope1) and indirect emissions (Scope2) by using renewable energy and purchasing carbon neutral gas as well as promoting the development of low-carbon products.

## Details of measures for carbon neutrality

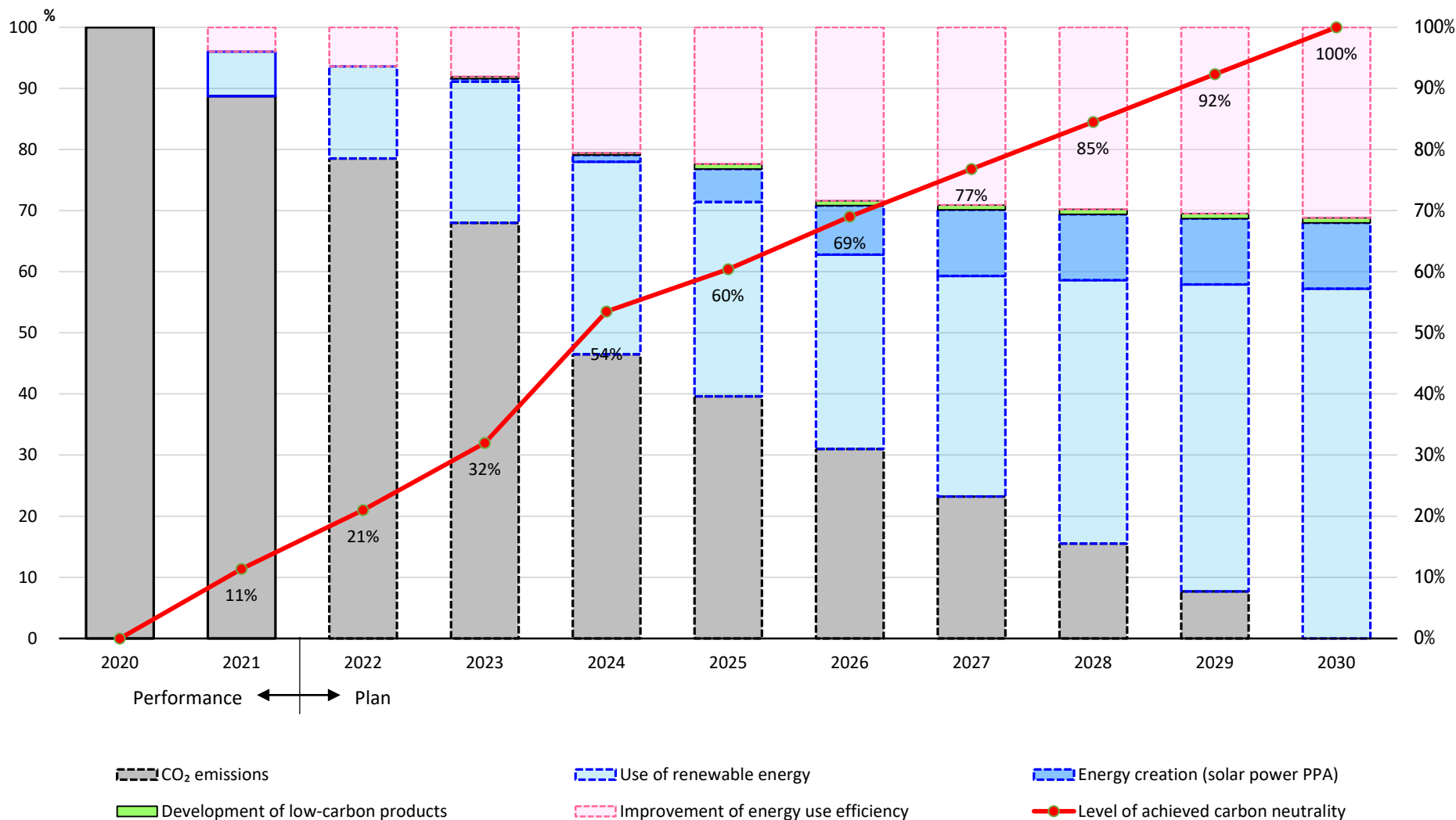
- Start of purchasing electricity from renewable energy sources (from July, 2021)
- Improvement of energy use efficiency (e.g. adding exhaust heat recovery systems to production facilities, improving the efficiency of air-conditioning and steam systems)
- Development of low-carbon products (e.g. reducing energy in production process, reducing the amount of organic solvent used)

**\*Target sites: Arisawa Mfg. Co., Ltd. and its domestic group companies  
(The domestic coverage is 95%. The target sites will be gradually extended to our consolidated companies)**

## 【IV－1. Plan for achieving carbon neutrality】

We will promote the use of renewable energy, energy creation (energy storage), the development of low-carbon products and the improvement of energy use efficiency. The graph below is updated by adding the performance in FY2021 and the elements of low-carbon products and energy creation (energy storage) to the plan publicized on June, 2021.

### Transition and breakdown of CO<sub>2</sub> emissions



## 【IV—2. CO<sub>2</sub> emissions of our domestic consolidated companies in FY2020 】

Scope/Category			CO <sub>2</sub> emissions (CO <sub>2</sub> e-t)	Rate (%)
Scope1			18,310.7	8.3%
Scope2			20,377.5	9.2%
Scope3			181,831.8	82.5%
Upstream	Category1	Purchased goods and services	162,630.2	89.6%
	Category2	Capital goods	6,030.3	3.3%
	Category3	Fuel- and energy-related activities not included in Scope 1 and 2	7,332.9	4.0%
	Category4	Transportation and distribution (upstream)	2,803.9	1.5%
	Category5	Waste generated in operations	1,871.4	1.0%
	Category6	Business travel	56.9	0.0%
	Category7	Employee commuting	892.1	0.5%
Downstream	Category12	End-of-life treatment of sold products	214.1	0.1%
Total			220,520.0	100.0%

Scope 3 is calculated using GLIO B2\_GHG, the Ministry of the Environment DB and other factors.