



Japan Petroleum Exploration Co., Ltd.

TNFD Report 2026

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Introduction

About this report

The JAPEX Group sets out its policy on biodiversity and ecosystem preservation in the JAPEX HSE Policy. We regard biodiversity and ecosystem conservation as sustainability issues and work to conserve the environment and take environmental considerations into account in our business activities in Japan and overseas. As part of our initiatives under this policy, in FY2026 we are publishing our first standalone TNFD Report. We have previously disclosed nature-related information through our Integrated Report and other channels; this report provides more detailed disclosure in line with the recommendations of the Taskforce on

Nature-related Financial Disclosures (TNFD). Specifically, we focused on our core business—the oil and natural gas exploration and production (E&P) field—and its value chain. We analyzed the relationship between our business and nature (dependencies and impacts) as well as the associated risks. We also conducted a scenario analysis with reference to the TNFD's "Additional sector guidance – Oil and gas". On this basis, we identified risks under "Strategy" and developed core metrics under "Metrics and targets," expanding the depth of our previous disclosures.

Overview of disclosures aligned with the four pillars of the TNFD Recommendations

The TNFD recommends that organizations structure their disclosures around four pillars: Governance, Strategy, Risk and impact management, and Metrics and targets. In line with the Recommendations, we conducted an analysis using nature-related scenarios and considered

the content of our disclosures with reference to the TNFD's "Additional sector guidance – Oil and gas". The key recommended disclosures and the specific disclosures in this report are set out below.

Key Recommended Disclosures

Disclosures in This Report

01. Governance

- The board's oversight of nature-related dependencies, impacts and risks
- Management's role in assessing and managing nature-related dependencies, impacts and risks
- Human rights policies and engagement activities, and oversight by the board and management, with respect to Indigenous Peoples, Local Communities, affected and other stakeholders

- Governance structure
- Respect for human rights

02. Strategy

- The nature-related dependencies, impacts and risks the organization has identified
- The effect nature-related dependencies, impacts and risks have had on the organization's business model, value chain, strategy and financial planning, as well as any transition plans or analysis
- The resilience of the organization's strategy to nature-related risks, taking into consideration different scenarios
- Disclosure of the locations of assets and/or activities in direct operations and, where possible, upstream and downstream value chain(s) that meet the criteria for priority locations

- Overview of dependencies and impacts on nature across our business fields
- Identification of priority business fields
- Identification of priority locations
- Material dependencies and impacts in the E&P field, our priority field
- Scenario analysis of nature-related risks
- Identification of nature-related risks

03. Risk and impact management

- Processes for identifying, assessing and prioritising nature-related dependencies, impacts and risks in direct operations and in upstream and downstream value chain(s)
- Processes for managing nature-related dependencies, impacts, and risks
- Integration of processes for identifying, assessing and managing nature-related risks into the organization's overall risk management

- Processes for identifying and assessing risks
- Integration of nature-related risks into enterprise-wide risk management

04. Metrics and targets

- Metrics used to assess and manage material nature-related risks in line with the strategy and risk management process
- Metrics used to assess and manage dependencies and impacts on nature
- Targets used to manage nature-related dependencies, impacts and risks, and the organization's performance against these

- Metrics and targets for assessing and managing nature-related issues

General requirements

Application of materiality

In disclosing nature-related risks, we provide information from both of the perspectives called for by the TNFD Recommendations. One is information that could affect our business activities and financial position (the financial materiality perspective); the other is the impacts of our business activities on the natural environment (the impact materiality perspective).

Scope of disclosures

The E&P field, our core business, is characterized by relatively large dependencies and impacts on the natural environment in processes that involve drilling. The analysis and assessment in this report therefore cover the entire value chain of the E&P field, and we conducted a LEAP analysis* focusing in particular on our operational sites in Japan and overseas.

Location of nature-related issues

Among our businesses, we selected the operational sites of the E&P field, where impacts on and dependencies on the natural environment are considered particularly significant, as the target area and conducted a LEAP analysis. We conducted a comprehensive analysis and assessment based on the assessment criteria set out by the TNFD: biodiversity importance, ecosystem integrity, physical water risk and importance for ecosystem service provision. On this basis, we identified the sites most likely to have material nature-related issues that should be addressed as a priority.

Integration with other sustainability-related disclosures

Going forward, we will consider providing information on nature-related issues in a way that is consistent with, and where possible linked to, our other disclosures.

Time horizons considered

This analysis and assessment were conducted assuming medium-term (around 2030) and long-term (around 2050) time horizons. These time horizons are also aligned with the target years (2030 and 2050) of the Kunming-Montreal Global Biodiversity Framework (GBF), a shared international goal.

