

Climate Change Initiatives

As a global company, we recognize climate change to be one of the issues that confront us on a global scale, and that it presents us with major risks as well as major opportunities. We will realize a business model that contributes to climate change response strategies from the perspective of both products and production, with the aim of helping to realize carbon neutrality.

● Responding to the TCFD Recommendations

We have been proactively moving forward with disclosure of information in line with the Task Force on Climate-related Financial Disclosure (TCFD)* Recommendations since we announced our endorsement of them in May 2022.



*The Financial Stability Board (FSB) was established in 2015 on behalf of the G20. The Task Force recommends that companies evaluate any financial impact that climate change risks and opportunities might pose for their business operations, and disclose their governance, strategy, risk management, and metrics and targets.

Governance

YAMASHIN-FILTER CORP. has established a system of governance centering on the YSS Committee, a body designed to discuss sustainability issues including climate change. The YSS committee is chaired by the head of the Management Planning Office, who also serves as an executive officer, and has a total membership consisting of all executive officers (approximately 20 members in total, including the Representative Director/President, the Director/Senior Managing Executive Officers, as well as the Director/Managing Executive Officers.) The committee, which meets monthly, is tasked with holding discussions of risks and opportunities, formulating responsive policies and setting KPIs, as well as monitoring KPIs and each of the related measures. It reports the content of its discussions to the Management Conference and Board of Directors. The responsive policies that the committee thus deliberates are reflected in decisions made by the Board of Directors and the Management Conference. They are also put into practice in business operations through the executive officer representing each department, thereby integrating them into corporate management.

● Sustainability Promotion System



Risk Management

Through the YAMASHIN-FILTER CORP. risk management process, we classified the items according to the categories compiled by the TCFD, including transition risk, physical risk, and opportunity. In assessing the risks and opportunities, we carried out a quantitative assessment based on a total of six criteria: frequency of occurrence, duration of impact, extent of impact, impact on core business, likelihood of manifestation, and the time period of manifestation. In light of the results of these steps, we deliberate and confirm the value of financial impact considering net sales.

We then consider countermeasures for the risks we identify, in keeping with climate change-related strategy policies, and carry out risk avoidance, mitigation and management. These countermeasures are put forward by the YSS Committee, whereupon the Board of Directors and Management Conference deliberate and decide on those that require organizational decisions. Countermeasures that can be put into operation immediately are implemented by the executive officer representing each department in order to incorporate them into business operations.

Strategy

In line with the TCFD categories, we specified climate change-related risks and opportunities facing the YAMASHIN-FILTER Group, and carried out a scenario analysis according to the 4°C Scenario*1 from the Intergovernmental Panel on Climate Change (IPCC) and the 1.5°C to 2°C Scenario*2 of the International Energy Agency (IEA).

*1 4°C scenario: IPCC RCP8.5, IEA STEPS

*2 1.5°C/2°C scenario: IPCC RCP1.9/RCP2.6, IEA SDS/NZE2050

● Climate-related Risks and Opportunities

Short term: 0-3 years Medium term: 3-10 years Long term: 10+ years

Category		Risk, opportunity description	Time axis	Impact on business	
				1.5°C	4°C
Transition risk	Policy and regulation	Increased response costs resulting from taxation of the company's own emissions due to introduction of a carbon tax	Long-term	Small	Small
		Increase in costs relating to the imposition of an EU Carbon Border Tax in Europe targeting filter products whose main raw materials are aluminum and steel responsible for the highest share of greenhouse gas emissions	Medium-term	Small	Small
	Technology	An increase in raw materials costs resulting from the conversion of existing raw materials for filtration media (from petroleum-derived plastics to non-petroleum-derived materials)	Long-term	Medium	Small
	Market	The automotive industry's accelerating shift to EVs as a measure against climate change could result in drastic increases in the price of aluminum, a key raw material in filter products	Long-term	Medium	Medium
	Assessment	Stricter trade conditions imposed by customers such as mining-related companies could reduce demand for products that lack evident potential to reduce CO ₂ emissions	Long-term	—	—
Physical risk	Acute (typhoon, etc.)	Supply chain disruptions or shutdowns resulting from cyclones, typhoons, etc., could reduce production capacity	Short-term	Small	Small
	Chronic (climate change, increase in average temperatures, sea level rise)	Supply chain disruptions or shutdowns resulting from cyclones, typhoons, etc., could reduce production capacity A rise in atmospheric temperatures could increase the costs of coping with the resulting worsening of factory work environments and the impact on the supply chain	Long-term	Small	Small
Opportunity	Products and services	Expanded opportunities to manufacture and sell long-life filters for construction machinery	Long-term	Large	Large
		Expanded opportunities for NanoWHELP [®] manufacturing and sales	Medium-term	Large	Large
		Expanded opportunities in business related to masks to counter the spread of infectious disease accompanying rising atmospheric temperatures	Long-term	Medium	Medium
		Expanded opportunities to manufacture and sell high-performance filter products for construction machinery for compliance with exhaust gas regulations	Short-term	Large	Large
	Assessment	Increased investment in plant and equipment resulting from expanded financing opportunities through Sustainable FITs, etc.	Long-term	—	—

