

[Sustainability]

Response to Climate Change Risks

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I. Policy on climate change

Our position and basic policy on climate change

With “contribution to global environment” as our corporate principles, we always seek to be a construction company that is friendly to people and the earth, considering the importance of harmony between the living environment and nature. In fiscal 2018, we established our [Environmental Policy](#) “[Green Challenge 2030](#)”. We set KPIs (targets) to be achieved by fiscal 2030 as a general construction company.

Climate change is a risk for us but also an opportunity. Stricter environmental regulations and more frequent natural disasters associated with the transition to a decarbonized society may adversely affect the Company's finances over the medium to long term. At the same time, we are convinced that taking swift action to avoid and reduce these risks will also lead to business opportunities.

To accelerate our response to climate change, in fiscal 2021, we set sustainability promotion organizations in each division. We established the cross-sectional Sustainability Transformation (SX) Promotion Project. We plan to focus on the project to respond to risks and opportunities related to climate change. We will also incorporate our response to risks and opportunities related to climate change into our next Medium-term Management Plan (2022 to 2024) to achieve a sustainable society and the Company's sustainable growth.

II. Out approach to the disclosure items recommended by the TCFD

1. What is the TCFD?

The TCFD is the Task Force on Climate-Related Financial Disclosures, established by the Financial Stability Board to examine climate-related disclosures and how financial institutions should respond. The TCFD Final Report (TCFD Recommendations), published in 2017, provides a framework for companies to disclose information on climate-related risks and opportunities voluntarily. The report recommends disclosing information on governance, strategies, risk management, and indicators and targets. We disclose information under the recommendations of the TCFD.



2. Governance

Under the supervision of the Board of Directors, the Sustainability Promotion Committee chaired by the Representative Director President & CEO deliberates on sustainability measures*. The Board of Directors resolves important matters after deliberation by the Management Committee. We have established sustainability promotion organizations in each division and created a cross-organizational SX Promotion Project led by the General Manager of the Corporate Planning Division (Managing Executive Officer). These organizations are responsible for planning, developing, and managing sustainability measures, including climate change.



Meeting	Chair	Secretariat	Role
Board of Directors	Chairman	General Affairs Department	Deliberation and supervision of sustainability measures*
Executive Management Meeting	President	Corporate Planning Department	Deliberation of sustainability measures*
Sustainability Promotion Committee	(Chair) President	Sustainability Promotion Department	Deliberation of sustainability measures*

Project	Leader	Secretariat	Role
SX Promotion Project	Division Director of Corporate Planning Division	Sustainability Promotion Department	Review and implementation of sustainability measures* at the practical level

* Including the setting of policies and goals related to climate change and other sustainability matters and the management of progress

3. Strategies

We analyzed scenarios for four businesses (civil engineering, construction, overseas, and new areas) to identify the risks and opportunities that climate change poses to the Company and to examine their impact.

(1) Assumptions for scenario analysis

Risks related to climate change can be divided into transition risks (mainly policy risks) and physical risks (mainly natural disaster risks). We worked on an analysis assuming two scenarios: a "1.5°C to 2°C scenario" involving maximum transition risks and a "4°C scenario" involving maximum physical risks. We set the assumptions for each scenario based on the future climate projections published by various international organizations and the Green Growth Strategy Through Achieving Carbon Neutrality in 2050 formulated by the Japanese government. We assumed a medium- to long-term time frame (2030 to 2050).

Primary sources of scenario information

Scenario classification	Scenario name	Source
1.5°C to 2°C	Sustainable Development Scenario (SDS)	World Energy Outlook 2020 by International Energy Agency (IEA)
		Energy Technology Perspectives 2020 by IEA
	—	1.5°C Special Report by Intergovernmental Panel on Climate Change (IPCC)
	—	Green Growth Strategy with Carbon Neutrality in 2050 by METI
4°C	Public Policy Scenario (STEPS)	World Energy Outlook 2020 by IEA
	Representative Concentration Pathway Scenario (RCP) 8.5	AR5 by IPCC

1.5°C to 2°C scenario

The 1.5°C to 2°C scenario involves introducing strict environmental regulations aimed at achieving carbon neutrality, leading to the development and spread of environment-related technologies. In this scenario, global greenhouse gas emissions are assumed to be reduced, with low physical risk and high transition risk. Specifically, we assume that the world will have achieved carbon neutrality by 2050. We also assume that more and more (new and existing) ZEB buildings will be constructed, more medium- and high-rise wooden buildings will be constructed, and clients will conduct CO₂-conscious public procurement by evaluating low-carbon materials and construction methods.

4°C scenario

The 4°C scenario involves a scenario where strict environmental regulations are not introduced, with global greenhouse gas emissions continuing to rise and natural disasters occurring more frequently. This scenario assumes high physical risks and low transition risks. Specifically, we assume that, as of 2050, the construction of ZEB buildings (new and existing) will not be sufficiently promoted, and the development of innovative technologies (such as CCS* and hydrogen) will be delayed, causing an increase in natural disasters. We also assume that the development of disaster prevention infrastructure and reconstruction from natural disasters will be more demanded.

* Carbon dioxide Capture and Storage (CCS) is the process to separate CO₂ emitted from sources such as power plants and chemical plants from other gases, collect it, and store or inject it deep into the ground.

(2) Identifying risks and opportunities related to climate change

Based on the scenario analysis, we have summarized the key climate change-related risk and opportunity factors and their expected financial impacts, as shown in the table below. We identified 16 major financial impacts. Of these, two factors were identified as having an impact on the profitability of all four businesses: “Risk: price fluctuation (surge) of construction materials such as cement and steel” and “Opportunity: increased demand for construction of renewable energy power generation facilities and related facilities.”

