Taskforce on Nature-related Financial Disclosures

KYUDEN GROUP TNFD REPORT 2024

Sept 2024.

KYUSHU ELECTRIC POWER CO.,INC.

KYUDEN GROUP
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Contents

Introduction

The Kyuden Group (Kyushu EP(*) and group companies) is working towards the realization of a sustainable society, under the “Kyuden Group Environmental Charter", which serves as a guideline for “environmental management”, that means balancing business activities and the environment. This involves global efforts to conserve the global environment and coexist with the local environment. To steadily promote environmental management that balances business activities and the environment, the group follows medium- to long-term basic policies such as the “Environmental Action Policy", the “Medium-term ESG Promotion Plan", and the “Environmental Action Plan". These policies focus on solving regional issues through co-creation with local communities, conserving biodiversity, and engaging in forest management.

Additionally, during the formation of facilities, appropriate environmental assessments are conducted according to the characteristics of the facilities and regions to ensure environmental considerations and harmony with the surrounding environment. In operating facilities, the group complies with laws and agreements with local communities, promoting initiatives for the conservation of the global environment and the coexistence with the local environment.

In September 2023, the group conducted a trial analysis of nature-related risks and opportunities in business activities, referring to “The TNFD Nature-related Risk and Opportunity Management and Disclosure Framework Final Draft – Beta v0.4” and guidance for electric utilities.

This time, as an early adopter of TNFD, the Kyuden Group will disclose nature-related information by referring to “Recommendations of the TNFD (2023)” and additional sector guidance for electric utilities and power.

* The report concerns companies within the Kyuden Group.
The companies Kyushu Electric Power Co., Inc., and Kyushu Electric Power Transmission & Distribution Co., Inc., are abbreviated as Kyushu EP and Kyushu T&D, respectively.

Past Efforts for Nature

In response to the national and local governments’ sequential establishment of pollution prevention laws since the 1960s, Kyushu EP incorporated environmental conservation clauses, including those for living environments, into the construction agreement for the Oita Power Station Unit 1 in November 1965. Since then, the company has continued to implement pollution control measures that exceed environmental regulations. Regarding environmental impact assessments, the company conducted its first assessment in 1973, ahead of national mandatory requirements, for the Buzen Power Station construction plan. Since then, detailed evaluations using the latest scientific knowledge and technology have been conducted for power station construction and expansion plans in accordance with the Ministry of International Trade and Industry’s decision (1977) and the Environmental Impact Assessment Act (1999).

For natural environment conservation, during the construction of Omarugawa Power Station (pure pumped-storage power generation) located in the rich natural environment of central Miyazaki Prefecture, conservation measures were taken such as halting construction during the breeding season of the endangered mountain hawk-eagle (classified as Endangered IB) living around the dam, and transplanting the valuable *koyamaki*, or Japanese umbrella pine tree, along with its companion trees. Additionally, to secure water sources, the company maintains and manages 4,447 hectares of company-owned forests, mainly within the Aso-Kuju National Park area, with part of these forests certified by FSC® for sustainable forest resource utilization.

In response to climate change, Kyushu EP formulated the “Kyuden Group Carbon Neutral Vision 2050” in April 2021. As part of this initiative, the company aims to further increase the ratio of zero-emission power sources and promote “decarbonization and low-carbonization of power sources” to stably supply electricity with “net zero” CO_2 emissions, as well as “promotion of electrification” to contribute to CO_2 emission reductions on the demand side.

Specifically, for “decarbonization and low-carbonization of power sources”, the company is promoting the development of offshore wind power, which has a high introduction potential, and establishing integrated control technology for distributed energy resources. For nuclear power generation, which does not emit CO_2 during power generation, the company will maximize its use by improving the utilization rate of existing reactors, prioritizing safety and understanding from local communities. For thermal power generation, the company is contributing to the expansion of renewable energy introduction through LNG combined cycle power generation, which has a high ability to adjust output fluctuations. Additionally, the company is actively working on measures such as phasing out inefficient coal-fired power by 2030, utilizing hydrogen and ammonia fuels that do not emit CO_2 during combustion, and considering the application of CO_2 capture technology.

For “promotion of electrification", to contribute to achieving a 100% electrification rate by 2050, the company proposes “safe, secure, comfortable, economical, and environmentally friendly lifestyles” based on all-electric homes for the household sector and heat pump systems for the business sector. Furthermore, to co-create a zero-carbon society with local communities, the company contributes to the construction of regional energy systems that optimally manage and control energy by combining grid power with local and urban renewable energy and storage batteries.

[1] Forest Stewardship Council® (FSC) - Headquarters in Germany.

1. TNFD General Requirements

(a) The application of materiality

Kyushu EP primarily discloses information based on financial materiality approach, while also disclosing impacts on priority locations related to biodiversity based on impact materiality approach.

(b) The scope of disclosures

The Kyuden Group consists of Kyushu EP and its domestic and international subsidiaries and affiliates. The group engages in the following businesses: “Japanese Electric Power Businesses (Power Generation and Sales businesses and Transmission and Distribution businesses)”, “Overseas Businesses”, “Other energy services businesses”, “ICT services businesses”, and “Urban Development Businesses”.

In addition to the direct operations of thermal power generation (coal and LNG), nuclear power generation, hydroelectric power generation (general and pumped storage), geothermal power generation, solar power generation, wind power generation (onshore and offshore), biomass power generation, and transmission and distribution owned by Kyushu EP and its consolidated subsidiaries, an analysis was conducted on the upstream supply chain, including fuel procurement for thermal power generation (coal and LNG), nuclear power generation (uranium), biomass power generation (biomass fuel), and procurement of solar panels for solar power generation.

Furthermore, since most of the Kyuden Group’s power stations and transmission and distribution networks are located in Kyushu, the geographical scope is limited to Kyushu.

(c) The location of nature-related issues

For direct operations, the potential impacts of nearby power stations on protected areas and regions important for biodiversity were assessed and confirmed using the KBA database and related information about the power stations. As a result, the Sendai Nuclear Power Station, Otake Geothermal Power Station, Hatchobaru Geothermal Power Station, Yamagawa Geothermal Power Station, and Nagashima Wind Power Station were evaluated as sites that could significantly impact priority locations for biodiversity.

(d) Integration with other sustainability-related disclosures

The Kyuden Group publishes an integrated report, which includes climate-related financial disclosures based on the TCFD recommendations. In the “Kyuden Group Integrated Report 2024", the governance items for disclosures based on the TCFD recommendations are integrated with those based on the TNFD recommendations.

(e) The time horizons considered

In this report, the short-term period is set as the fiscal year 2023, the mid-term period aligns with the “Kyuden Group Management Vision 2030” for the fiscal year 2030, and the long-term period aligns with the “Kyuden Group Carbon Neutral Vision 2050” for the year 2050. The long-term period is also considered in scenario analysis.

(f) The engagement with Indigenous Peoples [3], Local Communities [4] and affected stakeholders

For direct operations, since there are no “IPLC (Indigenous Peoples and Local Communities)” as defined by TNFD in the operational areas, we report on initiatives related to the municipalities and local communities, which are the “affected stakeholders” at the power station locations.

[2] Others are limited to solar power stations (Hiroshima, Mie, Fukushima) and biomass power stations (Yamaguchi, Okinawa, Hyogo, Aichi, Nagano, Hokkaido).
[3] Refer to “Recommendations of the Taskforce on Nature-related Financial Disclosures (September 2023)” (Japanese version) Annex 5: Summary glossary and acronyms, “Indigenous Peoples” (P123).
[4] Refer to “Recommendations of the Taskforce on Nature-related Financial Disclosures (September 2023)” (Japanese version) Appendix 5: Summary glossary and acronyms, “Local Communities” (P126).
[5] Refer to “Recommendations of the Taskforce on Nature-related Financial Disclosures (September 2023)” (Japanese version) Appendix 5: Summary glossary and acronyms, “Affected stakeholders / affected communities” (P112).

2. Governance

2.1. Governance Structure for Natural Capital

In July 2021, the Kyuden Group established the “Sustainability Promotion Committee", chaired by the President, under the supervision of the Board of Directors. This committee formulates strategies and basic policies related to ESG, including nature-related issues (nature-related dependencies, impacts, risks, and opportunities) and climate change, deliberates on specific measures, and supervises the progress of their implementation. The committee meets at least twice a year and held meetings on April 11 and November 15 in fiscal year 2023. The results of these deliberations were promptly reported to the Board of Directors and discussed on May 24 and November 29.

Additionally, under this committee, the “Carbon Neutrality and Environment Subcommittee", chaired by the Chief ESG Officer, was established to deliberate on environmental issues from a more specialized perspective. This subcommittee held four meetings in fiscal year 2023 on August 2, August 24, October 17, and March 15, with two of these meetings discussing nature-related issues. The results of these discussions are sequentially reflected in the deliberations of the Sustainability Promotion Committee.

The process of identifying, assessing, and managing nature-related risks is incorporated into the agenda of the Carbon Neutrality and Environment Subcommittee. As mentioned above, the results of this subcommittee are submitted to the Sustainability Promotion Committee, and important matters are integrated into the internal controls that manage company-wide risks, ultimately being discussed by the Board of Directors.

Kyuden Group Environmental Management and Promotion Framework

■Sustainability Promotion Committee

Composition	Chairperson: President Vice chairperson: Chief ESG Officer Committee members: External directors, executive directors of relevant divisions, among others	Meetings Held twice per year in principle and as necessary

■Carbon Neutrality and Environment Subcommittee

Composition	Chairperson: Chief ESG Officer Vice chairpersons: Executive Director, Corporate Strategy Division; Executive Director, District Symbiosis Division Members: Directors of related divisions, among others	Meetings Held twice per year in principle and as necessary

2.2. Initiatives Related to “IPLC (Indigenous Peoples and Local Communities)” and “Affected Stakeholders”

The Sustainability Promotion Committee and the Carbon Neutrality and Environment Subcommittee also deliberate on initiatives related to relationships with municipalities and local communities where power stations are located. For upstream supply chain activities such as fuel procurement and power station material procurement, which may involve interactions with Indigenous Peoples, the Kyuden Group operates under the “Kyuden Group Human Rights Policy” and the “Sustainable Procurement Guidelines".

Additionally, Kyushu EP conducts surveys regarding the consideration of Indigenous Peoples’ human rights for overseas energy project companies in which it has invested.

3. Nature-related Impacts and Dependencies

3.1. Approach

The Kyuden Group recognizes that an important first step towards enhancing natural capital, including biodiversity, is to understand the impacts of its business activities (including the supply chain) on natural capital and the dependencies on ecosystem services.

First, in relation to direct operations, fuel procurement, and solar panel procurement, the impacts on natural capital and the dependencies on ecosystem services were analyzed using ENCORE[6], a global data-based evaluation tool.

