Guidance on Climate-Related Financial Disclosures3.0

(TCFD Guidance3.0) Case Examples

January 2023

TCFD Consortium

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2. Examples of disclosure based on TCFD recommendations

(1) Governance

Exemplary TCFD disclosures on governance are shown in this chapter. Emphasis is placed on (1) including climate change on the board's agenda and (2) climate change being on the agenda of dedicated committees. (See TCFD Guidance 3.0, page 15)

① Including climate change on the board's agenda

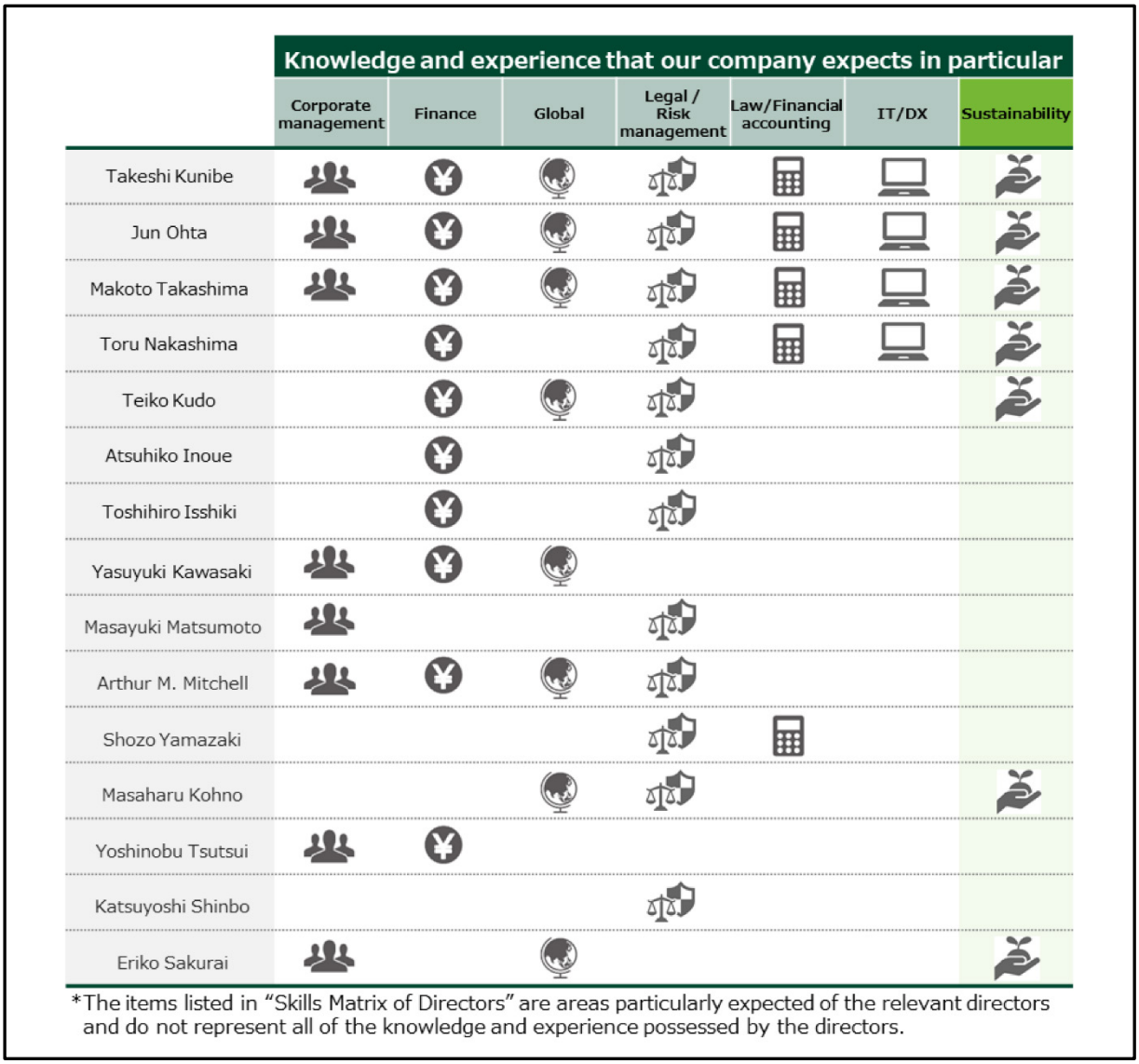
Sumitomo Mitsui Financial Group

Both the supervisory and executive bodies have established committees responsible for sustainability. The company also discloses the composition and attendance of each committee, as well as the skill matrix of board members.

Figure 2-1 Status of governance regarding responses to climate change

Committee			Reporting and discussion subjects related to climate change covered so far (examples)
Supervision	Board of Directors		• Formulation of Roadmap Addressing Climate Change • Commitment to achieving net zero emissions by 2050 • Formulation of reduction targets for portfolio GHG emissions • Formulation of transition plan • Progress of sustainability promotion measures • Establishment of a Sustainability Committee and formulation of regulations
	Internal committees	Nomination Committee	• Appointment of a Group CSuO
		Compensation Committee	• Realization of an executive compensation system that encourages further adoption of sustainability management
		Audit Committee	• Reporting on sustainability initiatives • Reporting on Sustainability Committee meetings held • Management of sustainability promotion measures and reporting on surveys about operational systems
		Risk Committee	• Current environment and risk awareness (regulatory trends related to climate change, etc.) • Climate change risk management status (strengthening portfolio management, scenario analysis results, engagement initiatives)
		Sustainability Committee	• Participation in NZBA • Necessity of engagement with customers for GHG reduction • Improvement of the internal system for GHG reduction
