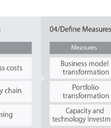
Disclosure based on TCFD Recommendations

In August 2020, we announced our support for the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and promoted an analysis of the risks, opportunities, and financial impacts of climate change on our business. We are pleased to disclose some of the results of this study based on the TCFD recommendations.

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

Governance

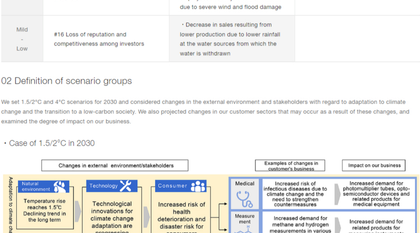
Based on our basic policy of sustainability and fundamental environmental policy, we recognize that climate change is one of the most important issues. The contents of the studies conducted by the Environmental Committee and the Information Disclosure Committee, which are chaired by executive officers, as well as by its subcommittees and working groups under their supervision, are scrutinized by the Sustainability Management Committee, which is chaired by the officer in charge. The Sustainability Management Committee notifies Board of directors of the key issues. The PDCA cycle has implemented to ensure matters pointed out by Board of directors throughout the company.



<Detailed Information>
Basic policy of sustainability:
https://www.hamamatsu.com/jp/ja/our-company/sustainability-and-csr/hamamatsu-photonics-sustainability.html >
Fundamental environmental policy:
https://www.hamamatsu.com/jp/ja/our-company/sustainability-and-csr/environment/environmental-management.html >

Strategy

We recognize that various changes due to climate change will affect our business. In order to identify the most important risks and opportunities, we conducted a scenario analysis at 1.5/2°C and 4°C for our entire business in the following steps.



01 Identification of key risks and opportunities

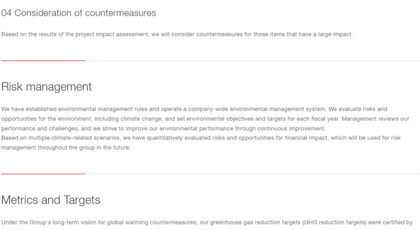
We identified the climate change risks and opportunities facing the company now and in the foreseeable future. We scrutinized the interests of our stakeholders and their future significance. As a result, we identified 16 transition and physical risks and opportunities.

Degree of Impact	Risks		Opportunities
	Transition	Physical	
High	#1 Increase in operational costs due to introduction of carbon tax/emissions trading scheme #2 Increased burden and risk of fines due to stricter disclosure requirements and regulations #3 Loss of reputation among customers, decrease in sales, and loss of competitiveness #4 Short-term increase in operating costs due to introduction of renewable energy and promotion of energy conservation #5 Tighter regulations on raw materials	#6 Increased risk of business shutdown and decreased sales due to severe wind and flood damage #7 Increased damage due to severe wind and flood damage #8 Increased air conditioning and cooling costs due to higher average temperatures #9 Increased risk of business shutdowns and decreased sales due to employees' inability to come to work due to higher average temperatures #10 Increased risk of business shutdown anddecreased sales due to employees' inability to come to work due to severe wind and flood damage	#13 Increase in sales through the provision of products and services that contribute to addressing climate change #12 Increase revenues by entering new markets #13 Decrease in expenses due to gains in client and investor reputation #14 Increase in revenues through introduction of renewable energy and promotion of energy conservation #15 Long-term increase in sales and decrease in expenses due to enhanced disaster resilience
Mid Low	#16 Loss of reputation and competitiveness among investors	・Decrease in sales resulting from lower production due to lower rainfall at the water sources from which the water is withdrawn	

02 Definition of scenario groups

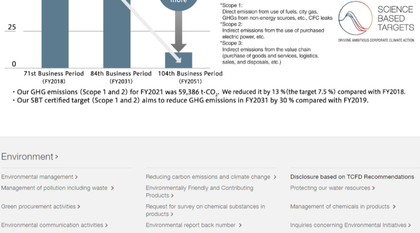
We set 1.5/2°C and 4°C scenarios for 2030 and considered changes in the external environment and stakeholders with regard to adaptation to climate change and the transition to a low-carbon society. We also projected changes in our customer sectors that may occur as a result of these changes, and examined the degree of impact on our business.