Heatmap of Impacts and Dependencies (ENCORE Version) [7]

Type of Power Generation(PG)	Process	Nature-related Impacts											Nature-related Dependencies								
		Land Conversion			Direct Extraction		Climate Change	Pollution				Other	Provisioning Services			Regulating Services					Supporting Services	
		Terrestrial	Freshwater	Marin	Water	Non-Water	Greenhouse Gases	Atmosphere	Aquatic	Soil	Waste	Noise/Light Pollution	Provision of Surface Water	Provision of Groundwater	Provision of Biomass	Neutralization of Pollutants	Climate Regulation	Filtration of Pollutants	Flood Prevention	Erosion Prevention	Maintenance of Water Flow	Maintenance of Water Quality
Thermal PG (Coal)	Fuel Procurement	Very High	High	-	Very High	-	High	High	High	High	High	High	High	High	-	-	High	-	-	Middle	High	-
	Power Generatio	-	High	-	Very High	-	High	High	Middle	Middle	High	High	Very High	Middle	-	Very Low	Very Low	Low	Middle	Low	Middle	Low
Thermal PG (LNG)	Fuel Procurement	High	High	Very High	Very High	-	High	High	High	High	High	High	Very Low	Very Low	-	Very Low	Very Low	Very Low	Very Low	Low	-	-
	Power Generation	-	High	-	Very High	-	High	High	Middle	Middle	High	High	Very High	Middle	-	Very Low	Very Low	Low	Middle	Low	Middle	Low
Nuclear PG	Fuel Procurement	Very High	High	-	Very High	-	High	High	High	High	High	High	High	High	-	-	High	-	-	Middle	High	-
	Power Generation	-	High	-	Very High	-	Low	High	Middle	Middle	High	High	Very High	Middle	-	Very Low	Very Low	Low	Middle	Low	Middle	Low
Hydro PG (Reservoir Ty)	Power Generation	Very High	Very High	-	Very High	-	High	-	High	High	-	-	Very High	Middle	-	Very Low	Very High	Very Low	High	High	Very High	Low
Hydro PG (Run-of-River Ty)	Power Generation	Very High	Very High	-	Very High	-	High	-	High	High	-	-	Very High	Middle	-	Very Low	Very High	Very Low	High	High	Very High	Low
Hydro PG (Pure Pumped Storage Ty)	Power Generation	Very High	Very High	-	Very High	-	High	-	High	High	-	-	Very High	Middle	-	Very Low	Very High	Very Low	High	High	Very High	Low
Geothermal PG (Protected Area)	Power Generation	-	-	-	Very High	-	High	-	High	High	-	High	Middle	Very High	-	Very Low	Very Low	Very Low	Middle	Low	Middle	Low
Geothermal PG (Outside Protected Area)	Power Generation	-	-	-	Very High	-	High	-	High	High	-	High	Middle	Very High	-	Very Low	Very Low	Very Low	Middle	Low	Middle	Low
Solar PG	Panel Procurement	-	-	-	High	-	High	-	High	High	Middle	Middle	Middle	Middle	-	Low	-	Low	-	-	-	-
	Power Generation	Very High	-	-	Very High	-	-	-	Low	Low	Low	-	Very Low	Very Low	-	-	Very High	-	Middle	Middle	-	-
Wind PG	Power Generation	High	Middle	High	-	-	-	-	Low	Low	-	Middle	-	-	-	-	Very High	-	Middle	Middle	-	-
Biomass PG	Fuel Procurement	High	-	-	-	-	High	-	High	High	-	-	Very High	High	-	-	-	-	Middle	Low	Middle	-
	Power Generation	-	-	-	High	-	High	High	High	-	High	-	Middle	Middle	Very High	Very Low	Very Low	Very Low	Middle	Low	Middle	Low
Transmission & Distribution of electricity		Low	-	-	-	-	High	-	Middle	-	-	-	-	-	-	-	Middle	-	Very High	High	-	-

Referring to the evaluation results from ENCORE, we assessed the impacts of our business activities on natural capital and the dependencies on ecosystem services, considering factors such as power station locations and facilities, laws and regional agreements, operations based on our standards, and the KBA[8] database mapping regions important for biodiversity. The evaluation was conducted in five levels (Very High, High, Middle, Low, Very Low) following ENCORE's methodology.

【Legend】
Very High
High
Middle
Low
Very Low

Additionally, in Kyushu, significant geological events that could impact natural capital and business operations include earthquakes and tsunamis. Faults beneath the nadir with a more than 3% probability of causing an earthquake within the next 30 years include the Fukuchiyama Fault Zone, Kego Fault Zone, Hinagu Fault Zone, and Unzen Fault Group. Coastal areas at risk of major earthquakes include Hyuga-nada (approximately 80% probability of a magnitude 7.0-7.5), Nankai Trough (70%-80% probability of a magnitude 8-9), and Aki-nada to Iyo-nada to Bungo Channel (approximately 40% probability of a magnitude 6.7-7.4). Considering these risks, we have independently established earthquake and tsunami categories to evaluate their financial impacts. For natural disasters, we assumed events that have occurred in the past 30 years or are highly likely to occur in the next 30 years.

[6] Developed under the leadership of the Natural Capital Finance Alliance (now ENCORE partnership) in collaboration with UNEP-WCMC and others. ENCORE: Exploring Natural Capital Opportunities, Risks and Exposure. Available at: https://encorenature.org/

[7] Created using the ENCORE tool, the "Additional Sector Guidance: Electric Utilities and Power Generation" ENCORE 2018-2023 data, and the WBCSD 2023 Roadmap-based materiality ratings.

[8] Abbreviation for Key Biodiversity Areas, referring to regions designated by international NGOs as crucial for biodiversity conservation.

3.2. Evaluation Results and Reasons for Nature-related Impacts and Dependencies

Based on the aforementioned approach, we created a heatmap illustrating the impacts on natural capital and the dependencies on ecosystem services for Kyushu EP, Kyushu T&D, and Kyuden Mirai Energy. This heatmap provides an overview of the entire supply chain, highlighting the hotspots of business activities in terms of their impacts on natural capital and dependencies on ecosystem services.

Heatmap of Impacts and Dependencies (Kyushu EP, Kyushu T&D, and Kyuden Mirai Energy Version)

Type of Power Generation(PG)	Process	Nature-related Impacts											Nature-related Dependencies										Other Factors
		Land Conversion			Direct Extraction		Climate Change	Pollution				Other	Provisioning Services			Regulating Services					Supporting Services		Earth quakes& Tsunamis
		Terrestrial	Freshwater	Marine	Water	Non-Water	Greenhouse Gases	Atmosphere	Aquatic	Soil	Waste	Noise/Light Pollution	Provision of Surface Water	Provision of Groundwater	Provision of Biomass	Neutralization of Pollutants	Climate Regulation	Filtration of Pollutants	Flood Prevention	Erosion Prevention	Maintenance of Water Flow	Maintenance of Water Quality	
Thermal PG (Coal)	Fuel Procurement	Very High	High	-	Very High	-	High	High	High	High	High	High	High	High	-	-	Very Low	-	-	Middle	High	-	Very Low
	Power Generation	-	Low	Low	Low	-	Very High	Low	Low	Low	Low	Low	Low	-	-	Very Low	Very Low	Low	Low	Low	Low	Low	High
Thermal PG (LNG)	Fuel Procurement	High	High	Very High	Very High	-	High	High	High	High	High	High	Very Low	Very Low	-	Very Low	Very Low	Very Low	Very Low	Low	Very Low	-	High
	Power Generation	-	Low	Low	Low	-	Middle	Low	Low	Low	Low	Low	Low	-	-	Very Low	Very Low	Low	Low	Low	Low	Low	High
Nuclear PG	Fuel Procurement	Very High	High	-	Very High	-	High	High	High	High	High	High	High	High	-	-	Very Low	-	-	Middle	High	-	Very Low
	Power Generation	Middle	Low	Low	Low	-	Very Low	Low	Low	Low	Low	Low	Low	-	-	Very Low	Very Low	Low	Very Low	Low	Low	Low	Very Low
Hydro PG (General)	Power Generation	Low	Low	-	Low	-	Very Low	-	Low	Low	-	-	High	-	-	Very Low	Very Low	Very Low	High	High	High	Low	High
Hydro PG (Pumped Storage)	Power Generation	Low	Low	-	Low	-	Very Low	-	Low	Low	-	-	Low	-	-	Very Low	Very Low	Very Low	High	High	Low	Low	High
Geothermal PG	Power Generation	Middle	-	-	Low	-	Very Low	-	Low	Low	-	Low	Low	-	-	Very Low	Very Low	Very Low	Low	Low	Low	Low	Low
Solar PG	Panel Procurement	-	-	-	High	-	High	-	High	High	Middle	Middle	Very Low	Very Low	-	Low	-	Low	-	-	-	-	Very Low
	Power Generation	High	-	-	Very Low	-	Very Low	-	Low	Low	Low	-	Very Low	Very Low	-	-	Very High	-	Middle	Middle	-	-	High
Wind PG (Onshore)	Power Generation	Middle	Low	Low	-	-	Very Low	-	Low	Low	-	Middle	-	-	-	-	Very High	-	High	Low	-	-	High
Wind PG (Offshore)	Power Generation	Low	Low	Middle	-	-	Very Low	-	Low	Low	-	Middle	-	-	-	-	Very High	-	-	Low	-	-	High
Biomass PG	Fuel Procurement	Middle	-	-	-	-	High	-	High	High	-	-	Very High	High	-	-	-	-	Middle	Low	Middle	-	Very Low
	Power Generation	-	Low	Low	Low	-	Very Low	Low	Low	Low	High	Low	Low	-	Very High	Very Low	Very Low	Very Low	Low	Low	Low	Low	High
Transmission & Distribution of electricity		Middle	-	-	-	-	Very Low	-	Low	-	-	-	-	-	-	-	High	-	Low	Low	-	-	High

As a result, the impacts on natural capital were evaluated as follows:

- **Coal-fired power generation**: “Very High” impact on “greenhouse gases”
- **Fuel procurement for coal-fired and nuclear power generation**: “Very High” impact on “terrestrial land conversion” and “direct extraction of water”
- **Fuel procurement for LNG power generation**: “Very High” impact on “marine land conversion” and “direct extraction of water”.

Regarding the dependencies on ecosystem services:

- **Solar and wind power generation (onshore and offshore)**: “Very High” dependency on “climate regulation”
- **Biomass power generation**: “Very High” dependency on “provision of biomass”
- **Fuel procurement for biomass power generation**: “Very High” dependency on “provision of surface water”.