Execution	Management Committee		• Commitment to achieving net zero emissions by 2050 • Formulation of policies for reducing portfolio GHG emissions • Reporting on participation in TNFD • Formulation of a policy on engagement with stakeholders • Formulation of operational policies for other sustainability-related operations
	Risk Management Committee		• Implementation status of risk management measures on the Climate Change Response Roadmap • Engagement efforts related to scenario analysis • Portfolio management in the energy and power sectors, etc.
	Corporate Sustainability Committee		• Stakeholder trends • Promotion of new business related to sustainability

Source: Sumitomo Mitsui Financial Group, “TCFD Report 2022”, p.9



	Knowledge and experience that our company expects in particular						
	Corporate management	Finance	Global	Legal / Risk management	Law/Financial accounting	IT/DX	Sustainability
Takeshi Kunibe	●	●	●	●	●	●	●
Jun Ohta	●	●	●	●	●	●	●
Makoto Takashima	●	●	●	●	●	●	●
Toru Nakashima		●		●	●	●	●
Teiko Kudo		●	●	●			●
Atsuhiko Inoue		●		●			
Toshihiro Isshiki		●		●			
Yasuyuki Kawasaki	●	●	●				
Masayuki Matsumoto	●			●			
Arthur M. Mitchell	●	●	●	●			
Shozo Yamazaki				●	●		
Masaharu Kohno			●	●			●
Yoshinobu Tsutsui	●	●					
Katsuyoshi Shinbo				●			
Eriko Sakurai	●		●				●

*The items listed in "Skills Matrix of Directors" are areas particularly expected of the relevant directors and do not represent all of the knowledge and experience possessed by the directors.

Source: Sumitomo Mitsui Financial Group, "TCFD Report 2022", p.11

JFE Holdings

The company discloses that global warming initiatives are identified as its key CSR issues, discusses them in group-wide environmental committees, and supervises and directs group CSR meetings chaired by the president of the holding company.

The company has established a system for discussing climate change and other issues important to its own management at group management meetings and reports them to the board of directors. It also provides examples of issues discussed and decided upon by the board.

Governance

The JFE Group's Standards of Conduct states that we will actively work to exist harmoniously with the global environment, as well as to raise living standards and advance societies. We acknowledge that activities to protect the global environment, such as reinforcement of environmental conservation and response to climate change issues, are absolutely essential to achieving a sustainable society.

