

Initiatives on Climate Change

(Disclosure based on the framework of TCFD recommendations)



July 14, 2025 Arisawa Mfg. Co., Ltd.



We consistently improve our environmental protection activities by promoting the reduction of electricity and gas consumption, hazardous chemical substances, and industrial waste, etc., in accordance with our environmental policy. These activities are discussed by our Environmental Protection and Management Committee.

Under the philosophy that the solution of environmental issues leads to value creation for society as well as the reduction of business risks, we are striving to achieve "Carbon Neutrality" by 2030^{*} because we especially recognize climate change as a pressing issue.

This document describes our initiatives related to climate change based on the framework of the TCFD recommendations, dividing into Governance, Strategy, Risk Management, and Metrics and Goals.

*Target sites: Arisawa Mfg. Co., Ltd. including affiliates within the premises in Minami-honcho, Nakadahara, and Nakadahara-nishi Factories

I. Governance	3-4
II. Strategy	5-8
III. Risk Management	9-10
IV. Metrics and Goals	11-13

I. Governance



We established the ESG Committee in December 2021 in order to take the lead in addressing climate change issues. At the committee, a director and senior managing operating officer serves as a chairperson, and operating officers and general managers of each division serve as members, promoting the organized activities. Since April 2023, our domestic affiliates have also participated in ESG activities.

The ESG Committee deliberates four times a year on themes, such as responding to climate change, realizing a decarbonized society, respecting for human rights, considering for working environment, and having fair and appropriate transactions with business partners, in addition to enlightening and promoting sustainability-conscious management. Important matters for deliberation and the status of the activities, etc. are regularly reported by the committee to the Board of Operating Officers, the Management Conference and the Board of Directors, and the Board of Directors makes final decisions. For a promotion system on ESG, please refer to the ESG Organization Chart on page 4.

Regarding environmental conservation activities, the Environmental Protection and Management Committee, which works with the ESG Committee, supervises the progress of activities conducted by the Carbon Neutrality Project and the Emission Subcommittee and continuously improves them.

The Board of Directors checks the progress of a mid-term management plan, discusses measures for issues, and reflects the results in our management strategy and risk management and assessment based on periodic reports. The Board of Directors is responsible for debating ESG-related agendas and supervising the goal-setting and the progress of initiatives.

ESG Policy

In all aspects of our business activities, Arisawa Group actively addresses a variety of issues related to environment, society and governance and aims to achieve sustainable growth.

ESG Organization Chart	Board of Corporate Auditors Board of Directors Nomination & Remuneration Advisory Committee Management Conference Board of Operating Officers ESG Committee Linkage Esg Committee Environmental Protection and Management Committee
	Procurement Subcommittee Carbon Neutrality Project Human Capital Subcommittee Emission Subcommittee
Board of Directors	•Supervise the entire sustainability
ESG Committee	•Promote the entire activities to overcome challenges for sustainability, such as establishing a general sustainability policy, coordinating to set division goals, and managing their progress
Procurement Subcommittee	•Procure eco-friendly materials, provide suppliers with training on human rights, labor rights, safety and health, and corporate ethics in accordance with our CSR procurement policy, and establish a socially acceptable supply chain
Human Capital Subcommittee	 Develop human resources who can implement CIC (Create, Innovate, and Challenge) and promote human resource development by linking management strategy to human resource strategy Develop future leader candidates by achieving diversity and ensuring equal opportunities
Environmental Protection and Management Committee	•Manage budgets and conduct company-wide coordination for activities to reduce environmental loads, such as setting goals for the Carbon Neutrality Project and the Emission Subcommittee and managing their progress
Carbon Neutrality Project	•Establish and implement measures to achieve carbon neutrality by 2030, such as capital investment, technological innovation, use of renewal energy, and improvement in energy use efficiency
Emission Subcommittee	•Take the initiative in reducing, removing, and recycling emissions and waste generated in business activities •Research technology trends toward the realization of zero emissions in 2050

I. Governance	3-4
II. Strategy	5-8
III. Risk Management	9-10
IV. Metrics and Goals	11-13

II. Strategy



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

The scenario analysis we conducted covered our entire supply chain from procurement, development, production to the sales of products and services, and analyzed the effects as of 2030 by using two scenarios, the 1.5°C scenario^{*} and the 4°C scenario^{**}.