Additionally, the table on the right lists locations identified by the Kyuden Group as priority locations for biodiversity, based on the impacts of power stations and transmission & distribution facilities on public protected areas and KBAs.

Priority locations for biodiversity

	Site Name	Protected Area / KBA	Impacts, Measures, & Reasons for Judgment
Nuclear Power	Sendai	Sendai River Basin Prefectural Natural Park	• Although measures to mitigate environmental impacts and continuous monitoring based on environmental assessments are conducted, the power station is located within a protected area. Therefore, the impact on land conversion is judged to be “Middle".
Geothermal	Otake / Hatchobaru	Aso Kuju National Park	
	Yamagawa	Kirishima-Kinkowan National Park	
Wind Power	Nagashima	Izumi City Takaono (KBA)	• Although it has been confirmed through voluntary assessments that there is no impact on rare species, the endangered species Hooded Crane and White-naped Crane fly about 10 km from the power station. Despite designing the wind turbine layout to avoid their flight paths, the impact on terrestrial ecosystems is judged to be “Middle".
Transmission & Distribution	Entire Kyushu Region	Protected Areas / KBAs in Kyushu	• Since facilities are also located in national parks and KBAs, the impact on land conversion is evaluated as “Middle".

Regarding the points where the evaluation was changed from ENCORE in the analysis, we considered the following.

Reasons for the evaluation of the heatmap related to natural capital, etc.(1/2)

Type of Power Generation		Process	Reasons for Evaluation
Thermal Power Generation	Coal	Fuel Procurement	• Evaluated as **"High"** or **"Very High"** due to the high potential impact on natural capital of land conversion in terrestrial and freshwater areas, direct extraction of water, greenhouse gases, and pollution. Additionally, the dependency on ecosystem services related to provision of groundwater and surface water and maintenance of water flow was evaluated as **"High"**.
		Power Generation	• While seawater and freshwater are used as cooling water, seawater is the predominant source, and the use of freshwater is very little. Moreover, freshwater is sourced from Kyushu, an area with low water risk (ESG Data Book 2024, p.27), resulting in a **"Low"** impact on local natural capital of direct extraction of water. The power station is managed based on agreements with local municipalities, ensuring operations cease before failing to meet standards, leading to a **"Low"** impact on local natural capital of pollution of atmosphere, waste, noise/light, and so on. However, the impact of greenhouse gases was evaluated as **"Very High"**.
	LNG	Fuel Procurement	• Evaluated as **"High"** or **"Very High"** due to the high potential impact on natural capital of land conversion in terrestrial, freshwater, and marine areas, direct extraction of water, greenhouse gases, and pollution. However, compared to coal, LNG's extraction methods result in a **"Low"** or **"Very Low"** dependency on ecosystem services.
		Power Generation	• While seawater and freshwater are used as cooling water, seawater is the predominant source, and the use of freshwater is very little. Moreover, freshwater is sourced from Kyushu, an area with low water risk (ESG Data Book 2024, p.27), resulting in a **"Low"** impact on local natural capital of direct extraction of water. The power station is managed based on agreements with local municipalities, ensuring operations cease before failing to meet standards, leading to a **"Low"** impact on local natural capital of pollution of atmosphere, waste, noise/light, etc.
Nuclear Power Generation		Fuel Procurement	• Evaluated as **"High"** or **"Very High"** due to the high potential impact on natural capital of land conversion in terrestrial and freshwater areas, direct extraction of water, greenhouse gases, and pollution. Additionally, the dependency on ecosystem services related to provision of groundwater and surface water and maintenance of water flow was evaluated as **"High"**.
		Power Generation	• Evaluated as **"Middle"** for impact on land conversion in terrestrial areas due to the significant impact of being constructed within a prefectural natural park. While seawater and freshwater are used as cooling water, seawater is the predominant source, and the use of freshwater is very little. Moreover, freshwater is sourced from Kyushu, an area with low water risk (ESG Data Book 2024, p.27), resulting in a **"Low"** impact on local natural capital of direct extraction of water. The power station is managed based on agreements with local municipalities, ensuring operations cease before failing to meet standards, leading to a **"Low"** impact on local natural capital of pollution of atmosphere, waste, noise/light, etc.
Hydropower Generation		Power Generation	• Although ENCORE generally evaluates the impact on natural capital as **"High"** or **"Very High"**, a **"Low"** to **"Very Low"** evaluation has been given, considering the following factors: no new construction of hydropower stations significantly affecting ecosystems in recent years, compliance with various related laws, such as the River Law, and efforts to coexist with local communities while considering ecosystems. However, due to the location of hydropower facilities in mountainous areas and rivers, they are susceptible to floods and earthquakes, resulting in a **"High"** dependency on regulating services of flood and erosion prevention, and earthquakes. General hydropower requires a certain amount of water, leading to a **"High"** dependency on provision of surface water and maintenance of water flow functions. In contrast, pumped storage hydropower, which circulates water between upper and lower reservoirs, has a **"Low"** dependency on these functions.
Geothermal Power Generation		Power Generation	• Evaluated as **"Middle"** for land conversion impact in terrestrial areas due to the significant impact of being constructed within a national park. Cooling water primarily uses condensed water from steam extracted from underground, with minimal use of river water. Freshwater is sourced from Kyushu, an area with low water risk (ESG Data Book 2024, p.27), resulting in a **"Low"** impact on direct extraction of water. The power station is managed based on agreements with local municipalities, ensuring operations within a range that does not affect local natural capital, leading to a **"Low"** impact on natural capital of aquatic, soil, and noise/light pollution. * Procurement was not evaluated this time.

Reasons for the evaluation of the heatmap related to natural capital, etc.(2/2)

Type of Power Generation		Process	Reasons for Evaluation
Solar Power Generation		Panel Procurement	• Since solar panels are manufactured using semiconductor processes, they require a large amount of water. However, the panels we procure are manufactured domestically in areas with low water risk, so the dependence on the provision of surface water and groundwater is evaluated as **"Very Low"**. Despite this, due to the significant water usage and GHG emissions during manufacturing, and concerns about soil and aquatic pollution from the chemicals used, the impact on natural capital is evaluated as **"High"**.
		Power Generation	• Solar power generation requires sunlight, that is good weather, which is influenced by the microclimate created by the surrounding ecosystem of the power station. Therefore, the dependency on climate regulation by the surrounding ecosystem was evaluated as **"Very High"**. Although no significant issues have arisen regarding adverse effects on terrestrial ecosystems, the potential impact on natural capital due to land conversion was evaluated as **"High"**.
Wind Power Generation	Onshore	Power Generation	• Wind power generation requires adequate wind, which is influenced by the microclimate created by the surrounding ecosystem of the power station. Therefore, the dependency on climate regulation by the surrounding ecosystem was evaluated as **"Very High"**. Additionally, in Japan, the risk of wind and rain impacts is higher than the global average due to typhoons, and actual damage to wind power stations from typhoons has occurred. Therefore, the dependency on prevention from floods and storms was evaluated as **"High"**. Onshore wind power, considering mitigation hierarchy (priority or hierarchy in considering environmental conservation measures), takes measures to protect rare species, resulting in a **"Middle"** evaluation for the impact on terrestrial ecosystems. Preventive measures, such as halting construction during the nesting period of raptors, have been taken, and no significant issues have arisen regarding noise/light pollution, resulting in a **"Middle"** evaluation for disturbance impacts.
	Offshore	Power Generation	• Wind power generation requires adequate wind, which is influenced by the microclimate created by the surrounding ecosystem of the power station. Therefore, the dependency on climate regulation by the surrounding ecosystem was evaluated as **"Very High"**. Offshore wind power, considering mitigation hierarchy (priority or hierarchy in considering environmental conservation measures), takes measures to protect marine ecosystems (consideration in the Environmental Impact Assessment Law), resulting in a **"Middle"** evaluation for the impact on marine ecosystems. Additionally, the noise generated during the foundation construction of offshore wind power stations is known to adversely affect marine life, particularly cetaceans that use sound (ultrasound) for communication and navigation. Therefore, the impact of noise/light pollution was evaluated as **"Middle"**.
Biomass Power Generation		Fuel Procurement	• The production of biomass materials such as wood and palm kernel shells (especially the latter) is said to require a large amount of water. However, due to the lack of information on the water resource status of the origin, the dependency on surface water was conservatively evaluated as **"Very High"**. Biomass fuel is certified, resulting in a **"Middle"** evaluation for the impact on terrestrial ecosystems. However, due to the lack of information on the origin, GHG emissions, soil pollution, and water pollution were conservatively evaluated as **"High"** according to the ENCORE evaluation.
		Power Generation	• Biomass power generation requires ecosystem services that produce biomass fuel, such as fibers and other materials, resulting in a **"Very High"** dependency on provision of biomass. Although incineration ash is properly treated as industrial waste, the final disposal is landfill, resulting in a **"High"** evaluation for the impact of solid waste.
Transmission & Distribution of electricity			• Installed in national parks and KBAs (Key Biodiversity Areas), the impact on land conversion in terrestrial areas was evaluated as **"Middle"** due to the significant impact. For distribution facilities, the dependency on climate regulation functions was evaluated as **"High"** due to the risk of power outages caused by fallen trees and broken poles or wires during typhoons. When selecting tower installation sites, unstable areas predicted to experience landslides or floods are avoided, resulting in a **"Low"** dependency on flood prevention and erosion control functions.

As for the risks in direct operations, in addition to natural-related risks, we also analyzed earthquakes and tsunamis as other factors, as mentioned earlier. We considered the reasons for their evaluation as follows.

Reasons for the evaluation of the heatmap due to other factors

	Reasons for Evaluation
Earthquakes & Tsunamis	• In Kyushu, there are active faults with a more than 3% probability of causing an earthquake within the next 30 years, including the Fukuchiyama Fault Zone, Kego Fault Zone, Hinagu Fault Zone, and Unzen Fault Group. Additionally, along the coast, there are risks of earthquakes and accompanying tsunamis in Hyuga-nada (approximately 80% probability of M7.0-7.5), Nankai Trough (70%-80% probability of M8-9), and Aki-nada to Iyo-nada to Bungo Channel (approximately 40% probability of M6.7-7.4). Furthermore, there are also risks of earthquakes and accompanying tsunamis overseas. The risks for LNG fuel procurement, thermal power generation, general hydropower, and transmission and distribution are evaluated as **"High",** but for nuclear power generation, countermeasure construction has been implemented, resulting in an evaluation of **"Very Low".**

4. Scenario Analysis

Taskforce on Nature-related Financial Disclosures

4.1. Scenario Setting by the Kyuden Group

According to the approach Based on TNFD Scenario Analysis Guidance, while conducting scenario analysis to test resilience and advance strategies by evaluating the nature-related impacts, dependencies, risks, and opportunities, considering complex uncertainties, it is recommended to set “exploratory scenarios” that explore a wide range of uncertainties and establish plausible futures, rather than stress tests that represent difficult “edge cases” by incorporating extreme values of relevant variables or a few variables into existing planning models.