◎: Factors affecting all four business areas ○: Factors assessed as affecting two or three business areas

Scenario	Classification	Factor	No.	Financial Impact	Risk	Opportunity
1.5°C to 2°C	Policy and technology	<ul style="list-style-type: none"> Strengthening of energy conservation standards for buildings and introduction of restrictions on total energy consumption Progress in ZEB technology and cost reduction Expansion of the availability of ZEB subsidies 	①	Increase in orders for new construction, renovation of existing buildings, and increased demand for ZEB		○
			②	Increased carbon tax burden	○	
			③	Increased need for technologies to extend the service life of structures		○
		<ul style="list-style-type: none"> Progress in low-carbon technologies for cement and steel, and diffusion of alternative materials Strengthening of policies to increase the carbon stock in society Progress in technology for fire-resistant wooden buildings and cost reduction 	④	Price fluctuations of construction materials such as cement and steel	◎	
			⑤	Increased demand for fire-resistant wooden buildings		○
			⑥	Increased demand for construction of renewable energy generation facilities and related equipment		◎
	Society	<ul style="list-style-type: none"> Increase in the number of environmentally conscious clients (public and private) 	⑦	Increased demand for construction methods that make the construction process low-carbon		○
			⑧	Restriction of bidding for less environmentally friendly construction methods and materials by strengthening CO ₂ -conscious public procurement	○	
			⑨	Increased research and development costs for low-carbon construction processes	○	
	4°C	Chronic*1	Average temperature increase	⑩	Increased cost of securing labor (due to spread of infectious diseases)	○
⑪				Increased costs for measures, such as human monitoring (due to reduced efficiency in outdoor work)	○	
⑫				Difficulty in recruiting human resources (due to reduced efficiency in outdoor work)	○	
Acute*2		Decrease in precipitation	⑬	Increased demand for construction of water-related environmental facilities (reclaimed water use)		○
			Increase in torrential rains, typhoons and floods	⑭	Loss of business opportunities due to flooding, damage, or relocation of occupied buildings, factories, or construction sites	○
		⑮		Increased demand due to flooding, damage, or relocation of client buildings and factories		○
Policy		<ul style="list-style-type: none"> National territory reinforcement policy Increase in the number of clients (public and private) with a high awareness of disaster prevention 	⑯	Increased demand for natural disaster countermeasure construction		○

*1: Changes in rainfall and weather patterns, increase in average temperature, sea level rise, etc.

*2: Increase in the severity of extreme weather events such as cyclones and floods, etc.

(3) Reviewing countermeasures based on scenario analysis

We summarized the 16 financial impacts of climate change and identified seven themes that lead to the acquisition of opportunities and five themes that lead to the reduction or avoidance of risks as the direction for future efforts. We will incorporate the risks and opportunities identified this time into the measures of each division in the next Medium-term Management Plan (2022 to 2024). In the plan, we aim to achieve both a sustainable society and sustainable growth for our company.

Classification	Theme	No.	Business line			
			Civil engineering	Building construction	Overseas	New area
Acquisition of business opportunities	1. ZEB	①		○	○	
	2. Renewable energy	⑥	○	○	○	○
	3. Fire-resistant wood construction	⑤		○	○	
	4. Long service life	③	○	○	○	
	5. Disaster countermeasures and reconstruction	⑮⑯	○	○	○	
	6. Water-related environmental facilities	⑬	○		○	
	7. Low-carbon construction materials and processes	⑦⑨	○	○	○	
Risk reduction and avoidance	1. Material price	④	○	○	○	
	2. Carbon tax	②	○	○	○	
	3. CO ₂ -conscious procurement	⑧	○	○	○	
	4. Securing labor force	⑩⑪⑫	○	○	○	
	5. Natural disaster intensification	⑭	○	○	○	

As measures for addressing the major risks related to climate change, we

- evaluate disaster risks and implement countermeasures in buildings such as the head office and plants,
- implement measures under the Disaster Response Manual of the Technical & Engineering Service Division at the R&D Center,
- evaluate and identify potential emergencies and accidents that may affect the environment through the environmental management system, and create, implement, and maintain procedures for taking measures for the identified matters,
- purchase property and fire insurance for PC plants and the R&D Center, and
- have buildings under construction insured by construction work insurance, civil engineering work insurance, or assembly insurance according to the nature of the work.

As countermeasures against heat stroke in workplaces, we use the Health Checklist (Prevention of Heat Stroke) prepared with advice from public health nurses, and

- promote understanding of each employee's health status and strengthen management guidance for managers, and
- use the "Ministry of Environment's Heat Stroke Prevention Information Site" to check the WBGT (heat index) forecast every morning for the location of our workplaces to issue warnings.

In terms of material procurement, we

- strive to prioritize the procurement of materials, equipment, construction methods, technologies, and office supplies with less environmental impact (green procurement).

4. Risk Management

(1) Process to identify and assess risks related to climate change

In fiscal 2020, we identified the materiality that we should address. After considering the importance for the Company and the one for stakeholders, we concluded that the climate change issue is one of our priorities. For more information on identifying materiality, please refer to “[Materiality and KPIs](#).” We plan to show the relative importance of climate-related risks compared to other risks.

(2) Process to manage risks related to climate change

The Sustainability Promotion Committee identifies risks related to climate change. To assess risks related to climate change, we identify the causes of climate change in each business. We then identify future changes in regulations, society, technology, weather conditions, and other factors under the 1.5°C to 2°C and 4°C scenarios, review the degree of impact on our finances, and reflect it in our measures. Risks related to climate change have also been integrated into the company-wide risk management process under the jurisdiction of the Corporate Planning Department. Physical risks such as natural disasters and transition risks related to the strengthening of environmental regulations are also subject to management.