In fiscal 2016, we designated "mitigating climate change" as our CSR materiality in order to pursue a steady plan–do–check–act (PDCA) cycle and appropriate management of our ongoing initiatives to reduce CO_2 emissions in iron and steelmaking processes and to develop and provide environmentally friendly products. In 2021, we added an economic perspective to materiality, prioritized issues based on importance and launched new initiatives to address these important management issues.

The JFE Group Environmental Committee, established under the JFE Group CSR Council and chaired by the President of JFE Holdings, supervises and directs these initiatives across the Group by setting targets, assessing progress, and holding discussions to improve the Group's overall performance.

The Group Management Strategy Committee also deliberates topics that are vital to our business, such as climate change issues, and reports to the Board of Directors. The Board of Directors provides supervision through discussions on environmental issues such as climate change based on these reports.

Examples of climate change-related issues reported to, deliberated, and decided at Board of Directors' meetings

- Declaration of endorsement of the final TCFD recommendation report
- Information disclosure following the TCFD recommendations (scenario analysis, etc.)
- Formulation of the JFE Group Environmental Vision for 2050 in the Seventh Medium-term Business Plan
- Review reduction targets for CO_2 emissions by the end of fiscal 2030

Source: JFE Holdings, "JFE GROUP REPORT 2022", p.58

Novartis

The competencies and roles of the chairperson of the board, the CEO, each committee and the chief sustainability officer (CSO) in charge of climate change issues are specified.

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Board Chair	The Board of Directors is led by the Chairman of the Board and is responsible for setting the strategic direction of the Novartis Group. The Board met 10 times in 2020 with each meeting lasting approximately 5 hours. Environmental sustainability including climate is considered in the 5 company priorities which are set by the Board. In 2017, the Board requested that the company revisit its environmental strategy to see if more ambition was possible. In 2018, the Board reviewed and endorsed our new environmental sustainability strategy, which set ambitious new water sustainability targets, and goals for our business. Our Scope 3 emissions target was updated in 2020. Our climate targets, as per the Board of Directors decision in 2020, now specifically include to become carbon neutral in own operations by 2025. In addition by 2030, we aim to be carbon neutral across our entire value chain, including Scope 1, 2 and 3 emissions. Climate issues were identified as emerging risks and reported to the Board in 2020. Climate is now included as a strategic risk as part of an overall Environment, Social and Governance risk portfolio.
Chief Executive Officer (CEO)	The CEO leads the Executive Committee of Novartis (ECN), thus has the ultimate responsibility to approve the environmental sustainability strategy, climate and water targets and goals. The CEO can take action to accelerate implementation to respond to external expectations or business needs. The ECN meets each month. It approves annual budgets and sets business priorities, oversees and approves major capital expenditures, acquisitions and divestitures, and it tracks progress against goals and targets for addressing environmental sustainability which includes climate. Performance is reported annually in our Novartis in Society Report. The Novartis Trust & Reputation Committee (TRC) met six times in 2020. Chaired by our CEO, this sub-committee of the Executive Committee of Novartis (ECN) oversees progress and aims to accelerate decision-making in key ESG areas. Topics discussed in 2020 included potential gaps in our ESG performance, new ESG commitments, the environmental sustainability strategy, and diversity and inclusion. The CEO's involvement enables the Novartis climate strategy to be balanced with other business priorities and ensures that sufficient resources are in place to execute plans in support of the strategy. The CEO can take action to accelerate our responds to external expectations or business needs. An example of a specific climate-related decision made by the CEO was to move forward with a Pan-European Virtual Power Purchase Agreement to eliminate Novartis Scope 2 emissions from procured electricity in Europe, and update our targets in 2020 to commit to carbon neutrality across our entire value chain by 2030.
Board-level committee	The Board delegates certain duties and responsibilities to its five committees: The Audit and Compliance committee oversees internal control and compliance processes and procedures. The Compensation Committee, designs, reviews and recommends compensation policies and programs. The Governance, Nomination and Corporate Responsibilities Committee (GNCRC) oversees the company's strategy and governance on corporate responsibility. The Science & Technology Committee advice on scientific, technological and R&D matters. The Risk Committee oversees the company's risks across a wide range of possible topics. These committees are responsible for identifying and investigating issues of strategic importance and ensuring that they are appropriately managed. Climate related issues are balanced in these committees with other business priorities as part of the company's 5 priorities. Climate risks are reviewed by the Audit and Compliance Committee and the Risk Committee as part of the Enterprise Risk Management System, and are reviewed by the GNCRC as part of the environmental sustainability portfolio. The Audit and Compliance Committee met 8 times in 2020, the Risk Committee met 4 times in 2020 and the Governance, Nomination and Corporate Responsibilities Committee met 4 times in 2020.
Chief Sustainability Officer (CSO)	In 2020, Novartis created the position of CSO, who reports to a member of the Executive Committee of Novartis (ECN), to lead the strategy and execution of environmental sustainability across the company. Four strategic objectives were identified and are led by the CSO: 1) To be a leader in environmental sustainability 2) Sustainable products delivered to our patients 3) A mind-set of sustainability embedded in the way we operate 4) A strong voice influencing the sustainability agenda. The CSO also leads the existing governance processes at the Environmental Sustainability Strategy Implementation (ESSI) Steering Committee and presents relevant subject matter to the CEO chaired Trust and Reputation Committee (TRC). In 2020, the CSO made decisions to revise Scope 3 methodology for greater accuracy and to expand our natural climate solutions portfolio focused specifically on high quality carbon removals with a focus on co-benefits of health, biodiversity and climate resilience.