Engagement with Indigenous Peoples, Local Communities and affected stakeholders

In identifying and assessing nature-related issues and advancing specific measures, we strictly comply with the JAPEX Group's Human Rights Policy. We respect the rights of all stakeholders affected by our business activities, including Indigenous Peoples and Local Communities, and engage with them appropriately (for details, see "Respect for human rights" under Governance).

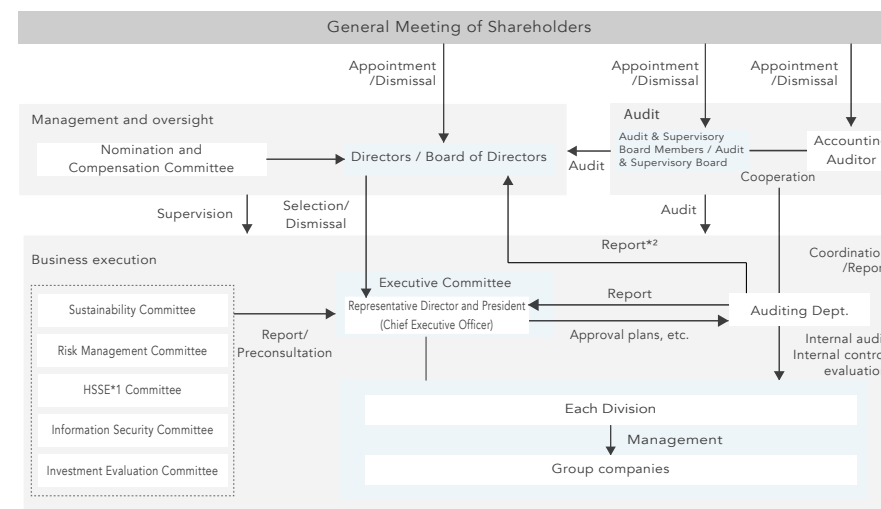
* A comprehensive evaluation process for identifying and assessing nature-related risks and opportunities, focusing on the biomes and regions where a business operates. "LEAP" refers to the four phases of "Locate", "Evaluate", "Assess", and "Prepare."

Governance

Governance structure

Nature-related issues such as biodiversity and water resources are positioned as sustainability issues for the JAPEX Group. We have established a structure for appropriate decision-making and risk management under the oversight of the Board of Directors (Figure 1). Sustainability-related matters associated with medium- to long-term management issues are deliberated by the Sustainability Committee, which is chaired by the President. Depending on their importance, matters deliberated are referred to the Executive Committee and then reported to the Board of Directors as appropriate. Particularly important matters are resolved by the Board of Directors. The committees established at the management level work together functionally. The Risk Management Committee is responsible for updating and monitoring nature-related risks and for incorporating them into the management of company-wide principal risks (integrated risk management). The Sustainability Committee discusses response policies for the material risks identified and considers target setting and how to incorporate them into strategy. In addition, when making investment decisions, the Investment Evaluation Committee assesses nature-related risks in new projects, estimates their financial impacts and conducts sensitivity analyses. Under this collaborative structure, following the LEAP analysis in FY2024, we conducted a medium- to long-term scenario analysis in FY2025.

Figure 1: Governance Structure (as of July 1, 2026)



*1 Health, Safety, Security and Environment: occupational health, safety, environment, and overseas security

*2 Clarify direct reporting from the Auditing Dept. to the Board of Directors in response to the revision of the internal control reporting system

Respect for human rights

Under the JAPEX Group Code of Ethics and Conduct, we have established a Human Rights Policy. It sets out our basic stance of promoting respect for the human rights of stakeholders involved in our business activities across the entire value chain. Our Board of Directors oversees compliance with this policy and the progress of related initiatives. The Sustainability Committee deliberates on important matters concerning respect for human rights and receives reports on the identification and evaluation of human rights risks and the status of responses. We have also built a human rights due diligence mechanism based on the United Nations Guiding Principles on Business and Human Rights, and we work to identify, prevent and mitigate adverse impacts on human rights. Specifically, we regularly conduct questionnaire surveys of Group companies and business partners on their level of response to human rights risks.

The "human rights issues related to business activities" defined in the Human Rights Policy include "impacts on local residents" and "the rights of Indigenous Peoples." To

prevent adverse environmental and social impacts of our business activities on local residents, we give consideration to land rights and the right to livelihood. To prevent harm to the health of local residents, we also work to prevent pollution of the air, soil and water resources.

In our business activities in countries and regions where Indigenous Peoples live, we recognize their unique cultures and histories, respect their rights, and work to avoid, or otherwise mitigate and minimize, adverse impacts. To respond appropriately to human rights concerns, we have established a reporting and consultation hotline available to all stakeholders involved in our business activities, both inside and outside the Group. When human rights violations are confirmed, we take the necessary corrective and remedial measures.

