

Response to Climate Change



Most relevant SDGs

Information Disclosure Based on TCFD Framework



As climate changes have significant impacts on the society, the Hoshizaki Group has regarded them as a material social issue to address. Toward the realization of a decarbonized society at which the Paris Agreement is aiming, Hoshizaki will aim at a 50% reduction (compared to the result in 2014) in CO₂ emissions from business activities (Scope 1 & 2) as an interim goal for 2030. Furthermore, to achieve carbon neutrality in 2050, we are providing products and services which enable the reduction in environmental burdens and promoting development of environmental technologies. Expressing our agreement on TCFD Recommendations in February 2022, we have been proceeding with information disclosure based on TCFD framework for the purpose of good communication with shareholders, investors, and other various stakeholders.

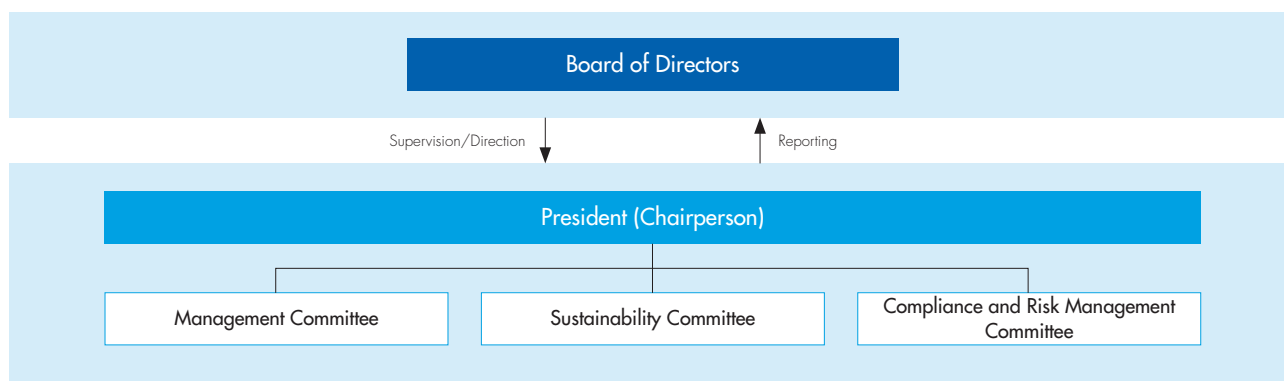
Progress of Initiatives for Four Items Recommended by TCFD (as of June 30, 2022)

Hoshizaki's Initiatives	
Governance	<ul style="list-style-type: none"> • Manage the climate change issue at management level with the Sustainability Committee established and chaired by Representative Director, President & COO • Deliberate to determine investments related to decarbonization • Promote priority measures and action plans formulated by the Sustainability Committee across the Company, and report the progress to the Board of Directors
Strategy	<ul style="list-style-type: none"> • Develop the five-year management vision which clarifies measures for social issues including responses to the decarbonization • Identify risks and opportunities through the scenario analysis in consideration of 2°C and 4°C Scenarios • Analyze impacts of the risks and the opportunities on business and finance
Risk management	<ul style="list-style-type: none"> • Manage risks with material impacts on business results as a priority management risk with the Sustainability Committee established • Determine appropriate measures from a viewpoint of the Company-wide risk management, sharing risk information with the Compliance and Risk Management Committee
Indicators and targets	<ul style="list-style-type: none"> • Verify CO₂ emissions of HOSHIZAKI CORPORATION (Scope 1 & 2) • Set interim targets for 2030 and establish action plans <p><Result in 2021> • CO₂ emission (Scope 1 & 2): 10,622 tCO₂ <Target for 2030> • CO₂ emission (Scope 1 & 2): 6,874 tCO₂ (down 50% compared to the result in 2014) <Target for 2050> • Aim at net zero CO₂ emission from business activities (Scope 1 & 2)</p>

Governance

Sustainability Promotion System

Hoshizaki established the Sustainability Committee as an organization for promoting measures for social and environmental general issues including responses to climate changes. The Committee has in place a system to consider and discuss sustainability issues in a cross-sectional manner, with managers of business departments added depending on themes to discuss.



The Sustainability Committee is quarterly held. Business risks related to climate changes are shared with the Compliance and Risk Management Committee and reported to the Board of Directors as needed.

Strategy

Scenario Analysis for Climate Changes

Hoshizaki has implemented the scenario analysis toward 2030 and 2050, assuming 2°C and 4°C temperature zones as scenarios of future temperature rise.

References/Scenarios

- World Bank "State and Trends of Carbon Pricing 2021"
- IEA "World Energy Outlook 2020," STEPS (current policy scenario), SDS (Sustainable Development Scenario)
- IPCC AR5, RCP2.6 (2°C Scenario), RCP8.5 (4°C Scenario)

Risks and Opportunities Related to Climate Changes in 2°C/4°C Scenarios

Evaluation of financial impacts of risks and opportunities related to climate changes based on the scenario analysis is as follows.