In order to avoid risks, it is incumbent upon us to do our part in helping to keep the increase in the average global temperature to within 1.5°C. This effort includes developing and supplying products that apply our technological capabilities to meeting decarbonization and environmental conservation needs so that we can exert a major social impact, giving rise to growth and profit opportunities for our company, which is our medium- to long-term strategic policy.

● Risk and Opportunity Mapping

	Raw materials procurement	Filter production	Integration into customer products	Market, end user	Head Office, Administration
	Of the raw materials that go into filter products, 60% are derived from aluminum, steel, and petroleum	The Saga Plant in Japan and the Cebu Plant in the Philippines comprise our main production bases	Construction machinery filters Air filters	Construction machinery Industrial, construction Healthcare masks	Corporate management Business management
To be maximized in a world aiming for 1.5°C	Risk of increased costs from the company's own emissions and products due to carbon tax, etc.		Opportunity to expand sales of NanoWHELP [®] , featuring long service life and low pressure loss	Opportunity for increased demand due to tightening of regulations in emerging countries	Opportunity for financing through Sustainable FITs, etc.
	Risk of increase in raw material prices due to carbon taxes, etc.	Risk of increase in costs for developing filter media using non-petroleum-derived raw materials	Opportunity to gain first-mover advantage through early development of technologies for long-life filters, etc.	Risk of decline in sales of products lacking environmental friendliness due to stricter trade conditions imposed by customers	
To be maximized in a world of 4°C or more	Risk of a reduction in operations from supply chain disruptions due to major typhoons, etc.	Risk of increased cost of responding to worsening work environments due to heat waves and rising atmospheric temperatures		Opportunity to expand mask business sales due to increase in infectious diseases	Risk of rising sea levels impacting business sites

■ Risk ■ Opportunity

Metrics and Targets

In FY2022, our group's total emissions from Scope 1 (direct emissions from in-house sources), Scope 2 (indirect emissions from electric power use, etc.), and Scope 3 (emissions occurring throughout the value chain) were 78,087 t-CO₂. Scope 1 and 2 emissions amounted to 3,532 t-CO₂, down by approximately 33% from FY2021.

The YAMASHIN-FILTER Group will formulate medium- to long-term targets for CO₂ emission reduction as we continue to proactively reduce overall Scope 1, 2, and 3 emissions toward obtaining SBT certification.

In-house initiatives to reduce CO₂ emissions

Each of our plants is considering the formulation of medium- to long-term reduction targets as they take steps to reduce CO₂ emissions further.

In FY2022, we used 2,285MWh of electric power derived from renewable energy sources, and our group-wide implementation rate was approximately 34.7%. The Saga Branch Office, which began operating in October 2021, has been designed to enable all electric power used in the plant to be supplied from renewable energy sources. Moreover, we have added visibility to the site's electric power use by installing an electric power monitoring system to oversee the status of power use by each individual line. To advance energy conservation still further, we reuse exhaust heat from the nanofiber production area during winter to heat the warehouse. The Yokosuka Innovation Center and AQC Corporation began using electricity from renewable energy sources in FY2022. Each of these initiatives is to be implemented at domestic and overseas sites.