Strategy

Overview of dependencies and impacts on nature across our business fields

We assessed the relationship between our business fields and the natural environment from the perspectives of dependencies and impacts. For our three fields—E&P, I/U (Infrastructure and Utility) and CN (Carbon Neutral)—we assessed dependencies and impacts on nature for each key process and visualized the results as a heat map*¹ (Figure 2). The results are classified on a five-point scale*², from Very High (VH) to Very Low (VL), for each dependency and impact factor.

To create the heat map, we selected the economic activity classes corresponding to each of our fields from the International Standard Industrial Classification of All Economic Activities (ISIC), an international standard for classifying industrial activities. We then classified and defined the key processes of the three fields to be assessed. Next, we used ENCORE, an analytical tool for assessing dependencies and impacts on nature, to

understand the relationship between the two. For impacts, we also referred to the SBTN Sectoral Materiality Tool (Step 1a), which screens the materiality of impacts on nature by industry. The assessment revealed a trend across the Group's businesses as a whole. Dependencies on water resources, other resources and climate regulation, and impacts from GHG emissions and water use, were each rated Very High (VH) in some processes. By process, the impact of GHG emissions was rated VH for "Exploration and development" in the E&P field and "Thermal power generation" in the I/U field. The impact of water use was rated VH in a total of four processes across fields. As for dependencies, high dependencies were identified in the I/U field: thermal power generation on water supply, biomass-related processes on other provisioning services, and solar power generation on climate regulation.

Identification of priority business fields

Based on the heat map assessment, we also gathered information on external cases in each field where dependencies and impacts on nature arise, and examined the risks anticipated in each of our fields. We then verified the results based on the "assessment of dependencies and impacts on nature" and the "qualitative assessment of nature-related risks." This confirmed that,

of all our fields, the E&P field has particularly large dependencies and impacts on nature and particularly large risks. Based on this assessment, we identified the E&P field as the field in which a LEAP analysis should be conducted as the highest priority.

Figure 2: Heat map of dependencies and impacts on nature

Field	Key process	Dependency level							Impact level										
		Water resources	Other resources	Pollution removal	Water recycling/Water quality	Climate regulation	Disaster mitigation/Soil and sediment	Other regulating and maintenance services	Terrestrial ecosystem use	Freshwater ecosystem use	Marine ecosystem use	GHG emissions	Water use	Waste	Non-GHG air pollutants	Soil pollution	Water pollution	Disturbances	Introduction of invasive alien species
E&P	Exploration/Development	VL	–	VL	–	M	L	–	H	H	H	VH	VH	H	H	H	H	H	–
	Production/Sales	L	–	M	H	M	M	L	H	H	H	H	VH	H	H	H	H	–	L
I/U	Natural gas supply	–	–	L	M	M	H	VL	H	H	H	H	H	M	H	H	H	H	M
	Thermal power generation	VH	–	L	M	M	H	VL	M	H	–	VH	VH	H	H	H	H	H	–
	Biomass power generation	M	VH	L	M	M	H	VL	M	–	–	L	H	H	H	H	H	–	–
	Solar power generation	VL	–	L	M	VH	H	VL	H	–	–	L	L	M	–	L	L	–	–
CN	CCU•CCUS	VL	–	VL	–	VL	M	–	H	H	H	L	VH	H	L	H	L	H	–

*1 Prepared by JAPEx based on the assessment results published in the Integrated Report 2024

*2 VH: Very High, H: High, M: Medium, L: Low, VL: Very Low, –: Our key processes are not expected to have significant dependency or impact on the item

Strategy

Identification of priority locations

The TNFD Recommendations call for organizations to identify and disclose "priority locations" from among the locations involved in their direct operations and value chains (Figure 3). Priority locations are "sensitive locations," where surveys of operations and the surrounding natural environment have identified nature-related sensitivities, or "material locations," where the organization has identified material nature-related dependencies, impacts, risks and opportunities.

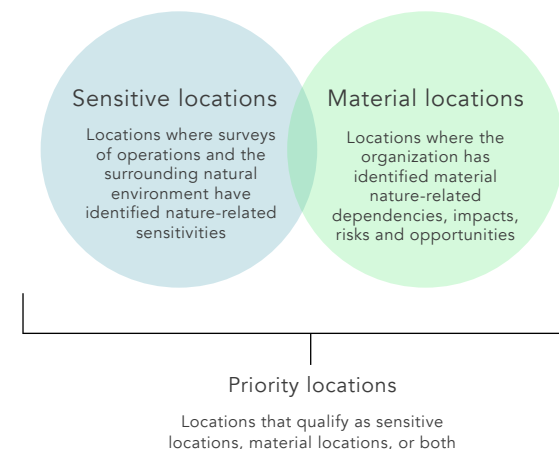
To identify sensitive locations, we conducted a Locate analysis of our sites in Iraq, Indonesia, Japan, Russia, Singapore and the United States to understand the interface between the E&P field's drilling and production sites and nature. We selected indicators from four perspectives: biodiversity importance, ecosystem integrity, physical water risk and importance for ecosystem service provision (see Appendix 1-1 and 1-2). We then rated each site on a five-point scale using three assessment axes reflecting these perspectives (see Appendix 2). Sites rated High (H) or above on any of the axes were identified as sensitive locations.

