Feature 1

# Response to climate change based on TCFD recommendations

As there is a worldwide trend toward low-carbon and no carbon-societies, the Kyuden Group, as a responsible energy business operator, will contribute to the creation of a sustainable society by actively undertaking global warming countermeasures and reducing greenhouse gas emissions.

In June of last year, we formulated Kyuden Group Management Vision 2030 (hereinafter "Management Vision"), and Kyuden Group is committed to "creating the future, starting from Kyushu", and our aim is "providing more prosperous, comfortable living to become our customers' No.1 choice".

We have set one of business performance targets the reduction of Kyushu's CO<sub>2</sub> emissions in 2030 by 70% (compared to FY2013). While promoting the use of all-electric energy, the use of energy sources that are low-carbon or non-carbon and other initiatives, we will consider appropriately climate-related risks and carry out sustainable corporate management.

To achieve these goals, we will take into consideration TCFD recommendations<sup>(\*)</sup> in analyses of long-term risks and opportunities caused by climate change. At the same time, by enhancing information disclosure in line with this framework, we will fulfill our information responsibilities to our stakeholders.

TCFD

TCFD: Task Force on Climate-related Financial Disclosures This task force was established by the Financial Stability Board (FSB) at the request of the G20 Finance Ministers and Central Bank Governors Meeting. In June 2017, TCFD issued a set of recomendations to encourage the disclosure of information related on the financial impacts of climate-related risks and opportunities, to aid investors in making appropriate

Disclosure items recommended by the TCFD and response to our disclosed content

The content of the disclosure items are based on TCFD disclosure recommendation

	TCFD disclosure recommendations			
Governance	<ul> <li>Construction of a supervisory system through internal committees, etc.</li> <li>Roles of management in evaluating and managing risks and opportunities</li> </ul>			
Risks/opportunities and countermeasures	<ul> <li>Identification of short-, medium-, and long-term risks and opportunities</li> <li>Impact of risks and opportunities on business, strategy, and financial planning</li> </ul>			
Metrics and goals	Setting of metrics used to evaluate risks and opportunities in strategy and risk management	<ul> <li>Setting of climate-related goals (KPIs) matched to business performance targets</li> <li>⇒ (P40)</li> </ul>		
	Risks/opportunities and countermeasures	Governance          • Construction of a supervisory system through internal committees, etc.         • Roles of management in evaluating and managing risks and         opportunities          Risks/opportunities         and         countermeasures           • Identification of short-, medium-, and long-term risks and opportunities         • Impact of risks and opportunities on business, strategy, and financial         planning          Matrice and goals          • Setting of metrics used to evaluate risks and opportunities in strategy		

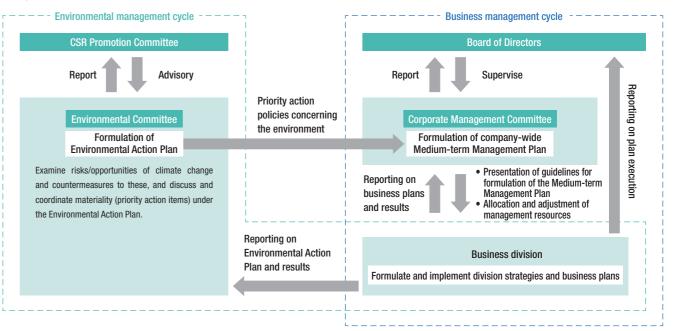
# **GOVERNANCE** Linking the environmental management cycle to the business management cycle

# Response structure for climate change (risk and opportunity assessment and management process)

Viewing our response to risks and opportunities associated with climate change as an important management issue, we will deliberate on materiality (major matters to address) involving climate change and other environmental issues within the CSR Promotion Committee chaired by the president of Kyushu Electric Power and within the Environmental Committee chaired by a vice president of Kyushu Electric Power, and will make efforts to improve and enhance our initiatives.

The priority action policies deliberated in the Environmental Committee are reflected in our company-wide Medium-term Management Plan, and are discussed and decided by the Corporate Management Committee and the Board of Directors. Each business division reports on the execution of its business plan to the Board of Directors.