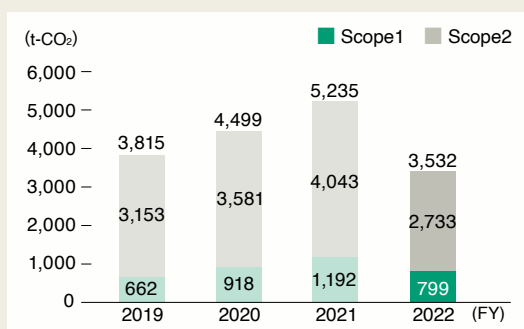
Making a contribution through our products

Every day, we make progress in addressing climate change through our filter products, an effort centering on nanofiber technologies with little environmental impact.

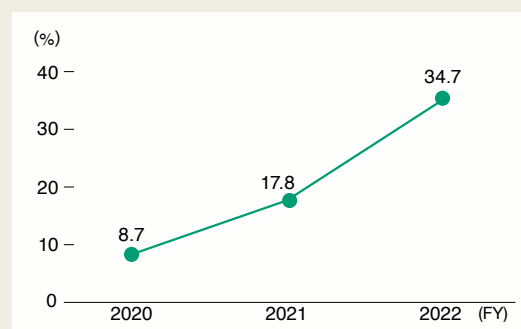
Products, etc.	Summary
Large construction machinery return filters and line filters	Major improvement in long-life products helps control CO ₂ emissions by reducing waste
Air filter product "NanoWHELP®"	Received high marks for making it possible to reduce CO ₂ emissions by 23% per year compared to our conventional products
Mask products	Developing products that can be reused helps conserve resources and reduce waste
Transmission filters	Changes in materials used for parts has enabled weight reduction, helping reduce CO ₂ emissions that occur during transportation of raw materials and products
Filtration media materials	Advancement of research on reducing waste emissions throughout the life cycle by using biomass materials as filtration media

Results

Scope 1 and 2 emissions*1



Renewable energy adoption rate *2



● Energy consumption *1 *3

(Unit: kl)

Scope	FY2019	FY2020	FY2021	FY2022
Group	1,797	2,252	2,550	2,034 ✓
Overseas	1,027	1,225	1,621	1,174 ✓**4
Domestic	770	1,028	929	859 ✓

● Scope 1 and 2 emissions*1 breakdown/intensity

	Unit	Scope	FY2019	FY2020	FY2021	FY2022
Scope 1, 2 total	t-CO ₂	Group	3,815	4,499	5,235	3,532 ✓
		Overseas	2,601	3,096	4,098	3,051 ✓**4
		Domestic	1,214	1,404	1,137	481 ✓
CO ₂ emission intensity per sales	t-CO ₂ / millions of yen	Group	0.301	0.308	0.278	0.190

● Scope 3 emissions*2

Item		FY2022 (t-CO ₂)	Composition ratio (%)
Scope 3 Total		74,555 ✓	100
Cat.1	Products, services purchased	50,507 ✓	67.7
Cat.2	Capital goods	2,380 ✓	3.2
Cat.3	Fuel and energy activities not included in Scope 1 and 2	662 ✓	0.9
Cat.4	Transportation, delivery (upstream)	4,047 ✓	5.4
Cat.5	Waste from business operations	991 ✓	1.3
Cat.6	Business travel	51 ✓	0.1
Cat.7	Employee commuting	501 ✓	0.7
Cat.8	Leased assets (upstream)	Included in Scope 1 and 2 calculations	—
Cat.9	Transportation, delivery (downstream)	Not included in calculation	—
Cat.10	Processing of products sold	Not included in calculation	—
Cat.11	Use of products sold	Not included in calculation	—
Cat.12	Disposal of products sold	15,416 ✓	20.7
Cat.13	Leased assets (downstream)	Not included in calculation	—
Cat.14	Franchise	Not included in calculation	—
Cat.15	Investment	Not included in calculation	—

Note: ✓ Data marked with an asterisk have third-party assurance

*1 Scope of data: Consolidated group, including greenhouse gases not derived from energy

*2 Scope of data: Consolidated group

*3 Crude oil equivalent

 *4 Overseas sales offices (Belgium, United States, and Thailand) are excluded from the total due to their small percentage of total CO₂ emissions.