Taking into account their significance to our business, we identified nature-related dependencies, impacts and risks and designated our sites in Japan and the United States as material locations.

Material dependencies and impacts in the E&P field, our priority field

Taking into account the conditions at the E&P field's business sites, we assessed our dependencies on ecosystem services and our impacts on nature. For dependencies, across the E&P field as a whole, we identified as material dependencies the ecosystem services that contribute to mitigating landslides, sediment disasters and floods, and the water used in operations. For impacts on nature, we identified GHG emissions, terrestrial and marine ecosystem use, non-GHG air pollutants, soil pollution, water pollution and disturbances as material impacts common to all sites. The assessment by process identified additional material impacts. These are non-GHG air pollutants in the form of volatile organic compounds (VOCs) in the separation process, and solid waste, soil pollution and water pollution in the separation, physical treatment and storage processes.

Figure 3: Assessment of priority locations – sensitive and material locations



Scenario analysis of nature-related risks

For the risks identified, we conducted a scenario analysis based on the FPS+Nature scenario* to test the resilience of our business strategy to nature-related changes, developments and uncertainties. The analysis assumes medium-term (around 2030) and long-term (around 2050) time horizons, which also correspond to the target years of the Kunming-Montreal Global Biodiversity Framework (GBF). The magnitude of impact of each risk was rated on a three-point scale based on the financial impact thresholds used in our TCFD analysis: 3 (JPY 5.0 billion or more), 2 (JPY 1.0 billion or more but less than JPY 5.0 billion) and 1 (less than JPY 1.0 billion). We also assessed the likelihood of each risk on a three-point scale, taking into account conditions at each operating location: 3 (existing laws or regulations or official requests / at least once a year), 2 (indications of potential new regulations or official action / once every few years), and 1 (no planned regulations or response measures / once every few decades). Risks with combined scores of 4 or more are subject to Risk Management Committee deliberation. For risks with combined scores of 5 or more, the Sustainability Committee discusses response policies and considers target setting and incorporation into strategy. We will continue monitoring risks and considering mitigation measures.

* A realistic forecast scenario that integrates nature-related policies, such as those concerning forests and land use, into a climate change scenario developed by the Principles for Responsible Investment (PRI).

Strategy

Identification of nature-related risks

We conducted a scenario analysis for the E&P field based on the results of the dependency and impact assessment. No nature-related risks with a material financial impact were identified, and all of the risks extracted were rated low to medium. The main risks identified are legal risks arising from soil pollution and water pollution caused by leaks and spills during operations, and physical risks associated with drought and water withdrawal restrictions. In particular, in Iraq, where water stress is high, and in the United States, where demands for water reuse and recycling are growing, we recognize the potential need for additional investment in facilities and technology. Even so, we assess that the impact on our business as a whole will remain within a manageable range. Looking ahead to this trend, we will formulate response policies and advance our risk management.

Table 1: List of nature-related risks*

Risk category		Magnitude of risk		Description of risk
		2030	2050	
Transition risks	Technology	Low	Low	Increase in facility costs associated with water recycling in drought-affected areas
		Low	Low	Increase in implementation costs associated with the transition to environmentally sustainable and safe technologies
	Policy	Low	Low	Increase in costs of responding to stakeholder expectations and societal demands associated with impacts on the natural environment (ecosystems and the atmosphere)
	Liability	Medium	Medium	Impacts on ecosystems and fisheries, and litigation and compensation claims, associated with soil pollution and water pollution caused by leaks and spills during drilling and production (separation and recovery)
		Low	Low	Fines and compensation claims associated with emissions of air pollutants exceeding permitted limits
Physical risks	Acute and chronic	Low	Medium	Water withdrawal restrictions due to drought or regulation, and the risk of production curtailment and suspension of operations

* Prepared by JAPEX based on the assessment results published in the Integrated Report 2026