*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. **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.

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, we not only respond to climate change by supplying materials for fuel cells for vehicles, seawater desalination treatment, aircraft (weight reduction), and decarbonized new energy development projects for a next generation, but also contribute to improving the living environment by supplying materials for next-generation computing, medical devices, etc.

II-1. Risks

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), and long (10+ years) Assessment (small, medium, large): analyzing quantitatively and qualitatively, and assessing relative impacts

	Factors	Timeframes	Financial Impacts	Assessment	Responses
	Carbon price (carbon taxes)	Medium- Long	 Increase in operating costs due to the implementation of carbon taxes 	1.5°C Large	•Set targets for energy saving and CO ₂ emissions reduction in the company-wide environmental targets
	Emissions trading	Medium- Long	 Additional costs incurred for credit purchases, etc. 	1.5°C Large	 Set targets for achieving carbon neutrality by 2030 Save energy and purchase renewable energy Set targets for a recycling rate
	Response to GHG emissions regulations	Medium- Long	 Increase in costs for renewing equipment fixtures with high efficiency Regulations on the use of chlorofluorocarbon 	1.5°C Large	 Reduce energy consumption by productivity improvement Renew energy-saving equipment in compliance with regulations Promote capital investment by introducing ICP (Internal Carbon Pricing)
	Plastic regulations	Medium- Long	 Increase in costs due to regulations on plastic packaging materials and products 	1.5°C Medium	 Reduce usage Recycle film winding core (plastic pipe)
Transition	Renewable energy policy	Medium- Long	 Increase in energy costs due to higher renewable energy prices 	1.5°C Large	 Promote investment in energy saving Reduce energy consumption by productivity improvement Set targets for achieving carbon neutrality by 2030
	Change in raw material costs	Medium- Long			 Reduce the usage of raw materials by improving yield Select suppliers based on risk assessment
	Change in customer reputation	Short-Long	 Decrease in sales due to suspension in trading and market share loss when environmental friendliness cannot be addressed 	1.5°C Large	 Introduce our initiatives by externally delivering the environmental policy and issuing environmental reports Publicize initiatives for ESG, TCFD, and carbon neutrality Issue integrated reports
	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	

II-1. Risks

		Factors	Timeframes	Financial Impacts	Responses				
-	hysical	Increased severity of extreme weather events	Short-Long	 Increase in costs to deal with the suspension of operations and logistics functions Delivery delay of procured materials Increase in procurement (transportation) costs 	1.5°C Medium 4°C Large	 Store inventory of four months' worth of raw materials whose replacements are not available in raw material procurement Require suppliers of BCP measures Use a dual vendor system Increase productive capacity with capital investment Renew aged buildings 			
Ā	Rise in average temperature	Short-Long	 Increase in energy costs with increase in the frequency of the use of air-conditioners 	1.5°C Small 4°C Medium	 Set targets for energy saving and CO₂ emissions reduction in the company-wide environmental targets Promote investment in energy saving 				