On the other hand, the power business considers its operations with a long-term perspective in terms of facility formation and fuel procurement. Additionally, the Kyuden Group has a wide supply chain and numerous operational bases, leading to various elements being assumed in the relationship between the external environment and the Kyuden Group, such as the rise in procurement costs due to physical risks and operational constraints due to transition risks, with the possibility of these elements being interrelated. Therefore, it was not possible to set exploratory scenarios that establish the most likely future.

For this reason, in setting scenarios for the Kyuden Group, we simply set two cases for the year 2050: a “Status Quo Scenario", where society as a whole does not address natural capital and climate change issues beyond the current level, and a “Nature Positive Transition Scenario", where society as a whole is highly motivated to address natural capital and climate change issues sufficiently, achieving global carbon neutrality and nature positivity. By analyzing the impact of these societal changes on the Kyuden Group, we aimed to identify the risks and directions to take in future societal changes.

By conducting the current evaluation through the heatmap in the previous chapter and the evaluation of both extremes in future scenario analysis, and by extracting risks and opportunities and evaluating financial impacts as described later, we believe we can achieve a comprehensive evaluation and analysis of the nature-related risks and opportunities that can be assumed for the Kyuden Group in the present and future.

Scenario Setting

2050 Scenarios	
Status Quo Scenario	**Nature Positive Transition Scenario**
• Globally, both natural capital and carbon neutrality continue under the current legally binding frameworks set by national governments, with no further regulatory strengthening, and private companies do not advance their measures and initiatives.	• Globally, both natural capital and carbon neutrality are achieved according to internationally set goals, with national governments strengthening regulations and private companies sufficiently advancing their measures and initiatives.

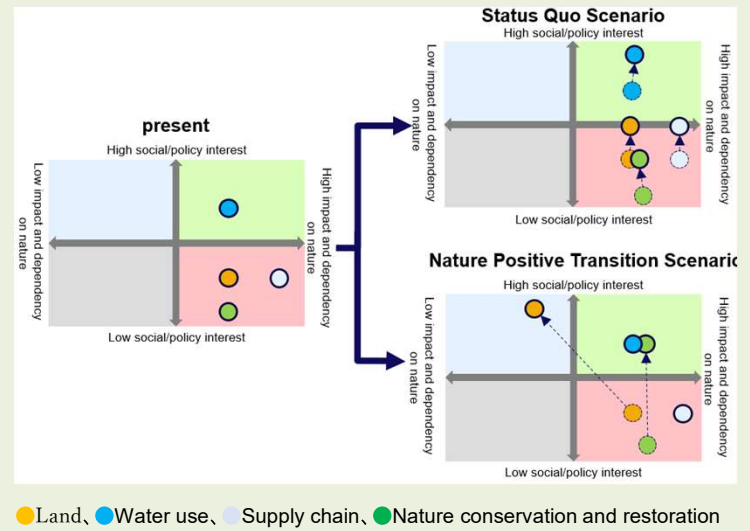
4.2. Impact on the Kyuden Group by Each Natural Capital in the Two Scenarios

In each of the “Status Quo Scenario” and “Nature Positive Transition Scenario", we examined how the Kyuden Group’s impacts and dependencies on nature would change from four perspectives: land, water use, supply chain, and nature conservation/restoration (see Scenario Analysis Table P10-P12). The summary is shown in the diagram on the right. The horizontal axis represents the Kyuden Group’s “impacts and dependencies on nature", and the vertical axis represents the “level of societal/policy interest” in each natural capital.

As a result of the analysis, in the Status Quo Scenario, societal interest (vertical axis) increased for all natural capitals: land, water use, supply chain, and nature conservation/restoration.

On the other hand, in the Nature Positive Transition Scenario, societal interest (vertical axis) increased for land, but the Kyuden Group’s impacts and dependencies on nature (horizontal axis) decreased due to compliance with development regulations in a nature-positive society. Societal interest (vertical axis) increased for nature conservation/restoration, while there was no change for water and the supply chain.

Changes in Societal / Political Interest and Impacts / Dependencies on Nature in Each Scenario



Scenario Analysis Table（1/3）

	The current situation	2050 scenario	
		Status Quo Scenario	Nature Positive Transition Scenario
View of the world	—	• By 2050, the 2050 Vision of the Kunming-Montreal Global Biodiversity Framework, “Living in harmony with nature", has not been achieved. • Regarding climate, there are significant differences in policies and corporate willingness to reduce greenhouse gas (GHG) emissions globally, and efforts to address climate change are not progressing in line with the Paris Agreement.	• In line with the Kunming-Montreal Global Biodiversity Framework, “Nature Positive” is achieved by 2030, and “a world in harmony with nature” is realized by 2050. • Regarding climate, globally, climate policies have been strengthened, and the reduction of GHG emissions is progressing smoothly worldwide, resulting in the containment of temperature rise.
Fuel price	—	• **Due to the lack of progress towards carbon neutral (CN) globally,** a significant amount of fossil fuels is being consumed. As a result, coalfields, gas fields, and oil fields with higher extraction costs are meeting global demand, and **fossil fuel prices are remaining high.**	• In terms of CN, regulations are being strengthened, and the procurement cost of fossil fuels is increasing due to the addition of carbon pricing. Additionally, since CN has been achieved globally, the use of fossil fuels is, in principle, accompanied by CCS. In such a situation, the cost of using fossil fuels will increase significantly, and renewable energy will become price-competitive with fossil fuels solely through market mechanisms. Therefore, **even if the cost of complying with stricter regulations on fossil fuel extraction is added,** as long as renewable energy remains price-competitive with fossil fuels, the price competitiveness of fossil fuels will be further undermined, leading to a shift from fossil fuels to renewable energy. Strengthening regulations on fossil fuel development **does not significantly increase the procurement price of fossil fuels.**
The power generation mix, etc.	—	• As part of the efforts to achieve the goals of the “Kyuden Group Carbon Neutral Vision 2050", we are promoting the introduction of zero-emission power sources through the mainstreaming of renewable energy and the maximum utilization of nuclear power generation. **As a result, the Kyuden Group will achieve “carbon neutrality” by 2050, where the total GHG emissions across the entire supply chain, minus the “absorption and removal amounts", will be zero.** • **Regarding renewable energy sources, solar power and offshore wind power will increase. On the other hand, biomass power generation will be limited to responding to the expansion of co-firing in thermal power generation due to restrictions on fuel supply.** (Note: Onshore wind power, geothermal power, and hydropower will vary depending on the scenario.)	
		• **Since development regulations remain unchanged, onshore wind power will increase among renewable energy sources, but geothermal and hydropower, which have relatively limited development potential, will see only slight increases.**	• **Due to the assumption of stricter development regulations, the new installation of onshore wind power, hydropower, and geothermal power will become extremely difficult among renewable energy sources.** While the environmental awareness of energy consumers is increasing and electrification in all fields, including the spread of EVs, is progressing to the maximum extent, energy conservation is also advancing. Therefore, compared to the status quo scenario, there is no significant increase in power demand.
Climate	• In Kyushu, the main business area of the Kyuden Group, **temperature increases have led to the formation of linear precipitation zones, resulting in heavy rain, floods, and an increase in the frequency of high water levels.**	• **In Kyushu, temperature increases are further progressing, and extreme weather events (such as heavy rain and floods) and the frequency of high water levels have significantly increased from the current situation.**	• **In Kyushu, the increase in extreme weather events and the frequency of high water levels has only slightly increased from the current situation.**

Scenario Analysis Table（2/3）

			The current situation	2050 scenario	
				Status Quo Scenario	Nature Positive Transition Scenario
Land	Status		• Regarding land use, new power stations are being developed based on environmental regulations and the consent of local communities. • Existing power stations continue to be used for thermal power, nuclear power, hydroelectric power, geothermal power, and biomass power. On the other hand, land use for solar power and wind power (both onshore and offshore) continues to increase with the development of renewable energy sources.	• The land use of existing power stations will be maintained. For thermal power generation, land use will not change as high-efficiency thermal power with CCUS or hydrogen/ammonia co-firing/dedicated firing will replace current thermal power stations at the same locations. Additionally, for biomass, the installation of co-firing facilities in existing equipment (including thermal power stations) will not lead to an increase in land use. • On the other hand, new developments in renewable energy (hydropower, geothermal, solar, onshore wind, offshore wind) will lead to an increase in land use. • Since the current regulations are maintained, there are no changes to the restrictions on land use for the development of new power stations. • Land use increases with new developments in solar and wind power. On the other hand, due to the limited suitable sites for new developments, land use for hydropower and geothermal remains only slightly increased.	• Regulations on land use will be strengthened to maintain and improve the natural state, and land use for development will be strictly limited. • Regarding renewable energy, for solar power, power stations that engage in inappropriate land use will be abolished, and all power stations will be based on appropriate land use. For offshore wind power, considerations for the impact on marine ecosystems in marine use will be strengthened, but at the same time, projects for the regeneration of large algae around power generation facilities and their commercialization (blue carbon projects) will also progress. On the other hand, for onshore wind power, similar forest regeneration (*) near the development site is a condition for forest development, but since suitable sites that meet these conditions are limited, new development is becoming difficult. Hydropower and geothermal power are facing strict development restrictions, making new development extremely difficult.
	Evaluation	interest in society/policies	Low • In Japan, the need for consideration of nature in land use is mainly limited to public nature reserves, and overall, there is not a high level of interest from society.	Middle • Although regulations on forest development are slightly strengthened, there are no significant changes in land use regulations, and the level of interest from society is moderate.	Very High • From the perspective of ecosystem conservation, forest development will be strictly limited, and the level of interest from society will be very high.
		dependencies and impacts on nature	High • Regarding terrestrial land conversion, the impact of solar power stations is significant.	High • Regarding terrestrial land conversion, there is no change in the significant impact of solar power stations.	Low • All power stations will be based on appropriate land use. Additionally, as regulations on land use become stricter, converting land from forests and other areas will become difficult, so new developments will only have a small impact on 'land conversion'.
Water	Status		• Hydropower (conventional hydropower) uses surface water from rivers. Additionally, thermal, nuclear, and biomass power generation primarily use seawater. Solar, wind, and geothermal power do not use water during operation.	• Thermal, nuclear, and biomass power generation will continue to use seawater. Solar, wind, and geothermal power do not use water during operation, so the current situation will be maintained. • As the number of hydropower stations slightly increases, water usage will also slightly increase.	• Since the number of hydropower stations will not increase, water usage will not change.
	Evaluation	interest in society/policies	High • Regardless of water risks, ordinances and agreements with local communities regarding water intake and discharge are established by municipalities, and there is a high level of interest from society.	Very High • As water risks due to climate change increase and regulations on water use are strengthened, the level of interest from society becomes very high.	High • Due to considerations for nature, there are no significant changes in water use from the current situation, but there remains a high level of interest from society regarding water use.
		dependencies and impacts on nature	High • Regarding the provision of surface water, hydropower stations are highly dependent.	High • Regarding the provision of surface water, there is no change in the high dependency of hydropower stations.	High • Regarding the provision of surface water, there is no change in the high dependency of hydropower stations.