・Case of 1.5/2°C in 2030



Impact on the Company as a whole
Growing demand for environmental measurement and analysis and renewable energy-related products, but also for decarbonization efforts in product manufacturing processes

・Case of 4°C in 2030



Impact on the Company as a whole
While the risk of shutdowns in our company and supply chain will increase, we will be able to expand new business opportunities by responding to market demand for climate adaptation.

03 Business Impact Assessment

A sensitivity analysis was performed to assess the potential impact of each scenario on our strategic and financial position. For each of the climate change risks and opportunities with a high degree of importance, we examined the business impact calculation methods and calculated and examined them from available internal and external parameters. Examples are as follows;

Types		Impact on Business in 2030	Potential Financial Impact	
			1.5/2℃	4℃
Risks	Transitional	Decrease in sales due to lower product competitiveness and sluggish customer evaluations	High	-
		Short-term increase in operating costs due to introduction of renewable energy and promotion of energy conservation	Mild	-
	Physical	Business shutdowns (production sites, logistics, inventory, supply chain) and sales decline due to severe wind and flood damage	Mild	High
		Damage to manufacturing sites due to severe wind and flood damage and increased restoration costs	Mild	High
Opportunities		Medical and biotechnology equipment: Increased sales of related products for specimen testing equipment	Mild	Mild
		Industrial Equipment: Increased sales of related products for EV battery inspection systems	Mild	Mild
		Analytical instruments: Increased sales of related products for environmental analysis	Mild	Low

04 Consideration of countermeasures

Based on the results of the project impact assessment, we will consider countermeasures for those items that have a large impact.

Risk management

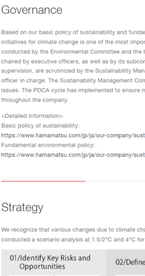
We have established environmental management rules and operate a company-wide environmental management system. We evaluate risks and opportunities for the environment, including climate change, and set environmental objectives and targets for each fiscal year. Management reviews our performance and challenges, and we strive to improve our environmental performance through continuous improvement.
Based on multiple climate-related scenarios, we have quantitatively evaluated risks and opportunities for financial impact, which will be used for risk management throughout the group in the future.

Metrics and Targets

Under the Group's long-term vision for global warming countermeasures, our greenhouse gas reduction targets (GHG reduction targets) were certified by the SBT Initiative, an international environmental organization, in October 2021 as scientifically based and in line with the Paris Agreement. Meanwhile, as key metrics in our mid- to long-term environmental strategy, we have established, evaluated, and managed GHG emissions, water usage, renewable energy usage, etc. GHG emissions are calculated for Scope 1, 2, and 3* in accordance with the GHG Protocol, and third-party verification is conducted. 74th fiscal year (ending September 30, 2021) GHG emissions (Scope 1 and 2) were 59,386 t-CO_2 in the 74th fiscal year (ended September 30, 2021), a reduction of approximately 13 % (target 7.5 %) from the 71st fiscal year (ended September 30, 2018).

<Detailed Information>
Environment : https://www.hamamatsu.com/jp/en/our-company/sustainability-and-csr/environment.html >
ESG Data : https://www.hamamatsu.com/jp/en/our-company/sustainability-and-csr/esgdata.html >

▼Scope 1 and 2



▼Scope 3

Category 1	76% of suppliers by spend covering purchased products and service will have science-based targets by FY2026
Category 11	15% reduction by FY2031 (Compared to FY2019)

*Scope 1:
Direct emission from use of fuels, city gas, GHGs from non-energy sources, etc., CFC leaks
*Scope 2:
Indirect emissions from the use of purchased electric power, etc.
*Scope 3:
Indirect emissions from the value chain (purchase of goods and services, logistics, sales, and disposals, etc.)

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

・Our GHG emissions (Scope 1 and 2) for FY2021 was 59,386 t-CO_2, we reduced it by 13 %(the target 7.5 %) compared with FY2018.
・Our SBT certified target (Scope 1 and 2) aims to reduce GHG emissions in FY2031 by 30 % compared with FY2019.

Environment >

Environmental management >
Management of pollution including waste >
Green procurement activities >
Environmental communication activities >
Reducing carbon emissions and climate change >
Environmentally Friendly and Contributing Products >
Request for survey on chemical substances in products >
Environmental report back number >
Disclosure based on TCFD Recommendations
Protecting our water resources >
Management of chemicals in products >
Inquiries concerning Environmental Initiatives >