II-2. Opportunities

	Factors	Timeframes	Financial Impacts	Assessment	Responses			
Transition	Emissions trading	Medium- Long	•Additional revenue when emission allowances are excess	1.5°C Large	 Set targets for energy saving and CO₂ emissions reduction in the company-wide environmental targets Set targets for achieving carbon neutrality by 2030 Save energy and purchase renewable energy Set targets for a recycling rate Reduce energy consumption by productivity improvement Renew energy-saving equipment in compliance with regulations Promote capital investment by introducing ICP 			
	Progress of low-carbon technologies	Short-Long	 Increase in sales of materials for electronic parts due to the increased demand for EV Increase in sales of materials for fuel cells due to the increased demand for fuel-cell vehicles Increase in sales of materials for hydrogen generation devices due to the increased demand for hydrogen energy Increase in sales of carbon cloth prepregs and honeycomb materials due to the increased demand for the weight reduction of vehicles and aircrafts 	1.5°C Large	 Develop and promote sales of high heat-resistant FPC materials for EV and high heat-dissipation/insulation adhesive sheets Develop and enter into markets for hydrogen generation devices 			
	Change in customer reputation	Short-Long	 Increase in market share by receiving a high reputation in markets when environmental friendliness can be addressed 	1.5°C Large	 Introduce our initiatives by externally delivering the environment policy and issuing environmental reports Publicize initiatives for ESG, TCFD, and carbon neutrality 			
	Change in investor reputation	Short-Long	•Easiness to obtain investment and loan from financial institutions and investors when climate change-related information is disclosed more than other companies	1.5°C Large	•Issue integrated reports			
Physical	Increased severity of extreme weather events	Short-Long	 Increase in sales of seawater desalination treatment devices due to the impact of water stress Increase in demand for and sales of electronic devices due to lower human mobility 	1.5℃ Medium 4℃ Large	 Promote sales in the electronic materials field and of filament winding products 			

I. Governance	3-4
II. Strategy	5-8
III. Risk Management	9-10
IV. Metrics and Goals	11-13

III. Risk Management



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

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

We also discussed how to respond to changes in external environments due to environmental issues as well as how to contribute to international Sustainable Development Goals (SDGs) at the ESG Committee meetings. As a result, we identified the following four items as materiality to be tackled in our mid-term management plan: "Contribution to a decarbonized society", "Development of diversified human resources and improvement in job satisfaction", "Promotion of circular economy", and "Enhancement of Governance". To solve these issues, we are making company-wide efforts.

In the process of identifying materiality, the ESG Committee narrowed down to the four items based on the severity for a sustainable society and the severity for our business.



We set KGIs (key goal indicators) to achieve in each materiality and pursue sustainable growth.

Materiality	KGI (Key Goal Indicator)	Initiatives through FY2024
Contribution to a decarbonized society + Offer low environmental load materials		 Achievement ratio of carbon neutrality: 54.4% Installation of waste heat recovery system in the coating machine, and renewal of air conditioning equipment Amount used: Electricity 17.31 million kWh, CN gas 2.05 million m³ Reduction of energy for mass production and development of new eco-friendly products
Promotion of circular economy	 Reduce emissions Promote recycle Establish a sustainable supply chain Ensure safety of chemical substances 	 Reduce scraps of FRP products Start recycling of glass scraps, PVC materials, etc. Establish a human rights policy and a CSR procurement policy, and conduct CSR surveys Start investigations of chemical substance database and the management system
Development of diversified human resources Improvement in job satisfaction	 Enhance individual autonomy and a sense of unity within an organization Develop human resources to lead the next generation Create a company where all employees can work lively 	 Enrich the contents of e-learning (online education system), and conduct engagement survey Provide opportunities for communication between CEO and female employees, and outside directors and operating officers Review benefits and systems
Enhancement of governance	 Build an organization with a strong sense of ethics Enhance risk management 	 Conduct audits for subsidiary companies Conduct BCP training Enhance information security

IV. Metrics and Goals	11-13
III. Risk Management	9-10
II. Strategy	5-8
I. Governance	3-4

IV. Metrics 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 in FY2030 (compared to CO₂ emissions in FY2020)^{*} 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.