#### Response structure



#### CSR Promotion Committee

Role:	Deliberation and coordination regarding basic policies and action plans for CSR activities overall, sustainability reporting, etc.	
Composition:	Chairperson: President of Kyushu Electric Power Vice chairperson: Kyushu Electric Power vice president or executive officer in charge of CSR Committee members: Kyushu Electric Power, vice presidents, members of the board of directors, senior managing executive officers, managing executive officers, officers connected to Kyushu Electric Power	
	Transmission and Distribution Co., Inc. <sup>(1)</sup> (appointed by the chairperson)	
Meetings:	Twice a year in principle	
Primary agenda:	Disclosure policy and overview of considerations by the Environmental Committee	

(\*) Following the spin-off in April 2020, these will continue cooperating and attend meetings as committee members, to promote CSR initiatives

#### Environmental Committee

Role:	Comprehensive deliberation of company-wide environmental activity strategies
Composition:	Chairperson: Kyushu Electric Power vice president or executive officer in charge of CSR
	Vice chairperson: Kyushu Electric Power director of the District Symbiosis Division
	Committee members: Kyushu Electric Power directors, deputy directors, and general managers appointed by the chairperson
Meetings:	Twice a year in principle
Primary agenda:	<ul> <li>Priority action items for the following year's Environmental Action Plan, based on the Management Vision</li> </ul>
	<ul> <li>Disclosure policies, written content, etc. based on TCFD recommendations</li> </ul>

# 2 Risks/opportunities and countermeasures Climate change countermeasures based on scenario analysis

# (1) Assumptions behind consideration

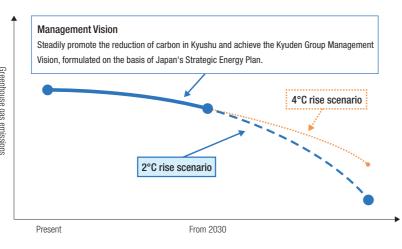
## Target periods

As Japan's medium- and long-term goals under the Paris Agreement target 2030 and 2050, and as the Management Vision that we released last year targets 2030, we set the scenario analysis target periods to 2030 and 2050.

## Envisioned scenarios

The scenario analysis assumes the 2°C rise scenario(\*1) as in Japan's medium- to long-term targets. Regarding the scenario, based on Japan's Strategic Energy Plan for 2030 and referencing forecast models by the IEA(\*2) for 2050, we analyzed the main impact factors concerning the electric power business, focusing on reduced carbon/decarbonization in power sources from the supply side, and electrification from the demand side. We identified potential risks and opportunities, and considered countermeasures to address these.

If measures to limit global warming to the 2°C rise scenario are not enforced, the global average temperature may rise by 4°C or more, with a risk of intensifying weather disasters. We examined the impacts of this based on the 4°C rise scenario of the IPCC("3).



(\*1) There is increasing discussion worldwide regarding action based on the 1.5°C rise scenario. However, in light of the fact that Japan's Strategic Energy Plan is formulated under the 2°C rise scenario, for the time being our group will consider and address risks and opportunities on the premise of that same scenario.

(\*2) The International Energy Agency (IEA) conducts surveys and creation of statistics on energy, and issues reports and books, World Energy Outlook (WEO, a forecast of energy markets over the medium to long term) is a well-known example (\*3) The UN Intergovernmental Panel on Climate Change (IPCC) is an intergovernmental organization that aims to perform comprehensive assessments of anthropogenic climate change, the impacts of change, and adaptation and mitigation measures from scientific,

Electrification rates on the way to decarbonization

Assumption in long-term strategy

45-60%

45-70%

Current

amount:

approx, 20%

## (2) Factors affecting forecasts and the electricity business

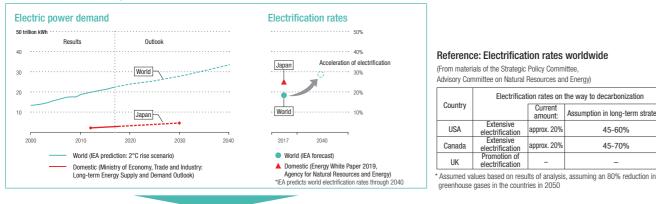
The 2°C rise scenario demands that action be taken from both the electricity supply and demand sides. Demand side

According to forecasts by IEA, global electrical power demand will continue to grow steadily from 2030, and electrification rate growth will accelerate.

technical and socioeconomic perspectives

• Japan's Strategic Energy Plan, predicts that electric power demand in Japan will increase gradually through 2030, and that the electrification rate will grow due to the advance of digitalization, and others.