Source: CDP, "Novartis - Climate Change 2021", p.3

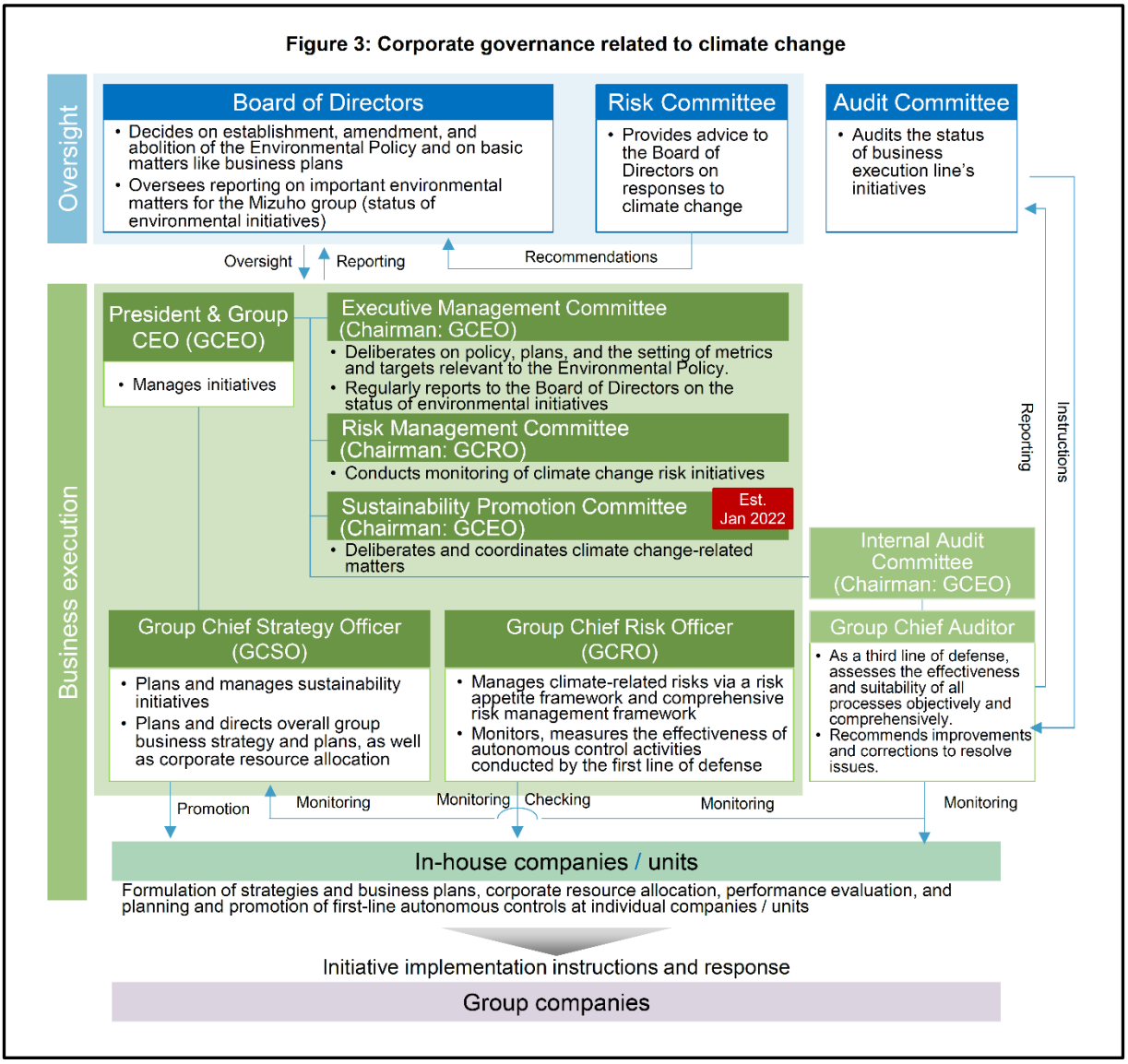
② Statement that climate change is on the agenda of the dedicated committees