Risk and impact management

Processes for identifying and assessing risks

We identify and assess nature-related risks under the Risk Management Committee, which is chaired by the President. The assessment covers the E&P field, our core business. It includes the full range of activities at the major operational sites and business assets we manage: from "exploration," such as geological surveys and exploratory drilling, through "development," such as production well drilling and facility construction, to "production," encompassing extraction, separation, impurity treatment and storage. In conducting the assessment, we organize the key items for the oil and gas sector with reference to the TNFD Additional sector guidance for oil and gas. In the external environment assessment, we first identify impact drivers, such as water use, that place pressure on the environment. We then measure the magnitude of the resulting pressure using pressure indicators such as water withdrawal and evaluate the state of the

ecosystem services affected by that pressure using biodiversity indicators such as fish population size (see Section 3 of the Appendix). In the internal environment assessment, we comprehensively analyze the risks that our interactions with nature pose to our business from the perspectives of dependencies and impacts. From the dependency perspective, we evaluate the implications for business continuity if natural resources, such as water, were to be degraded, as well as the financial impacts of switching to alternatives. From the impact perspective, we evaluate how we identify and manage the magnitude and extent of environmental pressures caused by our business activities, the time required for the natural environment to recover, and the risks arising from an inability to respond to requests from local communities and other stakeholders.

Integration of nature-related risks into enterprise-wide risk management

The Risk Management Committee meets quarterly in principle and discusses nature-related risks once a year. Among the risks extracted by the Risk Management Committee, those recognized as requiring a

particularly long-term response are referred to the Sustainability Committee. The Sustainability Committee discusses response policies and also considers target setting and how to incorporate them into strategy.

Expert Commentary



Specially Appointed Professor
Graduate School of
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Mariko Kawaguchi

It is now widely recognized that the environmental issue facing the oil and natural gas business is climate change. Far less recognized, however, is the business's close relationship with "natural capital," including biodiversity and water resources. In modern oil and natural gas development, appropriate safety measures and environmental considerations are in place during normal operations, yet the industry has a history of serious impacts on ecosystems when accidents occur, such as crude oil spills. For corporate management, environmental measures and biodiversity conservation have been regarded as the cost of regulatory compliance. I believe this TNFD disclosure can be a valuable step toward elevating environmental measures and ecosystem conservation to the level of management strategy, by redefining what was once a cost as an "investment" in the "natural capital" that underpins corporate management.

This disclosure, which draws on the latest knowledge such as the LEAP approach, clearly presents the extent to which JAPEX's business depends on and affects natural capital, offering management insights into medium- to long-term management issues. In particular, it brings into sharp relief the liability associated with soil pollution and water pollution risks at each operating location, and the physical and financial risks related to water resource conservation. Climate change is now intensifying around the world, with droughts and water shortages, typhoons, torrential downpours and floods, extreme heat and rising sea temperatures. There is concern that operating conditions for JAPEX, which seeks to provide a stable supply of energy while confronting the oceans, the land and ecosystems,

will deteriorate in the future. In its overseas strategy in particular, including Iraq and North America, water resources and natural capital conservation are expected to grow in importance as management issues. At the same time, the interconnections and synergies between climate change and natural capital and water resources are becoming clearer. The way this report makes visible the value of natural capital and water resources, and the risks to biodiversity, which until now had been understood only intuitively, is highly commendable. From a risk management perspective, it is also important that domestic sites not included in the priority locations are placed on the material locations list and monitored in anticipation of future risks. It is likewise important that items assessed as having low impact this time are managed at the business division level.

With regard to human rights, the report discloses that a Human Rights Policy has been formulated and is being applied. From the perspective of biodiversity conservation, expectations for the knowledge and skills of Indigenous Peoples are particularly high. I encourage JAPEX to consider incorporating its human rights initiatives into the metrics it manages, so that they can be evaluated and managed in an integrated manner.

This TNFD disclosure represents JAPEX's commitment to natural capital conservation. Going forward, I hope JAPEX will develop strategies that create synergies with its existing climate change measures, and pursue management that is more resilient to a rapidly changing global environment and to geopolitical risks.

Metrics and targets

Metrics and targets for assessing and managing nature-related issues

Based on our HSE management system, we continuously collect and monitor environmental performance data in Japan and overseas, and we disclose the results in the ESG Performance Data section of our website. In this report, we have organized the environmental data we have been managing (such as VOC and air pollutant emissions, water withdrawal and discharge, waste, and recycling rate) by linking them to the metrics recommended by the TNFD (Table 2).

The number of serious environmental pollution incidents remained at zero in FY2025. We are continuing our initiatives to maintain a 45% reduction in VOC emissions from the FY2000 level. We have also set targets that relate to nature-related issues, such as reducing waste and water use, and continuously monitor progress against them.