* The costs associated with forest regeneration and supply chain due diligence are recognized as risk items, and a financial impact assessment (5.1) is conducted.

Scenario Analysis Table（3/3）

			The current situation	2050 scenario	
				Status Quo Scenario	Nature Positive Transition Scenario
Supply Chain	Status		• Regarding land and water use in the supply chain, there are burdens due to fossil fuel extraction, biomass fuel production, and solar panel manufacturing.	• Regarding land and water use in the supply chain, the burden from biomass fuel production and solar panel manufacturing continues. The burden from fossil fuel extraction decreases with the phase-out of inefficient coal-fired power and the co-firing/dedicated firing of green hydrogen and ammonia. For solar panel manufacturing, water risks vary depending on the manufacturing location.	• Regarding land and water use in the supply chain, the global nature-positive transition has completed the shift to fuels with no environmental burden, eliminating the impact on nature. Solar panels are manufactured overseas, so water risks vary by manufacturing location. However, due to the strengthening of regulations on water use in each country, the environmental burden at solar panel procurement sites has been eliminated.
	Due Diligence and Disclosure		• We issue integrated reports and disclose information such as TCFD and TNFD.	• Due to the lack of global progress towards a nature-positive transition, the burden on land and water use from activities such as fossil fuel extraction in our supply chain does not decrease. As a result, in response to feedback from some investors and NGOs, we need to conduct due diligence(*) and disclose information related to the supply chain. This will incur costs for due diligence and increased expenses related to changing procurement sources based on the results.	• The global movement towards a nature-positive transition is progressing, and the burden on land and water use from activities such as fossil fuel extraction is being mitigated overseas as well. Therefore, there is no longer a need to conduct due diligence or disclose information related to the supply chain. Although costs are incurred to mitigate the environmental impact of extraction, as noted in the fuel price section, this does not lead to an increase in procurement prices.
	Evaluation	interest in society/policies	Low • In Japan, the scope of regulations and policies related to the procurement of raw materials that lead to land and water use risks due to deforestation and other factors is expanding, but interest from society, apart from NGOs, is not high.	Middle • Regulations related to the procurement of raw materials that lead to land and water use risks due to deforestation and other factors are being strengthened in some overseas regions. As a result, there is a moderate increase in societal interest due to the impact on raw material imports to Japan.	Low • With the nature-positive transition, the procurement of raw materials that lead to land and water use risks due to deforestation and other factors will be eliminated, and societal interest will decrease.
		dependencies and impacts on nature	Very High • The fuel procurement for biomass power generation is highly dependent on the provision of surface water. Additionally, the fuel procurement for coal-fired and nuclear power generation has significant impacts on terrestrial land conversion and direct extraction of water, while the fuel procurement for LNG-fired power generation has significant impacts on marine land conversion and direct extraction of water.	Very High • Since there are no significant changes in considerations for nature in fuel procurement, the impact and dependence on natural capital remain very high and unchanged.	Very High • The fuel procurement for biomass power generation remains highly dependent on the provision of surface water. On the other hand, the impact of fuel procurement, including biomass, has become very small due to the nature-positive transition, as only those that do not lead to deforestation or negatively impact nature are produced.
Nature Conservation and Restoration	Status		• We are engaged in the maintenance and management of company-owned forests and greening projects. Additionally, as part of joint activities with the community, we conduct environmental conservation activities in the Bogatsuru Wetland area and forest creation projects such as the 'Kyuden Mirai no Mori Project,' which serves as a base for environmental education and community interaction.	• Regarding nature conservation and restoration, the maintenance and management of company-owned forests and joint activities with the community will continue. –	• As it becomes necessary to positively address the remaining environmental burdens, the importance of nature conservation and restoration increases. This leads to the improvement of forest quality through the expansion of greening with native vegetation at company-operated sites and company-owned plantations, the registration of these areas as nature symbiosis sites, and their evaluation as corporate value.
	Evaluation	interest in society/policies	Very Low • In Japan, the registration of nature symbiosis sites as private initiatives outside of public nature reserves has begun, but overall societal interest has not increased.	Low • There are no incentives for nature conservation and restoration, and societal interest has not increased.	High • The global movement to promote nature conservation and restoration is strengthening, and societal interest is increasing.
		dependencies and impacts on nature	High • Hydropower stations are highly dependent on 'flow maintenance.' Additionally, the conservation of water source forests provides 'flow maintenance' as a fundamental service.	High • Hydropower stations are highly dependent on 'flow maintenance.' Additionally, efforts to conserve water source forests are ongoing, but their scale remains unchanged.	High • Hydropower stations are highly dependent on 'flow maintenance.' Additionally, the demand for nature restoration around power stations and their surroundings is increasing, and forest management utilizing conservation techniques for water source forests is being commercialized.

* The costs associated with forest regeneration and supply chain due diligence are recognized as risk items, and a financial impact assessment (5.1) is conducted.

5. Risk and Impact Management

5.1. Nature-related Risks

In this analysis, we classified the items evaluated as having a significant (“High”) or very significant (“Very High”) nature-related impacts or dependencies in business into risks that occur in both scenarios. For these items and the risk items identified through scenario analysis (forest regeneration and due diligence), we categorized the risks and assessed their financial impacts. The table below details the results.

Risks and Financial Impacts (1/2)

			Risk Classification	Risk Type	Risk Overview	Financial Impact	Level
Thermal Power Generation	Coal	Fuel Procurement	Physical	Acute	• Landslides and subsidence due to land conversion, and fires from mining operations.	• Deterioration of financial balance due to global coal price increase	Level II
				Chronic	• Degradation and fragmentation of terrestrial ecosystems, invasion of alien species, and adverse effects on local vegetation and vegetation environments due to land conversion from mining operations. Depletion of aquifers due to excessive water use in mining. Operational disruptions due to increased severity and frequency of droughts. • Emission of greenhouse gases, release of toxic substances into the atmosphere, adverse effects on vegetation and soil, and ecosystem changes due to species migration from mining operations.		
			Transition	Regulatory	• Costs incurred for measures against each chronic risk item in mining.		
					• Increased fuel procurement costs due to the burden on miners, etc., for procuring greenhouse gas emission allowances for indirect greenhouse gas emissions, including those from coal mining processes.		
					• Mandatory due diligence on natural impacts up to the upstream end of the supply chain. (*)	• Investigation and disclosure costs	Level I
		Power Generation	Physical	Acute	• Equipment damage and shutdown of thermal power stations due to earthquakes and tsunamis.	• Restoration costs and costs for securing alternative power sources	Level II
				Chronic	• Emission of greenhouse gases from operations.	• Increase in coal-fired power generation costs and fuel costs for LNG-fired power generation if levies or taxes on greenhouse gas emissions are introduced	Level III
			Transition	Regulatory	• Costs incurred for greenhouse gas emissions from operations if levies or taxes are introduced to regulate the operation of coal-fired power stations. Regulation of coal-fired power station operations.		
	LNG	Fuel Procurement	Physical	Acute	• Operational shutdown of gas fields due to water depletion. Negative environmental impacts due to accidental release of toxic substances. Negative impacts on surrounding rare species due to accidental release of pollutants. Damage to LNG shipping facilities and inability to ship due to earthquakes and tsunamis.	• Deterioration of financial balance due to global LNG price increase. • However, the financial impact is somewhat mitigated as LNG is procured through long-term contracts from multiple projects.	Level II
				Chronic	• Adverse effects on terrestrial, freshwater, and marine ecosystems. Death of benthic and freshwater plants due to pollutant discharge. Negative impacts on surrounding rare species due to accidental release of pollutants. Environmental pollution due to improper waste disposal.		
			Transition	Regulatory	• Operational suspension orders from local governments to our procurement sources due to the release of harmful substances.		
					• Mandatory due diligence on natural impacts up to the upstream end of the supply chain. (*)	• Investigation and disclosure costs	Level I
		Power Gen.	Physical	Acute	• Equipment damage and shutdown of thermal power stations due to earthquakes and tsunamis.	• Restoration costs	Level II
Nuclear Power Generation		Fuel Procurement	Physical	Acute	• Landslides and subsidence due to land conversion and fires from uranium mining.	• Deterioration of financial balance due to global uranium price increase. • The proportion of uranium costs in nuclear power generation costs is small, so the financial risk is evaluated under regulatory risk as the impact is unlikely to be significant.	Level II
				Chronic	• Degradation and fragmentation of terrestrial ecosystems, invasion of alien species, and adverse effects on local vegetation and vegetation environments due to land conversion from mining operations. Depletion of aquifers due to excessive water use in mining. Operational disruptions due to increased severity and frequency of droughts. • Emission of greenhouse gases, release of toxic substances into the atmosphere, adverse		
			Transition	Regulatory	• Increased fuel procurement costs due to the burden on miners, etc., for procuring greenhouse gas emission allowances for indirect greenhouse gas emissions, including those from uranium mining processes.		
					• Mandatory due diligence on natural impacts up to the upstream end of the supply chain. (*)	• Investigation and disclosure costs	Level I

Financial Impact Assessment Criteria: Level I: Less than 1 billion yen, Level II: 1 billion to 10 billion yen, Level III: Over 10 billion yen

Risks Occurring Only in Specific Scenarios: Risks in the status quo scenario: **blue underline**, risks in the nature-positive transition scenario: **green underline**

(*) Forest regeneration and due diligence are risk items identified through scenario analysis. Other items are evaluated as having a significant (“**High**”) or very significant (“**Very High**”) impact or dependency on natural capital.