Mizuho Financial Group

The roles of both the supervisory and executive bodies with respect to climate change are clearly stated.

The company also discloses the status of discussions in climate change supervision.

Figure 3: Corporate governance related to climate change



Source: Mizuho Financial Group, "Mizuho Financial Group TCFD Report 2022", p.14

BHP Group

The governance structure for climate change response and the role of each committee are explained. The remuneration policy linked to the company's emissions metrics and outcomes are also shown.

Sustainability Committee

The Sustainability Committee assists the Board in overseeing the Group's health, safety, environment and community (HSEC) performance and governance responsibilities, and the adequacy of the Group's HSEC framework, including climate change. Committee members have extensive experience with complex HSEC risks and frameworks, and the broader stakeholder considerations relating to climate change. The Sustainability Committee spends a significant amount of time considering systemic climate change matters relating to the resilience of, and opportunities for, BHP's portfolio.

Following the commitments approved by the Board and announced in July 2019, the Sustainability Committee reviewed a suite of proposed measures to implement those commitments, including steps to reduce our operational emissions and address Scope 3 emissions across the value chain; the deployment of the US$400 million Climate Investment Program; and how the link between executive remuneration and delivery of our climate strategy could best be achieved along with other HSEC objectives.

The Sustainability Committee considered the work undertaken across our Functions and Asset teams, which reflected a 'whole of company' response, commensurate with the scale and scope of the climate challenge. The actions reviewed were designed to be complementary, mutually reinforcing, commercially sound, achievable and ambitious.

Risk and Audit Committee

The Risk and Audit Committee (RAC) assists the Board with the oversight of risk management, although the Board retains overall accountability for BHP's risk profile. In addition, the Board requires the CEO to implement a system of controls for identifying and managing risk. The Directors, through the RAC, review the systems that have been established, regularly review the effectiveness of those systems and monitor to ensure that necessary actions have been taken to remedy any significant failings or weaknesses identified from that review. The RAC regularly reports to the Board to enable the Board to review our Risk Framework at least annually, to confirm that the Risk Framework continues to be sound and that BHP is operating with regard to the risk appetite set by the Board.