Table 2: Metrics and performance [Consolidated]

Category	Metric ID	Metric* ¹		Unit	FY2023	FY2024	FY2025	Target* ²
Pollution/ Pollution removal	C2.1	Water discharge* ³		thousand kL	47,631	47,842	49,052	—
	C2.2	Waste Generation and Treatment	Non-hazardous waste	thousand tons	21	12	9	Promote initiatives to reduce waste
			Hazardous waste		1.37	1.43	2.22	
	C2.4	Total non-GHG air pollutants by type	VOC	tons	977	811	829	Continue initiatives to maintain a 45% reduction in emissions from the base year (FY2000)
			NOx (nitrogen oxide)		123	135	141	—
			SOx (sulfur oxide)		6	3	1	—
Resource use/ Replenishment	C3.0	Water withdrawals in water stressed regions		kL	0	0	0	—
		Percentage of operations in water stressed regions		%	0	0	0	—
Climate Change	—	E&P Business: GHG emissions per barrel of oil equivalent produced		kg-CO2/boe	39	36	38.7	—
Pollution removal	A2.1	Recycled		thousand tons	16.18	4.62	4.94	—
Resource use/ Replenishment	A3.0	Water withdrawal		thousand kL	46,713	46,960	48,145	Promote initiatives to reduce water use
Mitigation hierarchy	A23.1	Recycling rate		%	70.9	34.6	42.8	—

*1 Prepared by JAPEX with reference to "Recommendations of the Taskforce on Nature-related Financial Disclosures" and "Additional sector guidance – Oil and gas".

*2 Taken from JAPEX's "CSR Activities' Action Plans, Targets, and Achievements" (FY2024–FY2025)

*3 Water withdrawal + Produced water = Water discharge

Appendix

1-1 Indicators used to identify priority locations

Theme	Indicator	Description	Data source
Biodiversity importance	Protected areas	Data on areas designated as protected areas under international conventions and other instruments, drawn from the World Database on Protected Areas (WDPA). Developed by the International Union for Conservation of Nature (IUCN), with management categories I–VI established to classify protected areas.	IBAT
	Key Biodiversity Areas (KBAs)	Data on areas identified under international criteria as being of key importance for biodiversity conservation. Extends to other taxonomic groups the concept of important areas for birds identified by the international environmental NGO BirdLife International.	
	Species diversity index	An indicator of the number of species in a given area, weighted by rarity.	
	Marine START metric	An indicator that quantifies the potential for threat abatement actions for species at a given location to contribute to reducing global extinction risk.	Turner et al. (2023)
Ecosystem integrity	Ecosystem integrity	An indicator of the extent to which species populations remain relative to a pristine natural state free from human pressures such as land conversion.	Newbold et al. (2016)
	Marine wilderness	Data indicating marine areas subject to little or no anthropogenic stress.	Jones et al. (2018)
	Tree cover loss	An indicator of tree cover loss between 2001 and 2023.	Global Forest Watch
	Projected impacts on freshwater biodiversity	The extinction rate of freshwater fish between 1990 and 2090 due to reductions in water availability associated with climate change.	Water Risk Filter

Appendix

1-1 Indicators used to identify priority locations

Theme	Indicator	Description	Data source
Physical water risk	Water stress	A score based on the ratio of water withdrawal to water supply in a river basin, indicating the degree of pressure on water supply and demand.	Aqueduct
	Flood inundation risk	Inundation depth (m) for a flood with a 100-year return period (assessed globally at a 500 m grid resolution).	Flood Risk Finder (MS&AD)
	Water pollution	An indicator assessing whether water quality in a river basin adversely affects freshwater biodiversity and people, based on biochemical oxygen demand (BOD), electrical conductivity (EC) and nitrogen load.	Water Risk Filter
	Marine water quality	An indicator assessing whether water quality in a river basin adversely affects marine biodiversity and people, based on nitrogen load and ocean acidity.	
Importance for ecosystem service provision	Indigenous Peoples' and Local Communities' lands	A data platform that publishes maps and other information on lands collectively held and used by Indigenous Peoples and Local Communities.	LandMark

1-2 Proximity-based assessment criteria

Area (Type of operation)	Biodiversity importance			
	None	Low	Moderate	High
Onshore (drilling)	>10.0km	3.0-10.0km	1.0-3.0km	<1.0km
Offshore (drilling)	>20.0km	6.0-20.0km	2.0-6.0km	<2.0km

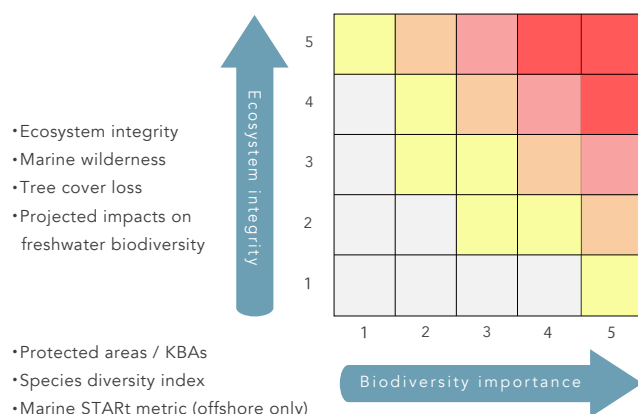
- In the proximity-based assessment method, with reference to IBAT, the expected extent of environmental impact for each type of operation is taken into account, and sites are rated on a four-point scale according to their distance from key conservation areas (such as protected areas and KBAs)

Appendix

2. Assessment methods used to identify priority locations*¹

"Biodiversity importance" × "Ecosystem integrity"

The highest score for each theme was applied to the matrix below, and the priority level was rated on a five-point scale.