#### Prediction model: Electrical power demand and electrification rate



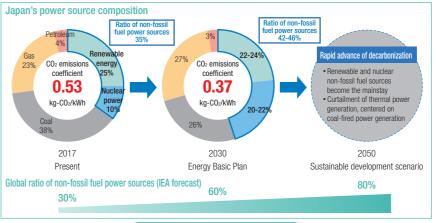
#### Major factors affecting the electricity business

- Proliferation of electrification in the transportation sector, including in automobiles, ships, and aircraft
- Acceleration of the shift to electrification of energy due to heightened safety and environmental orientation
- Further advancement of digital technologies such as the IoT and AI

#### Supply side

- According to forecasts by IEA, non-fossil fuel power sources will increase significantly around the world, with the ratio of non-fossil fuel power sources expected to reach 80% by 2050.
- Japan aims for carbon reduction by achieving the power source composition (energy mix) for 2030 indicated in the country's Strategic Energy Plan. Rapid progress in decarbonization is forecast from 2030.

#### Prediction model: Changes in electrical power source composition



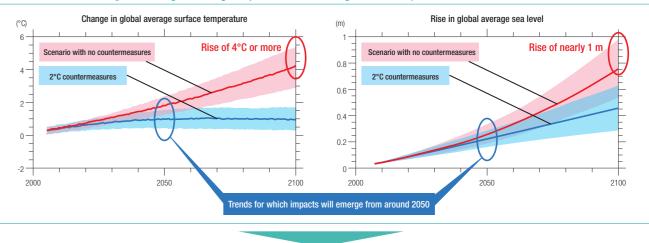
#### Major factors affecting the electricity business

- Growing demands for strengthened global warming regulations aimed at decarbonization
- Increased value of non-fossil fuel power sources, heightened need for large-scale adoption of renewable energy, decreased acceptance of fossil fuel use
- Low assessment of CO<sub>2</sub>-emitting businesses from investors
- Heightened need for carbon reduction/decarbonization technology, and progress in practical application of technology

### Climate disasters

Without the enforcement of global warming countermeasures, the global average temperature is predicted to rise by 4°C or more and the average sea level by nearly 1 m by 2100. There is concern that intensifying weather disasters and other physical risks will emerge, particularly after 2050.

#### Future Prediction Model: IPCC (prediction of global average temperature rise and average sea level rise)



#### Maior factors affecting the electricity business

- Torrential rains/flooding, increase in storms, intensification and prolongation of high temperatures/heat waves
- Increased damage to customers' facilities and electric power supply facilities
- Inoperability of resource development areas
- Increasing need for disaster prevention and mitigation

• It is thought that innovation (the practical application of innovative technology) is needed for the significant proliferation of such non-fossil fuel power sources.

Reference: Examples of innovative technologies that contribute to carbon reduction (From the long-term vision for 2030 onward from The Electric Power Council for a Low Carbon Society (ELCS)) · Renewable energy: Supercritical geothermal, innovative batteries, utilization of hydrogen

- Nuclear power: Small module reactors (SMRs), high temperature gas reactors
- Thermal power: Hydrogen power generation, CCS, CCUS
- Others: High-efficiency all-electric technology, wireless power transmission/power supply, etc.

# (3) Results of risk and opportunity analysis

Risks and opportunities related to climate change from 2030 onward are analyzed as follows, taking into account factors that affect the demand side and the supply side in the earlier-noted 2°C rise scenario, and the climate disaster in the 4°C rise scenario.

