

# Addressing Climate Change

## Introduction

Our Group sets targets related to ESG and are making efforts toward achieving them not only for sustainable growth in our Company through the safe and steady supply of energy that considers the global environment, but also for the contribution for the sustainable development of society by solving global social issues.

On the environmental front, our goal is to build a viable business foundation that can contribute to the sustainable development of society by analyzing the risks and opportunities brought about by climate change while reflecting them in our management plan and policy, which are all targeted toward realizing a decarbonized society.

## Support for the TCFD Recommendations

In May 2019, our Company declared our support for the recommendations of the Task Force on Climate-related Financial Disclosures or TCFD\*.

Recognizing the size of the impacts that our Group business activities have on the global environment, we declare our support for the TCFD Recommendations to “analyze and disclose business risks and opportunities originating in climate change over the medium and long terms in order to reduce risks of financial market destabilization.”

\* TCFD was established by the Financial Stability Board, which is an international agency that has central banks, financial regulatory authorities and other organizations from major countries as members. In total, 1419 organizations around the world, including financial institutions, businesses and governments, declared their support for the TCFD Recommendations as of September 16, 2020.



## Disclosure requirements in TCFD Recommendations

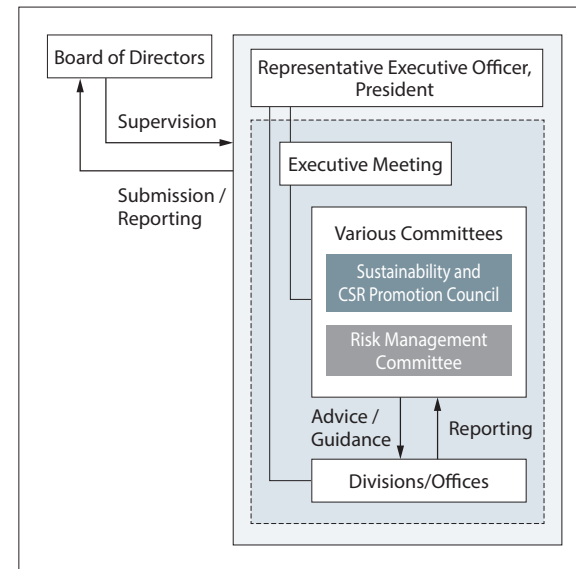
Category	Organizational governance related to climate change risks and opportunities	Strategies	Risk management	Indicators and objectives
Governance	<ul style="list-style-type: none"> <li>Board of Directors' supervisory system for risks and opportunities</li> <li>Management's role in assessing and managing risks and opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Short-, medium- and long-term risks and opportunities</li> <li>Robustness of organizational strategies taking into account various climate scenarios such as the 2°C target</li> </ul>	<ul style="list-style-type: none"> <li>Identification, assessment and management status of climate-related risks</li> <li>Risk identification and assessment processes</li> <li>Integration status of comprehensive organizational risk management</li> </ul>	<ul style="list-style-type: none"> <li>Greenhouse gas emissions (Scope 1, 2 and 3)</li> <li>Administrative targets and results for risks and opportunities</li> </ul>
Strategies	<ul style="list-style-type: none"> <li>Possible impacts on organizational businesses and financial affairs</li> </ul>	<ul style="list-style-type: none"> <li>Impacts on businesses, strategies and financial affairs</li> </ul>	<ul style="list-style-type: none"> <li>Risk management processes</li> </ul>	<ul style="list-style-type: none"> <li>Indexes for organizational strategy and risk management</li> </ul>
Risk management				
Indicators and objectives	<ul style="list-style-type: none"> <li>Indexes and targets for assessment and management of climate-related risks and opportunities</li> </ul>			

## Governance

With climate change as a key business challenge, the Sustainability and CSR Promotion Council (chaired by the President) and the Risk Management Committee (chaired by the Vice President) shall jointly assess and address climate change issues (climate change strategies, materiality, risks and opportunities, etc.) while providing each operating division with advice and guidance as needed.

Meanwhile, the results of assessment and management conducted by the council and the committee are reported to the Board of Directors for approval and, at the same time, reflected in the Group's plans and policies.

## Climate change governance system



## Strategies

Our Group is engaged in analytical work based on data such as those published by the IEA, etc. on future demographics and electricity demand, focusing on three scenarios developed for the domestic electric power business based on two axes: the pace of technological development in CCUS\*, etc. and

decarbonization policies.