"Physical water risk"

Indicators: Water Stress, Flood Risk, Water Pollution, and Marine Water Quality

The priority level was assessed based on the highest score among the indicators.

Score	Priority level
5	VH:Very High
4	H:High
3	M:Medium
2	L:Low
1	None

"Importance for ecosystem service provision"

Indicator: Importance of Ecosystem Service Provision

The priority level was assessed based on the highest score among the indicators.

Score	Priority level
5	VH:Very High
4	H:High
3	M:Medium
2	L:Low
1	None

*¹ These assessment methods were prepared by JAPEX based on the databases, indicators and criteria described in Appendix 1-1, 1-2.

3. Method for identifying material dependencies and impacts in the priority field

Impact drivers and ecosystem services assessed*²

Terrestrial, freshwater and marine ecosystem use	Non-GHG air pollutants
GHG emissions	Waste, water pollution and soil pollution
Water use	Disturbances
Soil and sediment retention	Climate regulation
Water resources	Water quality

Indicators used to assess dependencies and impacts*²

Pressure indicators: indicators of the magnitude of pressure placed on the natural environment

Impact driver / Ecosystem service	(Example) Pressure indicators
Terrestrial ecosystem use	Tree cover loss
Water use	Water withdrawal

Biodiversity indicators: indicators of the state of biodiversity

Impact driver / Ecosystem service	(Example) Biodiversity indicators
Terrestrial ecosystem use	Forest area
Water use	Fish population size

*² Prepared by JAPEX based on ENCORE (Exploring Natural Capital Opportunities, Risks and Exposure) and the Science Based Targets Network (SBTN) Sectoral Materiality Tool (Step 1a)

Glossary

Term	Definition
ISIC	Abbreviation of International Standard Industrial Classification of All Economic Activities. A standard classification system developed by the United Nations Statistics Division to classify entities by their economic activity, based on internationally agreed concepts, definitions, principles and classification rules. Used for the collection and reporting of economic statistics and for international comparisons.
Transition risks	Risks that arise from changes in society aimed at halting or reversing the degradation of nature.
Dependencies	Aspects of environmental assets and ecosystem services that a person or an organization relies on to function. (For example, a company's business model may depend on ecosystem services such as the regulation of water flow and water quality, the regulation of hazards such as fires and floods, the provision of suitable habitat for pollinators, which in turn provide a service directly to the economy, and carbon sequestration.)
Impacts	<p>Changes in the state of nature (quality or quantity), which may result in changes to the capacity of nature to provide social and economic functions. Impacts can be positive or negative, and can be the result of an organization's or another party's actions. They are classified as one of the following:</p> <ul style="list-style-type: none"> • Direct: A change in the state of nature caused by a business activity with a direct causal link • Indirect: A change in the state of nature caused by a business activity with an indirect causal link (e.g., indirectly caused by climate change resulting from greenhouse gas emissions) • Cumulative: A change in the state of nature (direct or indirect) that occurs due to the interaction of the activities of different actors operating in a landscape, seascape or freshwater ecosystem
Impact drivers	A measurable quantity of a natural resource that is used as an input to production (e.g., the volume of sand and gravel used in construction) or a measurable non-product output of a business activity (e.g., nitrogen oxide emissions released into the atmosphere by a manufacturing facility).
SBTN Sectoral Materiality Tool (Step 1a)	A screening tool used in Step 1a of the SBTN process to make an initial determination, based on ISIC industry and activity data, of whether the economic activities in a company's direct operations and upstream value chain are likely to have material environmental pressures on nature.
ENCORE	Abbreviation of Exploring Natural Capital Opportunities, Risks and Exposure. A free online tool that maps how economic activities depend on and may impact nature, helping organizations understand their exposure to nature-related risks. Operated by Global Canopy, UNEP FI and UNEP-WCMC.
Marine ecosystem use	Use of marine areas. Considerations include the area of aquaculture by product, the area of seabed drilling, and vessel traffic.
Disturbances	<p>Changes to the structure or environment of ecosystems and habitats, or changes caused by human activity.</p> <ul style="list-style-type: none"> • Ecological and environmental changes: These may be non-anthropogenic or anthropogenic, such as typhoons, volcanic eruptions, avalanches, logging, thinning and mowing. Disturbances that exceed the resilience of an ecosystem (fundamentally eliminating organisms) can lead to species extinction and habitat degradation, but can also create habitat that pioneer species and the next generation of individuals can use (assessment must also take long-term changes into account). • Changes caused by human activity: These include noise and light pollution. Not only the magnitude of the impact (decibels of noise, lumens of light pollution, etc.) but also its duration is taken into account.