			Numbers in parentheses indicate relationship with the impact factors at left.			
Impacting factors	ng factors Risks					
Demand side (1) Shift to electrification in the transport	Policy measures/ regulation	(A)	Increased costs and investments associated with strengthening of greenhouse gas emission regulations ((4)			
(2) Acceleration of the electrification of energy	Technology	(B)	<ul> <li>Decreased grid stability associated with large-scale introduction of renewable energy/distributed power sources ((5), (6), (7))</li> <li>Technical adaptation to the proliferation of distributed power sources ((5), (6), (7))</li> </ul>			
(3) Further advance of digital technology	Market	(C)	• Loss of customers and withdrawal of investment associated with decreased acceptance of fossil fuel power generation ((4), (5), (6))			
Supply side	Determination	(D)	• Deterioration of corporate image due to passive stance on climate change initiatives ((5), (6), (7))			
<ul> <li>(4) Strengthening of global warming regulations</li> <li>(5) Expansion of needs for non-fossil fuel sources</li> </ul>	Climate disasters	Climate disasters (E) • Increased facility damage associated with increasing and intensifying climate disasters ((8), (5 • Increasing difficulty of fuel procurement associated with inoperability of resource development ((8), (9), (10))				
(6) Decreased acceptance of CO <sub>2</sub> -emitting						
business operators		Opportunities				
<li>(7) Progress of carbon reduction/decarbonization technology</li>	Products/	(F)	<ul> <li>Advance of electrification across the transportation sector ((1), (2))</li> <li>Proliferation of new energy services utilizing digital technologies ((3))</li> </ul>			
Climate disasters (8) Intensification of weather (9) Increased damage to power supply and	services	(G)	<ul> <li>Expansion of customer needs for carbon-free electricity ((5), (6), (7))</li> <li>Expansion of demand for low-carbon and decarbonization technologies in emerging countries, etc. ((5), (7))</li> </ul>			
demand equipment	Energy sources/	(H)	• Expansion of policies to support the development and adoption of zero-emission power sources ((4), (5), (6), (7))			
<ul> <li>(10) Inoperability in resource development areas</li> <li>(11) Evaporion of dispeter provention and</li> </ul>	resource efficiency	(I)	<ul> <li>Practical application of innovative technologies such as decarbonization technologies, storage batteries, and next-generation energy ((1), (2), (3), (7))</li> </ul>			
(11) Expansion of disaster prevention and mitigation needs	Resilience and	(J)	<ul> <li>Improved evaluation of business operators with regard to climate change response ((11))</li> <li>Increasing need for disaster prevention and mitigation ((11))</li> </ul>			

\* This scenario analysis is considered on the basis of scenarios from IEA, IPCC, etc. Many uncertainty factors are present after 2030 in particular, and the analysis was deliberately created based on what the company is able to envision, not based on predictions of outcomes

## (4) Examination of countermeasures and assessment of financial impacts

We examined risks from the perspective of reduction or mitigation to the degree possible, and examined opportunities from the perspective of proactively linking these to business opportunities. We then evaluated the financial impacts of these.

To achieve the goals of our Management Vision by 2030, we will undertake the promotion of EV proliferation, all-electric energy usage, and other electrification of energy consumption, as well as greater utilization of nuclear power, renewable energy, and other low-carbon power sources.

For the period from 2030 onward, we will take part in the industry's investigation of practical applications of innovative technologies, and will undertake promotion of digitalization, promotion of non-fossil power sources, and a shift to net-zero carbon from fossil fuel power sources.

Moreover, by appropriately considering and implementing measures against natural disasters that are expected to increase in severity, we aim to become a sustainable company.

## Measures to address risks and opportunities related to climate change Letters in parentheses indicate relationship with the risks and opportunities on the previous page.