With these three scenarios in mind, we address climate change risks and opportunities while reflecting these factors in our business strategies.

\* CCUS (Carbon dioxide Capture, Utilization and Storage) is a technology where carbon dioxide is separated and recovered from emissions from thermal power plants, etc. for use in other industrial processes or for storage underground.

## Three scenarios toward 2050

2°C technology advancement	Thermal power generation accounts for a certain proportion of the power generation mix, as technologies such as CCUS continue to advance.
2°C technology delay	Thermal power generation is heavily regulated, with technological innovation not progressing.
4°C	The 2030 government target (26% reduction in GHG) remains in place.

Note: These three scenarios are not forecasts, but assumptions based on events expected to take place in the future.

## Scenario analysis results

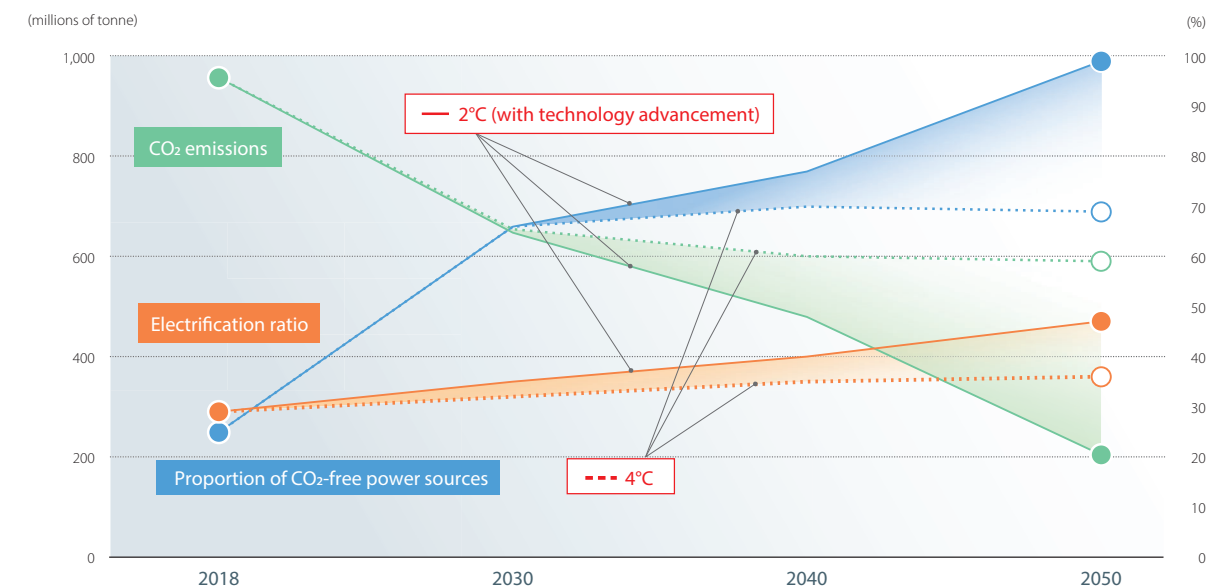
The results of the scenario analysis show that CO<sub>2</sub>-free power sources account for almost all of the power generation mix in a 2°C world.

However, with innovation in technologies such as CCUS progressing, coal-fired thermal power generation, as a CO<sub>2</sub>-free