Glossary

Term	Definition
Climate regulation	<p>The regulation of climate by nature, broadly divided into the following three scales:</p> <ul style="list-style-type: none"> • Global: Climate is regulated through the long-term storage of CO₂ in soils, vegetation and the oceans (so-called green carbon and blue carbon). • Regional: Climate is regulated by ocean currents and winds. • Regional and local: Vegetation regulates temperature, humidity and wind speed.
KBA	Sites in terrestrial, freshwater and marine ecosystems that "contribute significantly to the global persistence of biodiversity." Developed on the basis of the Important Bird and Biodiversity Areas (IBAs) established by the international NGO BirdLife International, and extended to taxonomic groups other than birds.
Waste	The disposal of solid waste. Considerations include the volume of waste by classification (non-hazardous waste, hazardous waste, radioactive materials, etc.), by material composition (lead, plastics, etc.) and by disposal method (landfill, incineration, recycling, treatment by specialist contractors, etc.).
GHG emissions	Emissions of greenhouse gases. Considerations include emissions not only of CO ₂ but also of methane (CH ₄), nitrous oxide (N ₂ O), sulfur hexafluoride (SF ₆), hydrofluorocarbons (HFCs) and others.
Integrity	The concept of how much of nature remains compared with its undisturbed state (before human activity). The more nature that remains, the higher the integrity.
Water pollution	The discharge of pollutants that degrade water quality. Considerations include the volume of nutrients (such as nitrates and phosphates) and other substances (such as heavy metals and chemicals) discharged in wastewater.
Water quality	The function of maintaining the chemical condition of freshwater and seawater, sustained by securing habitats favorable to biota.
Ecosystem	A dynamic complex of plant, animal and microorganism communities and their non-living environment interacting as a functional unit.
Ecosystem services	Ecosystem functions from which people derive benefits.
Biodiversity	A term that refers not merely to the variety of plant and animal species, but also to the interconnections among living things that have developed over the Earth's long history.
Indigenous Peoples	<p>Peoples who have their own distinct institutions and cultures and who seek to preserve and develop their identity.</p> <ul style="list-style-type: none"> • Historical continuity and identity: Communities, peoples and nations that have a historical continuity with pre-invasion and pre-colonial societies that developed on their territories, and that consider themselves distinct from other sectors of the societies now prevailing there. They are determined to preserve, develop and transmit to future generations their territories and identity in accordance with their own cultural patterns and social and legal institutions. • Self-identification and acceptance: Persons who self-identify as Indigenous (group consciousness) and are recognized and accepted by the group as its members. They retain the sovereign right and power to decide who belongs to them, without external interference. • ILO Convention No. 169: Descendants of peoples who inhabited a country or region at the time of conquest, colonization or the establishment of present state boundaries, and who retain some or all of their own institutions.

Glossary

Term	Definition
Freshwater ecosystem use	Use of freshwater areas (rivers, lakes, wetlands, etc.). Considerations include not only the area of infrastructure such as bridges, dams and levees, but also the area of rivers, lakes and wetlands used.
Soil pollution	The discharge of soil pollutants. Considerations include the volume of waste discharged over a given period and the volume of waste retained in the soil.
Soil and sediment retention	The stabilization of soil and prevention of erosion by vegetation. Vegetation not only protects terrestrial, coastal and marine ecosystems and coastal wetlands (such as mangrove forests), but also prevents avalanches and landslides on slopes. Mangroves and seaweeds prevent coastal erosion.
Biome	A community of organisms within an ecosystem classified by climate (e.g., tropical rainforest).
Non-GHG air pollutants	Emissions of air pollutants other than greenhouse gases. Considerations include emissions of air pollutants such as PM2.5, PM10, volatile organic compounds (VOCs), nitrogen oxides (NOx) and sulfur oxides (SOx).
Physical risks	Risks arising from changes in the environmental assets that generate the ecosystem services on which a company depends.
Materiality	The material issues that a company addresses as a priority.
Water Resources	Use of water resources. Considerations include the consumption of surface water and the consumption of groundwater.
Terrestrial ecosystem use	Use of land. Considerations include the area of agriculture by type, the area of plantation forestry by type, and the area of open-pit mining by type.



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