h	rough 2030: To	ward carbon reduction		2030	) onward: T
All-plootsic opprav	Promotion of all-electric energy	Contribution to the expansion of the all-electric energy market through the development of all-electric residences, urban development, etc. within Kyushu (F) (P31)		Innovati	<ul> <li>Promotion</li> <li>Creation         <ul> <li>of new set</li> <li>through</li> </ul> </li> </ul>
	Promotion of EV utilization/ proliferation	Utilization in supply and demand adjustment functions, promotion of charging infrastructure development, and proliferation of EV sharing, while watching national government policies and prospects for market expansion (F) (P30)	ation of		
	Utilization of distributed power sources	Contribution to trading of surplus/insufficient power sources using distributed renewable energy sources, and to operation of regional energy supply systems (F) (P30, 34)		nnovation (practical application of	loT/Al uti
Parkon radiation /downshanization in names courses	Use/ development of renewable energy	Active utilization and development of biomass, offshore wind power, etc., including domestic and overseas geothermal development ( <b>B</b> , <b>D</b> , <b>G</b> , <b>H</b> , <b>I</b> ) (P27, 28, 33)			<ul> <li>Promotion</li> <li>Utilization and suppl</li> <li>Continue plus adva capabiliti</li> <li>Shift to net-ze</li> <li>Decarbor</li> <li>Manufact</li> <li>Overseas</li> </ul>
	Utilization of nuclear energy	Active utilization as an important base load power source that does not emit greenhouse gases (A, C, H, I) (P29)		innovative technology	
	Carbon reduction in thermal power generation	Strengthening of functions, such as improvement of output adjustment functions and unit thermal efficiency, to make renewable energy the primary source (A, G, I) (P29, 32, 33)		ology (*))	
CI	imate disasters	Strengthening of disaster countermeasures and structures based on national response policies, etc., and improvement of response capabilities $({\bf F}, {\bf J})$			Consideratior countermeas severity of na

Thinking concerning financial impacts

We qualitatively evaluated the degree of impact on our business, taking into account the scale of our consolidated ordinary income (results) in recent years. As national policies, energy market trends, and other factors may fluctuate due to changes in the external environment, this impact assessment is not conclusive.

# Metrics and Goals Setting of climate-related goals (KPIs) matched to business performance targets

In Japan's Fifth Strategic Energy Plan, nuclear power is positioned as an important base load power source that contributes to the stability of the long-term energy supply and demand structure, with the assurance of safety as its premise. Renewable energy is positioned as an important domestically produced, low-carbon energy source that is utilized with a view to reducing environmental impacts over the long term.

On the premise of an optimal energy mix based on the role of each of these power sources, our Management Vision sets the following business performance targets.

We have set these as climate change-related goals (KPIs) based on TCFD recommendations.

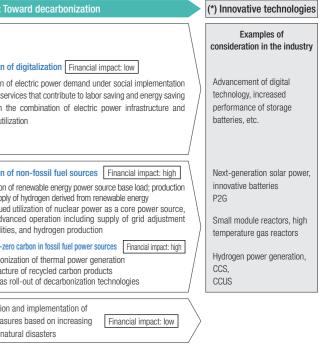
## (1) CO<sub>2</sub> emissions reduction: 26 million tons (FY2030, compared with FY2013)

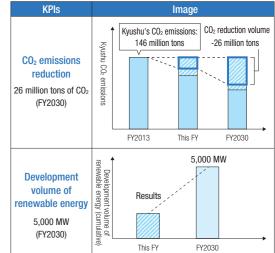
By improving our ratio of non-fossil fuel power sources through the use of nuclear power generation that does not emit CO<sub>2</sub> and the development and use of renewable energy, and by promoting electricity usage in many fields, we will contribute to the reduction of Kyushu's CO<sub>2</sub> emissions by 70% (26 million metric tons)<sup>(\*)</sup>.

(\*) The Japanese government's plan for countering global warming (decided by the Cabinet in May 2016) sets a medium-term goal of reducing greenhouse gas emissions by 26% in FY2030, compared to FY2013. Applying this target, Kyushu is required to reduce CO2 emissions by 38 million tons in FY2030, compared to FY2013.

#### (2) Development volume of renewable energy: 5,000 MW (cumulative total by FY2030)

Leveraging the outstanding O&M technological capabilities that we have built up, we will actively engage in the development and operation of renewable energy, including in our overseas businesses, and will contribute to the reduction of CO<sub>2</sub> on a global scale.





\* Kyuden's FY2013 CO2 emissions coefficient (adjusted) of 0.617kg-CO2/kWh is used in calculations of CO<sub>2</sub> emissions reduction