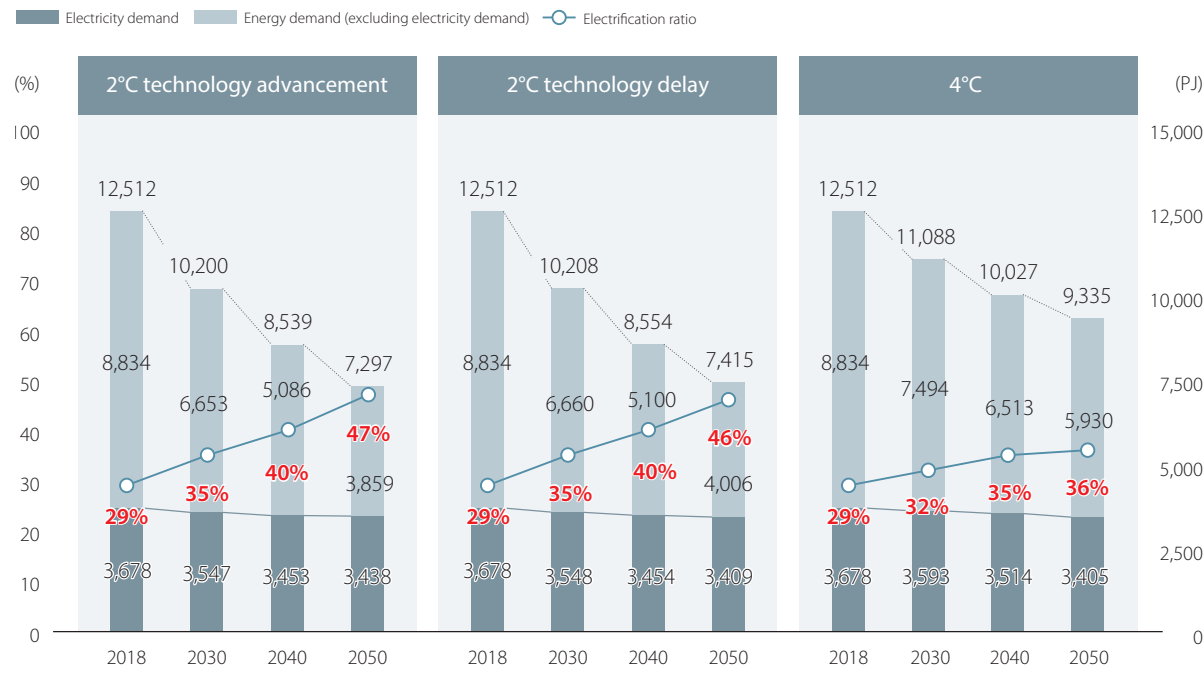
power source, accounts for a certain proportion of the power generation mix. While it is heavily regulated, should technological innovation not progress; this would virtually signify the termination of coal-fired thermal power generation.

Advancement in energy-saving technologies, etc., meanwhile, reduces the total energy demand in which the share of electricity demand increases.

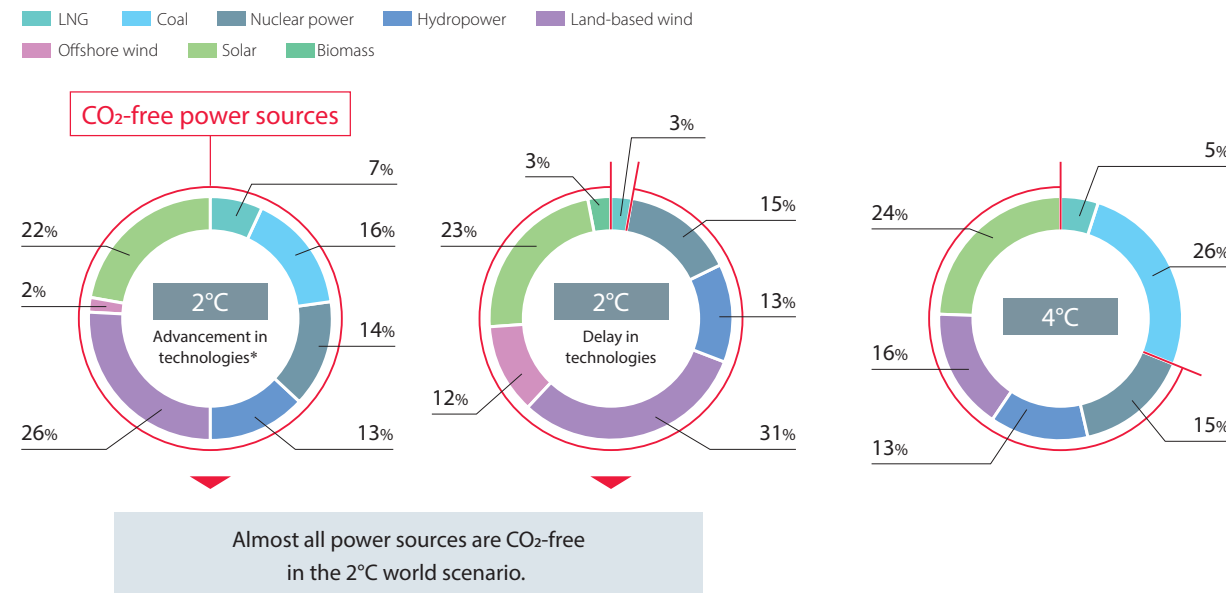
## Proportion of CO<sub>2</sub>-free power source and electrification ratio in Japan



Trends in total energy demand and electricity demand (Japan)



Breakdown of 2050 output by power source (Japan)



Note: Percentages may not sum up to 100 due to rounding.  
 \* Thermal power sources are considered CO<sub>2</sub>-free in the 2°C scenario (with technology advancement) due in part to the introduction of CCUS.