Risks and Financial Impacts (2/2)

		Risk Classification	Risk Type	Risk Overview	Financial Impact	Level
Hydropower Generation		Physical	Acute	• Equipment damage and shutdown of hydropower stations due to floods and earthquakes.	• Restoration costs and costs for securing alternative power sources	Level II
Geothermal Power Gen.		Transition	Regulatory	• Obligation for forest regeneration in geothermal power generation involving forest development. (*)	• Forest regeneration costs	Level I
Solar Power Generation	Solar Panel Procurement	Physical	Acute	• Production restrictions due to the release of pollutants into soil and water systems from accidents.	• Deterioration of profitability due to increased solar panel prices and changes in procurement locations	Level I
			Chronic	• Production restrictions due to increased severity and frequency of droughts. Emission of greenhouse gases from operations.		
		Transition	Regulatory	• Increased costs for procuring greenhouse gas emission allowances for indirect greenhouse gas emissions, including those from the solar panel production process, leading to higher solar panel procurement costs.		
	Power Generation	Physical	Acute	• Equipment damage and shutdown of solar power stations due to earthquakes and tsunamis.	• Deterioration of financial balance due to restoration costs and reduced power generation	Level I
			Chronic	• Adverse effects on terrestrial ecosystems (e.g., waterfowl). Reduction in solar power generation due to changes in sunlight patterns.	• Deterioration of financial balance due to countermeasure costs and reduced power generation	Level I
		Transition	Reputational	• Operational suspension or additional investment for countermeasures due to NGO criticism of adverse effects on surrounding terrestrial ecosystems by power stations.	• Deterioration of financial balance due to operational restrictions and additional investments	Level I
Wind Power Generation		Physical	Acute	• Equipment damage and shutdown of wind power stations due to earthquakes, tsunamis, and floods.	• Deterioration of financial balance due to restoration costs and reduced power generation	Level I
			Chronic	• Reduction in wind power generation due to changes in wind patterns.	• Deterioration of financial balance due to reduced power generation	Level I
		Transition	Regulatory	• Obligation for forest regeneration in onshore wind power involving forest development. (*)	• Forest regeneration costs	Level I
Biomass Power Generation	Fuel Procurement	Physical	Acute	• Difficulty in procuring raw materials and operational restrictions of power stations due to production disruptions of biomass fuel materials caused by water shortages at the place of origin.	• Deterioration of financial balance due to increased biomass fuel prices and changes in procurement locations	Level I
			Chronic	• Significant reduction in biomass fuel material production due to changes in rainfall patterns caused by climate change at the place of origin, making raw material procurement difficult. • Production restrictions due to the release of pollutants into soil and water systems from accidents.		
		Transition	Reputational	• Criticism from local communities and NGOs due to conflicts over water use, leading to a decline in social reputation.		
			Regulatory	• Mandatory due diligence on natural impacts up to the upstream end of the supply chain, resulting in burdens such as changes in procurement sources based on the results. (*)	• Investigation and disclosure costs	Level I
	Power Generation	Physical	Acute	• Equipment damage and shutdown of biomass power stations due to earthquakes and tsunamis.	• Restoration costs	Level I
			Chronic	• Operational suspension due to depletion of final disposal sites for incineration ash.	• Deterioration of financial balance due to operational restrictions	Level I
		Transition	Reputational	• Operational suspension due to NGO criticism of natural impacts related to biomass fuel production.		
Transmission and Distribution		Physical	Acute	• Power outages due to broken or collapsed utility poles and severed power lines caused by fallen trees from strong typhoon winds.	• Restoration costs	Level II
				• Large-scale power outages due to equipment damage centered in the Oita and Miyazaki areas caused by the Nankai Trough earthquake.	• Restoration costs	Level III

Financial Impact Assessment Criteria: Level I: Less than 1 billion yen, Level II: 1 billion to 10 billion yen, Level III: Over 10 billion yen
Risks Occurring Only in Specific Scenarios: Risks in the status quo scenario: **blue underline**, risks in the nature-positive transition scenario: **green underline**
(*) Forest regeneration and due diligence are risk items identified through scenario analysis. Other items are evaluated as having a significant ("**High**") or very significant ("**Very High**") impact or dependency on natural capital.

As a result, approximately half of the risk items affecting finances are common to both scenarios. Specifically, in fuel procurement, we evaluated the risk of increased costs due to the transfer of costs for procuring greenhouse gas emission allowances at the procurement source to fuel prices, leading to higher fuel procurement prices for our company. In power station operations, while we comply with laws, regulations, and agreements with local communities, reducing the risk of the Kyuden Group's business operations and finances being affected by the degradation of natural capital, Kyushu is geographically at risk of water damage from typhoons and linear precipitation bands*, and there is a risk of increased severity of disasters due to climate change. Additionally, in and around Kyushu, there are troughs and faults where earthquakes with a probability of over 3% are predicted to occur within the next 30 years, posing a risk of earthquake and tsunami damage.

The differences between the two scenarios are as follows: In the "Status Quo Scenario", there is a risk of increased costs to address natural degradation, reputational risks, and mandatory due diligence on natural impacts up to the upstream end of the supply chain. In the "Nature Positive Transition Scenario", there is a risk of increased costs to comply with the obligation for forest regeneration in land use.

In the "Nature Positive Transition Scenario", it is assumed that by 2050, the state will be nature positive, meaning that the reduction of natural impacts will progress throughout the supply chain, and the items that the Kyuden Group needs to address regarding natural impacts at procurement sources will already be resolved. Therefore, it is evaluated that there will be no costs for supply chain due diligence. However, it is recognized that there may be costs during the transition period (the path to reaching such a state by 2050), and financial impacts similar to those evaluated in the Status Quo Scenario are also expected during the transition process.

* Kyushu is an island that directly receives westerly winds from the East China Sea, and linear precipitation bands can form, causing heavy rain and flooding. Additionally, compared to other regions in Japan, typhoons land more frequently.

5.2 Management Processes for Nature-related Risks and Integration into Overall Risk Management

The Kyuden Group manages nature-related risks by complying with laws, agreements with local communities, and its own standards. In power station operations, we adhere to "regulatory values defined by law" and "regulatory values established in agreements with local communities based on the results of environmental assessments at the time of site selection" through operational monitoring.

At thermal power stations, we have agreements with local governments for each plant, and we operate in compliance with the agreed standards for air pollution (SOx, NOx, soot, dust), water pollution (cooling water discharge (residual chlorine), wastewater (pH, COD, suspended solids (SS), normal hexane extractable substances, nitrogen content, phosphorus content), ash treatment wastewater (pH, SS, transparency)), noise and vibration, and odors.

At nuclear power stations, we have safety agreements with local governments for each plant, managing air pollution (NOx emission concentration), water pollution, and radioactive substances. We continuously monitor and measure radiation levels around nuclear power stations and publish the data in real-time on our website. Additionally, we regularly measure the radioactivity in environmental samples such as soil, seawater, agricultural products, and marine products, and to date, no impact from the operation of nuclear power stations has been observed. The radiation dose received by people around nuclear power stations is less than 0.001 millisieverts per year, which is significantly below the legal dose limit of 1 millisievert per year and the target value of 0.05 millisieverts per year set by the Nuclear Safety Commission.

At hydropower stations, we operate in compliance with various relevant laws, such as the River Law, while coexisting with the local community and implementing various measures to address potential impacts on ecosystems, such as sediment accumulation and water quality changes.

At geothermal power stations, we have agreements with local governments for each plant, and we operate in compliance with memorandums regarding water quality (pH, arsenic, chloride ions) of river water, arsenic in river sediments, hourly injection volume and groundwater level changes in reinjection wells, hydrogen sulfide concentration on the surface, hydrogen ion concentration in surface soil, and noise control, to minimize the nature-related impact from pollution.

At solar and wind power stations, we have agreements with local governments for each plant and operate in compliance with these agreements.

At biomass power stations, we have agreements with local governments for each plant, and we operate in compliance with the agreed standards for air pollution (SOx, NOx, soot, dust), water pollution (cooling water, residual chlorine, wastewater treatment discharge (pH, COD, SS, normal hexane extractable substances, nitrogen content, phosphorus content), ash treatment wastewater (pH, SS, transparency)), noise and vibration, and odors.

6. Strategy

6.1. The Strategy for Nature Capital

The Kyuden Group has established the 'Kyuden Group Environmental Charter' to promote initiatives aimed at achieving a sustainable society, conserving the global environment, and coexisting with the local environment from a global perspective. Under this 'Kyuden Group Environmental Charter,' we have formulated the 'Environmental Activity Policy' as a medium- to long-term basic policy to steadily promote environmental management that balances business activities and the environment.

Additionally, we have established the 'Kyuden Group Management Vision 2030' (June 2019), the 'Kyuden Group Carbon Neutral Vision 2050' (April 2021), and the 'Kyuden Group Action Plan for Achieving Carbon Neutrality' (November 2021), which include strategies for natural capital. Furthermore, based on the current scenario analysis, we will reassess existing and future opportunities for natural capital and continue our efforts and initiatives. (See the next section)"

6.2. Nature-related Opportunities

As mentioned earlier, we consider the rich natural capital of Kyushu to be a crucial pillar supporting the business activities of the Kyuden Group. On the other hand, to protect natural capital, including biodiversity, we believe it is important to promote decarbonization and the circular economy while coexisting with the local community. In recent years, these initiatives have been socially recognized as important, which we see as an opportunity for the Kyuden Group".

Existing Nature-related Opportunities

Existing Opportunities	Overview of Opportunities
Q Den Future School	• Providing opportunities for children to develop a love for nature through various hands-on environmental education activities and outreach classes.
Conservation of Water Source Protection Forests	• The 4,447 hectares of company-owned forests within the Aso-Kuju National Park area play a crucial role in nurturing ecosystems and water sources. These forests are utilized for producing FSC® certified timber, thinning operations, and as a field for experiential environmental education, including forest observation.
OECM* Sites * Other Effective area-based Conservation Measures	• Contribution to the '30by30 Target' (a global biodiversity goal) through the continued maintenance and management of company-owned forests certified as 'OECM sites' by the Ministry of the Environment (areas recognized for biodiversity conservation through private initiatives).
Kyuden Mirai Forest Project	• We are working on the 'Kyuden Mirai Forest Project,' which aims to expand next-generation environmental education conducted at 'Kuju Kyuden Forest' (Yufu City, Oita Prefecture) throughout Kyushu. This project focuses on creating forests that serve as hubs for environmental education and community interaction. Environmental education, as well as tree planting and forest management activities, are being carried out at 'the Isahaya Kyuden Mirai Forest' (Isahaya City, Nagasaki Prefecture) and 'the Kirishima Kyuden Mirai Forest' (Kirishima City, Kagoshima Prefecture).
Environmental Conservation Activities	• In the Kuju Bogatsuru wetlands, we conduct 'controlled burning' with the local community to prevent the forestation of 'Bogatsuru' and maintain the wetlands, which preserve a rare ecosystem. Additionally, we carry out activities to remove invasive plant species that threaten the ecosystem of rare plants and protect the vegetation of 'Miyama Kirishima.' The Kuju Bogatsuru wetlands are registered under the Ramsar Convention as 'Kuju Bogatsuru and Tadewara Wetlands.
Salmon Land-based Farm	• We have constructed a salmon land-based farm on the premises of the Buzen Power Station (Buzen City, Fukuoka Prefecture). The salmon raised at this farm are named 'Mirai Salmon,' and we aim to achieve an annual production capacity of approximately 3,000 tons, contributing to the stable supply of domestic seafood.
Support and Utilization Project for J-Credit Creation	• This project supports the creation of J-Credits from forests owned by municipalities and other entities. It is being implemented in various locations across Kyushu, including Hisayama Town in Fukuoka Prefecture, Kusu Town in Oita Prefecture, and Kumamoto Prefecture.
Utilization of Dam Lake Sediment	• To ensure and enhance flood control functions and maintain or increase power generation capacity, we regularly remove sediment from dam lakes. We view this sediment as a valuable resource and promote its use in public works projects in collaboration with municipalities and other stakeholders.