	Risk	Financial impact	Opportunity	Financial impact
2°C Scenario (On the assumption of the advance in low-carbon society)	A rise in raw materials procurement costs	Large	Expansion in demand for replacement with natural refrigerants and carbon-free products	Large
	Increase in burdens of R&D costs and capital investment due to response to stricter regulations on refrigerants and further decarbonization of products	Middle	Increase in demand for food refrigeration and edible and commercial ice due to temperature rise	Middle
	Increase in procurement costs of renewable energy and alternative fuels	Small	Increase in demand for energy-saving products	Middle
			Increase in demand for monitoring of flammable gas leak and inspection service at customers, due to use of flammable natural refrigerants	Small
4°C Scenario (On the assumption that low-carbon society is not promoted)	Shrinking of the restaurant market due to fierce heat and the spread of infectious diseases	Middle	Increase in demand for food refrigeration and edible and commercial ice due to temperature rise	Large
	Rise in raw materials procurement costs due to disruption of supply chain	Small	Increase in demand for sanitary products	Middle
	Increase in costs for BCP measures	Small	Increase in demand for automatic kitchen, remote operation/support due to deterioration of kitchen environment caused by fierce heat, and labor shortage	Middle
			Increase in demand for product maintenance due to disasters and other factors	Middle

The degree of financial impacts is graded on three levels, Large, Middle, and Small, according to possibility of risks and opportunities surfacing, as well as impacts on revenue during a period.

Response to Stricter Regulations on Refrigerants and Development of Products Free from Greenhouse Gas

Regulations on refrigerants and foaming agents which emit greenhouse gas (GHG) are being tightened. In Europe, the sale of commercial refrigerator-freezers using HCFC refrigerants (GWP over 150) was banned in 2022, and, at the same time, total volume control for HCFC was introduced. We expect demand for non-CFC products to increase also in Japan.

In 2009, the Hoshizaki Group commenced the manufacture and sale of the world's first commercial ice machines that use propane (R290), a natural refrigerant, early responding to tightened regulations in Europe. We will further promote technological development, and expand a lineup of products free from greenhouse gas.

Hoshizaki's Lineup of Refrigerants/Foaming Agents (as of December 2021)

Type	Name	Ozone layer	Global Warming Potential (GWP)	Regulation	Refrigerants (Domestic)	Refrigerants (Overseas)	Foaming agent (Domestic)	Foaming agent (Overseas)
CFCs	CFC	Destructive	High	Total ban				
CFCs	HCFC	Not so destructive	High	Ban in principle				
Alternative to CFCs	HFC	No impact	High	Regulated overseas	○	○	○	○
Non-CFC	HFO	No impact	Very low				○	○
Non-CFC	Cyclopentane	No impact	Very low				○	○
Non-CFC	Natural refrigerant (HC)	No impact	Very low		○	○		

Natural refrigerants are considered not to affect the environment if vented to atmosphere. This is because a substance which exist in nature is used as refrigerant as is, ozone depletion potential is zero, and GWP is extremely low. Meanwhile, among natural refrigerants, a type of refrigerant called HC is flammable with possibility of burning and explosion due to leak of refrigerants. Therefore, it is required to ensure safety.

HC refrigerant used by Hoshizaki: isobutane (R600a), propane (R290)

Risk Management

The Sustainability Committee conducts planning/formulation and management related to climate changes, promoting the Company-wide measures for climate changes.

The Sustainability Committee evaluates, discriminates, and manages impacts of climate changes on the Company. The Committee is responsible for integrating the identified impacts of climate changes in the Company-wide risks by sharing information with the Compliance and Risk Management Committee as needed.

The Sustainability Committee deliberates and evaluates impacts of climate changes and their countermeasures. The Committee sets a policy to take measures for minimizing sustainability risks including climate changes, formulates priority measures and targets, and develops action plans.

The Compliance and Risk Management Committee is periodically held, evaluates contents of reports and recommendations, and determines appropriate measures from a viewpoint of the Company-wide risk management.

The Board of Directors receives reports on situation and measures for risk management related to climate changes from the Sustainability Committee and the Compliance and Risk Management Committee, and supervises them.

Indicators and Targets

Setting the target of reducing CO₂ emission from business activities (Scope 1 & 2) to net zero by 2050, the Hoshizaki Group is promoting thorough energy-saving activities and proactive utilization of renewable energy.

Changes in CO₂ Emissions [2013 to 2021, tCO₂]

	2013	2014	2015	2016	2017	2018	2019	2020	2021
Scope 1	2,819	2,855	2,776	2,644	2,691	2,688	2,566	2,250	2,543
Scope 2	9,702	10,894	10,693	10,584	10,820	10,757	9,738	8,260	8,079
Scope 1 & 2	12,521	13,749	13,469	13,228	13,511	13,445	12,304	10,510	10,622

**Interim (2030) target to reduce
CO₂ emission (Scope 1 & 2)**

CO₂ emission
in 2030

6,874 t-CO₂ (down 50% compared to the result in 2014)

<Verified organizations: HOSHIZAKI CORPORATION, Head Office Factory, and Shimane Factory>

Road Map Toward Achievement of Targets