Identified climate change risks and opportunities

		Risks	Opportunities
Transition risks and opportunities	Policies	<ul style="list-style-type: none"> <li>Thermal power generation loses competitiveness due to the introduction of carbon prices while regulations on carbon emissions boost the costs of abatement.</li> <li>Other power sources lose competitiveness against renewable power sources.</li> </ul>	<ul style="list-style-type: none"> <li>Nuclear power generation gains competitiveness.</li> </ul>
	Technologies	<ul style="list-style-type: none"> <li>Demand decreases as renewable energy and energy-saving technologies make progress.</li> <li>Investment increases as carbon emission reduction technologies become more widespread.</li> </ul>	<ul style="list-style-type: none"> <li>The way electricity is used changes, driven by technological innovation.</li> </ul>
	Markets	<ul style="list-style-type: none"> <li>Environmentally unfriendly products lose competitiveness.</li> <li>Demand structure changes as EVs, storage batteries, etc. become more widespread.</li> </ul>	<ul style="list-style-type: none"> <li>Opportunities for investment in renewable energy increase.</li> <li>Earnings increase, with investment in ESG and decarbonization gaining momentum.</li> <li>Electrification advances, with decarbonization gaining momentum.</li> </ul>
	Reputation	<ul style="list-style-type: none"> <li>Nuclear power generation becomes less socially acceptable.</li> <li>Increases in CO<sub>2</sub> emissions and coefficients result in a bad reputation among customers.</li> </ul>	<ul style="list-style-type: none"> <li>A resilient business foundation boosts the confidence of customers and society, providing for greater opportunities.</li> </ul>
Physical risks and opportunities		<ul style="list-style-type: none"> <li>The restoration and reinforcement costs of power generation, transmission and distribution facilities increase due to intensified climate change.</li> </ul>	

Our Group's business strategy

Countermeasures for long-term financial impacts, determined through the identification of risks and opportunities, are reflected in our management plan.

The results of scenario analysis show that our business strategy in the Medium-term Management Plan (2019-2021) (addressing climate change and reducing environmental impacts as a leading decarbonization company focusing on nuclear power and renewable energy) is on the right path toward decarbonization.

We are thus committed to developing renewable energy as our main power source, thereby increasing the proportion of decarbonization power sources.

Meanwhile, as electrification is indispensable in realizing a decarbonized society, we will continue to provide valuable services to customers and society while building a new business model, taking advantage of electrification and decentralization opportunities. These are all designed to decarbonize our society as a whole and, by extension, boost earnings.

Risk management

Risks associated with our business activities are to be managed autonomously by each operating division (including our group companies). We shall enhance risk management for risks considered to have cross-organizational importance including the supervision of departments with specialized expertise on said risks that can provide advice and guidance to various operating divisions.

As climate change poses significant risks to the Group's business activities, efforts are underway to properly control various risks caused by climate change.

Specifically, a system to control company-wide risks along with other risks excluding those related to climate change (e.g., financial risks) determines the significance of each risk in view of its possible impact and probability, the results of which are plotted on a risk map so as to enable an overview of the status of risk management.

Moreover, risk assessment results are presented to the Executive Meeting and the Sustainability and CSR Promotion Council, with necessary risk control measures reflected in the Group's plan and policies to ensure sustainable growth in the future.

Indicators and objectives

Recognizing the size of the impacts that our business activities have on the global environment, we are committed to promoting renewable energy, effective use of nuclear power generation and improving the efficiency of thermal power generation, all of which are designed to promote decarbonization.

- Achieve 6 million kW of installed capacity by 2030s (2 million kW or more new development in Japan and abroad)
- Halve CO<sub>2</sub> emissions associated with power generation in Japan in FY 2030 (compared to FY 2013)
- Keep the top spot for the amount of CO<sub>2</sub>-free power generation in Japan.