Additionally, based on scenario analysis and other factors, we have evaluated that there are future nature-related opportunities in the following businesses.

Future Nature-related Opportunities

Future Opportunities	Summary of Opportunities	Future Initiatives to Realize Opportunities	Factors Expected to Impact Future Financials
Geothermal Power Generation	• Development of new power stations domestically and internationally using environmentally friendly geothermal power station installation and operation technologies owned by the Kyuden Group.	• Leveraging the technical expertise we have developed, we will investigate regions both within Kyushu and internationally where resources are expected to be abundant. We will comprehensively consider technical aspects, economic viability, and the local environment, and work on development while aiming for coexistence with the local communities.	• Expansion of Geothermal Power Generation Business
Forest Restoration, Maintenance, and Management	• In a nature-positive transition scenario, while the development of forests for renewable energy projects may create an obligation to restore forests, the emergence of such obligations across society could present an opportunity to expand forestry management support using the Kyuden Group's expertise in forest management developed through the management of company-owned forests.	• Expansion of Consulting Business Related to Forest Management	• Expansion of Forestry Management Support Business
Biomass Power Generation + Forest Restoration, Maintenance, and Management	• In a nature-positive transition scenario, CCS (Carbon Capture and Storage) will become essential for the combustion of fossil fuels, increasing the competitiveness of renewable energy. Additionally, due to water shortages overseas and criticism from local communities and NGOs, there may be difficulties in procuring biomass fuel from abroad. • On the other hand, there is a possibility that the price competitiveness of biomass power generation fuel from thinned wood produced through forest restoration, maintenance, and management will increase.	• Operate a wood biomass power station that effectively utilizes unused wood such as domestic thinned wood, contributing to the revitalization of forestry and local communities.	• Enhancing Business Value through Forest Restoration and Sustainable Fuel Procurement
Blue Carbon	• Blue carbon projects involving the creation of seaweed beds in offshore wind farm areas.	• In March 2023, construction began on an offshore wind farm in Kitakyushu City, with efforts underway to commence commercial operations in fiscal year 2025.	• Expansion of Offshore Wind Power and Monetization through Carbon Credits
Resourcing Business [9]	• By collaborating among various businesses involved from product manufacturing to disposal, we propose comprehensive waste reduction, recycling, and decarbonization for companies, achieving high-level resource recovery. This leads to the production of new resources.	• The Kyuden Group will focus on building a resource circulation system from manufacturing to disposal within the group. Subsequently, the knowledge gained from establishing this system will be shared with other companies and organizations.	• Monetization through Resourcing Business and Reduction of Waste Disposal Costs
Tidal Power Generation	• Development of new power stations based on the Kyuden Group's expertise. • In a nature-positive transition scenario where regulations on the development of solar and onshore wind power are strengthened, this is expected to provide a significant advantage.	• Since fiscal year 2022, we have been demonstrating a tidal power generator with a commercial-scale output of 1.1 MW, while also examining maintenance methods and business models. Additionally, we are considering the establishment of coexistence with local communities, conducting environmental assessments, and standardization methods. Through this demonstration, we aim to establish technology that complies with domestic environmental and technical standards, with the goal of early commercialization of tidal power generation in Japan.	• Expansion of Tidal Power Generation Business

[9] An industry that ensures the stable supply of high-quality recycled materials by utilizing extensive collection of various used products and automated sorting technologies..

In the future, we will continue to work towards realizing opportunities and further promote activities aimed at achieving the global targets of the Kunming-Montreal Global Biodiversity Framework for 2030, contributing to the transition to a ‘nature-positive economy.

Efforts towards achieving the global targets of the Kunming-Montreal Global Biodiversity Framework for 2030.(1/3)

	Target	Target Content (Excerpt from Ministry of the Environment Materials)	Relationship with Kyuden Group	Status of Initiatives	Remarks (Relevant Initiatives within the Kyuden Group)
1. Reducing threats to biodiversity	1	Plan and Manage all Areas To Reduce Biodiversity Loss	○	In Progress	• Management of company-owned forests (water source conservation forests) (ESG Data Book 2024 p24) https://www.kyuden.co.jp/ir_library_esg.html
	2	Restore 30% of all Degraded Ecosystems	○	In Progress	• Joined the 30 by 30 Alliance (ESG Data Book 2024 p24) https://www.kyuden.co.jp/ir_library_esg.html
	3	Conserve 30% of Land, Waters and Seas	○	In Progress	• Joined the 30 by 30 Alliance (ESG Data Book 2024 p24) • Certified as a Nature Coexistence Site (ESG Data Book 2024 p24) https://www.kyuden.co.jp/ir_library_esg.html
	4	Halt Species Extinction, Protect Genetic Diversity, and Manage Human-Wildlife Conflicts	○	In Progress	• Conducting environmental assessments (ESG Data Book 2024 p21, 22) https://www.kyuden.co.jp/ir_library_esg.html
	5	Ensure Sustainable, Safe and Legal Harvesting and Trade of Wild Species	—	—	—
	6	Reduce the Introduction of Invasive Alien Species by 50% and Minimize Their Impact	○	In Progress	• Conducting environmental assessments (ESG Data Book 2024 p21, 22) https://www.kyuden.co.jp/ir_library_esg.html • As part of the Kyuden Mirai Foundation’s activities, conducting rare plant protection activities in the Bogatsuru Wetland (removal of invasive species “Erigeron annuus”) Kyuden Mirai Foundation https://kyuden-mirai.or.jp/environment/detail/120
	7	Reduce Pollution to Levels That Are Not Harmful to Biodiversity	○	In Progress	• Proper waste disposal (ESG Data Book 2024 p26) https://www.kyuden.co.jp/ir_library_esg.html • Commercialization of Circular Park Kyushu (ESG Data Book 2024 p26) https://www.kyuden.co.jp/ir_library_esg.html
	8	Minimize the Impacts of Climate Change on Biodiversity and Build Resilience	○	In Progress	• Promotion of renewable energy (ESG Data Book 2024 pp. 13-15) https://www.kyuden.co.jp/ir_library_esg.html • Maximize the use of nuclear power generation with safety as the top priority • Maximize the use of highly efficient thermal power stations (ESG Data Book 2024 p17) https://www.kyuden.co.jp/ir_library_esg.html

Efforts towards achieving the global targets of the Kunming-Montreal Global Biodiversity Framework for 2030.(2/3)

	Target	Target Content (Excerpt from Ministry of the Environment Materials)	Relationship with Kyuden Group	Status of Initiatives	Remarks (Relevant Initiatives within the Kyuden Group)
2. Meeting people's needs through sustainable use and benefit-sharing	9	Manage Wild Species Sustainably To Benefit People	○	In Progress	• Conducting environmental assessments (ESG Data Book 2024 pp. 21-22) https://www.kyuden.co.jp/ir_library_esg.html • "Kyuden Mirai no Mori Project" as part of the Kyuden Mirai Foundation's activities (ESG Data Book 2024 p23) https://www.kyuden.co.jp/ir_library_esg.html
	10	Enhance Biodiversity and Sustainability in Agriculture, Aquaculture, Fisheries, and Forestry	○	In Progress	• Supporting and utilizing J-Credit creation projects (ESG Data Book 2024 p20) https://www.kyuden.co.jp/ir_library_esg.html • Obtained FSC® certification for company-owned forests (ESG Data Book 2024 p24) https://www.kyuden.co.jp/ir_library_esg.html • Salmon aquaculture business FF Mirai https://ffmirai.com/
	11	Restore, Maintain and Enhance Nature's Contributions to People	○	In Progress	• Environmental conservation activities in the Bogatsuru Wetland area as part of the Kyuden Mirai Foundation's activities (ESG Data Book 2024 p23) https://www.kyuden.co.jp/ir_library_esg.html
	12	Enhance Green Spaces and Urban Planning for Human Well-Being and Biodiversity	○	In Progress	• Greening projects (ESG Data Book 2024 p22) https://www.kyuden.co.jp/ir_library_esg.html • Greening behind the Denki Building (head office building)
	13	Increase the Sharing of Benefits From Genetic Resources, Digital Sequence Information and Traditional Knowledge	—	—	—
3. Tools and solutions for implementation and mainstreaming	14	Integrate Biodiversity in Decision-Making at Every Level	○	In Progress	• Conducting environmental assessments (ESG Data Book 2024 pp. 21-22) https://www.kyuden.co.jp/ir_library_esg.html
	15	Businesses Assess, Disclose and Reduce Biodiversity-Related Risks and Negative Impacts	○	In Progress	• Disclosure of reports in compliance with the TNFD Framework v1.0
	16	Enable Sustainable Consumption Choices To Reduce Waste and Overconsumption	○	In Progress	• Maximize the use of highly efficient thermal power stations (ESG Data Book 2024 p17) https://www.kyuden.co.jp/ir_library_esg.html

Efforts towards achieving the global targets of the Kunming-Montreal Global Biodiversity Framework for 2030.(3/3)

	Target	Target Content (Excerpt from Ministry of the Environment Materials)	Relationship with Kyuden Group	Status of Initiatives	Remarks (Relevant Initiatives within the Kyuden Group)
3. Tools and solutions for implementation and mainstreaming	17	Strengthen Biosafety and Distribute the Benefits of Biotechnology	—	—	—
	18	Reduce Harmful Incentives by at Least $500 Billion per Year, and Scale Up Positive Incentives for Biodiversity	—	—	—
	19	Mobilize $200 Billion per Year for Biodiversity From all Sources, Including $30 Billion Through International Finance	—	—	—
	20	Strengthen Capacity-Building, Technology Transfer, and Scientific and Technical Cooperation for Biodiversity	—	—	—
	21	Ensure That Knowledge Is Available and Accessible To Guide Biodiversity Action	○	In Progress	• Publication of the Kyuden Group ESG Data Book https://www.kyuden.co.jp/ir_library_esg.html
	22	Ensure Participation in Decision-Making and Access to Justice and Information Related to Biodiversity for all	○	In Progress	• Under the Kyuden Group Human Rights Policy, human rights due diligence is conducted, identifying five key human rights risks that require priority action, including 'discrimination (including gender gap)' and 'inappropriate restriction of local residents' rights.' Measures to address these risks are being considered and implemented. (ESG Data Book 2024 pp. 62-64) https://www.kyuden.co.jp/ir_library_esg.html
	23	Ensure Gender Equality and a Gender-Responsive Approach for Biodiversity Action			

7. Measurement Indicators and Performance

7.1.Global Core Disclosure Indicators

We have summarized the information related to the global core disclosure indicators proposed in the TNFD framework.