*Target sites: Arisawa Mfg. Co., Ltd. and some of its domestic group companies (Minami-honcho Factory, Nakadahara Factory, and Nakadahara-nishi Factory)

Summary of initiatives on carbon neutrality

- Purchase of renewable energy electricity started (since July, 2021)
- Purchase of carbon neutral gas started (since July, 2021)
- Purchase of J-credit with high regionality (March, 2025)
- Improvement of energy use efficiency
 - (e.g., waste heat recovery for production equipment, improvement of A/C and steam equipment)
- Introduction of solar power (onsite PPA) (operation started from June, 2024)
- Development of low carbon materials
 - (e.g., reducing energy in production process, reducing consumption of organic solvents)

IV-1. Plan for achieving carbon neutrality

*Target: CO₂ direct emissions (Scope 1) and indirect emission (Scope 2)

*Target sites: Arisawa Mfg. Co., Ltd. and some of its domestic group companies (Minami-honcho Factory, Nakadahara Factory, and Nakadahara-nishi Factory) (t-CO₂) 100% 100% 2% 1,800 35,000 8,203 90% 2,609 84% <mark>4.943</mark> 2,54 -46 80% 30,000 -79 7% 5,278 70% 69% 8,129 25,000 12,657 60% 60% 54.4% 20,000 38,541 50% 31,705 40% 15,000 33.9% 25,404 30% 21,492 10,000 17,916 20.3% 20% 5,000 11.4% 10% Actual Plan 0% 0 2021 2020 2022 2023 2024 2025 2026 2027 2028 2029 2030 Use of renewable energy CO₂ emissions Energy creation(solar power PPA) Development of low-carbon products Improvement of energy use efficiency Achievement rate of CN

Achievement rate of CN (carbon neutrality) = (Total of renewable energy, energy creation, low-carbon products, and energy utilization efficiency) / CO₂ emissions in FY2020

IV-2. CO₂ emissions of consolidated companies

CO₂ emissions have been calculated for the whole Arisawa Group including overseas consolidated subsidiaries since FY2022. (Actual result for the whole Arisawa Group in FY2024 will be reported in the integrated report to be issued in November 2025.)

			FY2021		FY2022		FY2022		FY2023	
Target sites			Domestic consolidated companiesDomestic consolidated companiesConsolidated companies		Consolidated companies including overseas		Consolidated companies including overseas			
Scope/Category			$(t-CO_2)^*$	Ratio	$(t-CO_2)^*$	Ratio	$(t-CO_2)^*$	Ratio	$(t-CO_2)^*$	Ratio
Scope1			16,747.4	9.3%	14,165.3	8.2%	16,486.1	6.7%	14,653.8	6.5%
Scope2			15,816.8	8.7%	12,516.1	7.2%	26,786.6	11.0%	22,819.2	10.2%
Scope3	Scope3		148,493.5	82.0%	146,839.1	84.6%	200,851.7	82.3%	187,234.5	83.3%
Up Stream	Category1	Purchased goods and services	129,548.9	87.2%	128,782.3	87.7%	172,895.0	86.1%	164,249.2	73.1%
	Category2	Capital goods	6,193.2	4.2%	6,813.9	4.7%	12,268.8	6.1%	8,787.4	3.9 %
	Category3	Fuel- and energy-related activities not included in Scope 1 and 2	6,883.7	4.6%	5,881.8	4.0%	8,485.0	4.2%	7,107.9	3.1%
	Category4	Transportation and distribution (upstream)	3,010.0	2.0%	2,513.9	1.7%	3,969.1	2.0%	3,797.5	1.7%
	Category5	Waste generated in operations	1,656.3	1.2%	1,521.7	1.0%	1,586.5	0.8%	1,405.4	0.6%
	Category6	Business trip	102.1	0.1%	209.0	0.1%	370.0	0.2%	649.3	0.3%
	Category7	Employee commuting	900.7	0.6%	983.5	0.7%	1,080.4	0.5%	1,043.6	0.5%
Down Stream	Category12	End-of-life treatment of sold products	198.6	0.1%	133.0	0.1%	196.9	0.1%	194.2	0.1%
Total			181,057.7	100.0%	173,520.5	100.0%	244,413.5	100.0%	224,707.5	100.0%

Scope 3 is calculated using GLIO B2_GHG, the Ministry of the Environment DB and other factors.

* CO₂ emissions