Global Core Disclosure Indicators

Items	Measurement Indicator Number	Indicators	Measurement Indicators: Data (FY2023)	Scope of Disclosure
Climate change		• **Greenhouse Gas (GHG) Emissions**	Scope 1: **17.8 million tons**-CO_2 Scope 2: **60 tons**-CO_2 Scope 3: **16.81 million tons**-CO_2	• Companies with negligible GHG emissions are not included within Kyushu EP and its consolidated subsidiaries.
Land/freshwater/ocean-use changes	**C1.0**	• **Total Spatial Footprint**	Total Spatial Footprint: **8.73 km²**	• This data pertains to thermal and nuclear power stations owned by Kyushu EP, internal combustion power stations owned by Kyushu T&D, and solar, wind, biomass, and geothermal power stations owned by Kyuden Mirai Energy.
Pollution/pollution removal	**C2.0**	• **Pollutants released to soil split by type**	**Determined to be zero** due to no soil contamination incidents	• Only operation and construction are included; equipment disposal is not included.
	C2.1	• **Wastewater discharged**	Wastewater: **2.45 million tons**	• This data pertains only to thermal and nuclear power stations owned by Kyushu EP.
	C2.2	• **Waste generation and disposal**	Volume of Industrial Waste Generated: **147,000 tons** Volume of Recycled Materials: **144,000 tons**	• Only Kyushu EP and Kyushu T&D (excluding coal ash and radioactive waste)
	C2.4	• **Non-GHG air pollutants**	Thermal power stations (Including Internal Combustion) • **Sulfur Oxide Emissions: 10,000 tons** • **Nitrogen Oxide Emissions: 20,000 tons**	• This data pertains to thermal power stations owned by Kyushu EP and internal combustion power stations owned by Kyushu T&D.
Resource use/replenishment	**C3.0**	• **Water withdrawal and consumption from areas of water scarcity**	**No water withdrawal from water-stressed areas domestically**	–
	C3.1	• **Quantity of high-risk natural commodities sourced from Land/ocean/freshwater**	Volume of High-Risk Natural Products Sourced from Land, Marine, and Freshwater Areas (tons) • **Coal: 5.36 million tons** • **Petroleum / Diesel: 1,000 kiloliters** • **Heavy Oil: 210,000 kiloliters** Volume of High-Risk Natural Products Sourced under Sustainable Management Plans or Certification Programst • **Wood (Biomass Fuel): 58,000 tons** * Most biomass fuels are certified products recognized under Japan's FIT system. From fiscal year 2024, they will be 100% certified products.	• This data pertains to thermal power stations owned by Kyushu EP and internal combustion power stations owned by Kyushu T&D.

7.2. Sector Core Disclosure Indicators

We have summarized the information related to the sector core disclosure indicators proposed in the TNFD guidance for electric utilities.

Sector Core Disclosure Indicators

Subcategory of Standards	Indicators	Data (FY 2023)	Disclosure Scope
Land/ Freshwater/ Marine Use Changes	• **Sediment retired**	Hydropower **Quantity (tonnes) of sediment retired: evaluated as zero** (So that sediment flowing from upstream continues to accumulate in the regulating reservoir of the hydropower station. Although dredging is carried out to prevent operational hindrance, no sediment is discharged downstream.) * Excluding sediment management operations[10] conducted at some hydropower stations.	Hydropower stations
Pollution/ Pollution Removal	• **Coal combustion residuals**	Thermal **Volume (tonnes) of coal combustion products (CCPs) generated and proportion (%) that are recycled: 710,000 tons, 88%**	Thermal power stations
		Thermal **Total number of coal combustion residual (CCR) impoundments, broken down by hazard potential classification and structural integrity assessment: None[11]**	
	• **Storage of Radioactive Waste**	Nuclear **Volume (tonnes) of nuclear waste safely stored** (e.g., deep underground storage) **Low-level radioactive waste: 19,896 drums** (equivalent to 200-liter drums) (as of the end of FY 2023) (transported and buried at Japan Nuclear Fuel Ltd.'s low-level radioactive waste disposal center)	Nuclear power stations

[10] When a certain scale of water inflow is expected due to an approaching typhoon, the water level of the dam reservoir is lowered in advance to bring it closer to the natural state of the river, allowing sediment to flow downstream when actual inflow occurs. This operation helps prevent sediment accumulation in the upper part of the dam reservoir during floods, contributing significantly to regional disaster prevention. In the downstream area of the dam, sediment supplied from upstream during heavy rain changes the riverbed to various sizes of materials such as stones, gravel, and sand, expanding sandbars and forming clear riffles and pools, bringing it closer to its natural state. Additionally, the increase in fresh algae, which serves as food for fish, is expected to have environmental benefits by restoring diverse habitats for living organisms. In the past two sediment management operations where surveys and evaluations were completed, it was confirmed that sediment accumulation was suppressed in the upper part of the dam reservoir, maintaining and improving flood safety. Downstream of the Saigo Dam, the supply of relatively large-sized sediment such as gravel and stones increased riffles, improving the river environment. This sediment gradually moves downstream with each water inflow. As a result, downstream of the Ouchihara Dam, the increase in sand supply has created more suitable riverbeds for ayu spawning, indicating signs of river environment improvement. https://www.kyuden.co.jp/company_history_energy_hydropower_hydropower-1.html

[11] In Europe and the United States, coal-fired power stations are located along inland rivers, raising concerns about coal ash flowing to lower lands. In the United States, the Environmental Protection Agency conducts assessments on the management of coal ash disposal sites. However, Kyushu EP's coal-fired power stations are located adjacent to the sea, and the generated coal ash is enclosed by concrete retaining walls and reclaimed to create landfill sites (two locations: within the Matsuura Power Station and the Reihoku Power Station). These landfill sites are maintained and managed in compliance with the Waste Management Law to ensure safety.

7.3. Target

We have set the following targets related to natural capital. As in the past, we will disclose the progress of these goals annually in the ESG Data Book.

Measurement Indicator Number	Indicator	Kyuden Group Target	Target Year	Reference
	GHG emissions	• Achieving Carbon Neutrality **by 2050**	2050	• Carbon Neutral Vision 2050 p1
		• Compared to FY2013, reduce greenhouse gas emissions (Scope 1+2+3) **by 60% by 2030**, and domestic business **by 65%**	2030	• ESG Data Book 2024 p12
C2.0	Pollutants released to soil split by type	• Number of legal violations related to the release of pollutants into soil: **0**	2024	• ESG Data Book 2024 p10
C2.1	Wastewater discharge	• Number of legal violations related to wastewater discharge: **0**	2024	• ESG Data Book 2024 p10
C2.2	Waste generation and disposal	• Recycling rate excluding coal ash: **98%**	2024	• ESG Data Book 2024 p5
C2.3	Plastic pollution	• Recycling rate of waste plastic: **90%**	2024	• ESG Data Book 2024 p5
C2.4	Non-GHG air pollutants	• Number of legal violations related to air pollutants other than greenhouse gases: **0**	2024	• ESG Data Book 2024 p10
C3.0	Water withdrawal and consumption from areas of water scarcity	• Number of legal violations related to water resources: **0**	2024	• ESG Data Book 2024 p10
C3.1	Quantity of high-risk natural commodities sourced from land/ocean/freshwater	• Green procurement rate (office supplies) : **97%** • Number of sustainability discussions with major suppliers: **17 companies**	2024	• ESG Data Book 2024 p6, p8

8. Appendix

8.1. Cross-Reference Table of TNFD Disclosure Recommendations and Report Sections

Cross-Reference Table of TNFD Disclosure Recommendations and Report Sections

TNFD Disclosure Recommendations		Report Sections	
		Chapter/ Section	Page
Governance	A. Describe the board's oversight of nature-related dependencies, impacts, risks and opportunities.	2.1.	4
	B. Describe management's role in assessing and managing nature-related dependencies, impacts, risks and opportunities .	2.1.	4
	C. Describe the organisation's human rights policies and engagement activities, and oversight by the board and management, with respect to Indigenous Peoples, Local Communities, affected and other stakeholders, in the organisation's assessment of, and response to, nature-related dependencies, impacts, risks and opportunities.	2.2.	4
Strategy	A. Describe the nature-related dependencies, impacts, risks and opportunities the organisation has identified over the short, medium and long term.	3.2. 5.1. 6.2.	6 13 16
	B. Describe the effect nature-related dependencies, impacts, risks and opportunities have had on the organisation's business model, value chain, strategy and financial planning, as well as any transition plans or analysis in place.	4.1.	9
	C. Describe the resilience of the organisation's strategy to nature-related risks and opportunities, taking into consideration different scenarios	4.1. 5.1. 6.1. 6.2.	9 13 16 16
	D. Disclose the locations of assets and/or activities in the organisation's direct operations and, where possible, upstream and downstream value chain(s) that meet the criteria for priority locations.	3.2.	6
Risk and Impact Management	A(i). Describe the organisation's processes for identifying, assessing and prioritising nature-related dependencies, impacts, risks and opportunities in its direct operations.	3.1. 3.2. 5.1. 6.1.	5 6 13 16
	A(ii). Describe the organisation's processes for identifying, assessing and prioritising nature-related dependencies, impacts, risks and opportunities in its upstream and downstream value chain(s) .	3.1. 3.2. 5.1. 6.1.	5 6 13 16
	B. Describe the organisation's processes for managing nature-related dependencies, impacts, risks and opportunities .	5.2.	15
	C. Describe how processes for identifying, assessing, prioritising and monitoring nature-related risks are integrated into and inform the organisation's overall risk management processes.	5.2.	15
Metrics and Targets	A. Disclose the metrics used by the organisation to assess and manage material nature-related risks and opportunities in line with its strategy and risk management process	7.3.	23
	B. Disclose the metrics used by the organisation to assess and manage dependencies and impacts on nature .	7.1. 7.2. 7.3.	21 22 23
	C. Describe the targets and goals used by the organisation to manage nature-related dependencies, impacts, risks and opportunities and its performance against these.	7.3.	23

8.2. References

- TNFD (2023) Recommendations of the Taskforce on Nature-related Financial Disclosures
- TNFD (2023) Draft sector guidance Electric utilities and power generators
- TNFD (2024) Additional sector guidance Electric utilities and power generators