Further information is set out in section 3 Risk management of this Report and section 1.5.4 of the BHP Annual Report 2020, available on-line at bhp.com.

Remuneration Committee

The Remuneration Committee supports the Board in relation to the determination of remuneration policy and its application for senior executives, performance evaluation, the adoption of incentive plans, and various governance responsibilities related to remuneration.

The Remuneration Committee announced in the BHP Annual Report 2019 that the Cash and Deferred Plan (CDP) incentive scorecard applicable to the CEO and other senior executives will include a cash award, plus two equal tranches of deferred shares, vesting in two and five years. The CDP provides participants with variable remuneration linked to actual performance over the short, medium and long term.

Remuneration policy and outcomes

The purpose of BHP's remuneration arrangements is to drive the delivery of strategy, attract and motivate talented executives, and ensure long-term alignment of senior executives with our shareholders' interests.

The Board approved the recommendation from the Remuneration Committee, working in conjunction with the Sustainability Committee, that from 1 July 2020, the 25 per cent HSEC component of the CDP will include increased weighting, specificity and transparency on climate-related metrics. For FY2020, the 25 per cent HSEC component of the CDP scorecard included:

- Fatalities and other HSEC incidents
- HPIF (High Potential Injury Frequency), TRIF (total recordable injury frequency) and OIF (Occupational Illness Frequency)
- HSEC risk management (including climate change)
- HSEC initiatives linked to our five-year (FY2017-FY2022) public targets (including climate change)

For FY2021, the climate change weighting within the CDP scorecard that applies to the CEO, and members of the ELT, will be 10 per cent (i.e. 40 per cent of the 25 per cent HSEC component weighting), which is significantly higher than in previous years. This change delivers on BHP's commitment to clarify and strengthen the links between executive remuneration and climate change, as well as providing greater visibility and transparency to climate change measures and outcomes. The 10 per cent climate change component will include these key measures:

- Reductions in Scope 1 and Scope 2 operational GHG emissions
- Short and medium-term actions to reduce operational GHG emissions on the pathway to net-zero emissions
- Short and medium-term actions to address value chain (Scope 3) GHG emissions

The aligned cascade of measures in the CDP scorecard, from the CEO down through all levels of the organisation, has long been an important feature of BHP's variable pay plans. This change to the HSEC component of the CDP scorecard, with an increase in the weighting, specificity and transparency of climate-related metrics, will directly determine the remuneration outcomes of the CEO and the members of the ELT, and will also be cascaded to other senior leaders and the broader workforce, specifically to individual employees who have direct accountability for the achievement of HSEC outcomes as part of their roles.

Source: BHP Group, "BHP Climate Change report 2020", p.10

Sumitomo Forestry

In addition to the composition of the Sustainability Committee and reporting to the board of directors, the company discloses the introduction of an executive compensation system linked to the achievement rate of sustainability indicators.

Governance

The Sumitomo Forestry Group will promote the response to issue of climate change centered on the Sustainability Committee, similarly as other ESG challenges. The Sustainability Committee, chaired by the President and composed of members made up of executive officers, directors and each divisional manager, formulates and promotes initiatives for medium to long-term ESG challenges related to the sustainability of the Sumitomo Forestry Group in addition to analyzing risks and opportunities, conducting progress management of the Mid-Term Sustainability Targets, which incorporate business strategies toward achieving the SDGs, including monitoring of implementation and effectiveness of the Our Values and Code of Conduct. It also reports all proceedings at committee meetings to the Board of Directors.

In February 2022, we revised some contents of the Executive Remuneration System in order to further integrate business with ESG. We have included remuneration linked to rate of achievement of sustainability indicators during Executive Remuneration. In the event that Sumitomo Forestry fails to meet its long-term greenhouse gases emissions reduction target based on Science Based Targets (SBT), amount of remuneration paid will be reduced from the regular stock remuneration amount in accordance with the degree of target performance.

Source: Sumitomo Forestry, "Sumitomo Forestry Group Sustainability Report 2022", p.144

Sumitomo Chemical

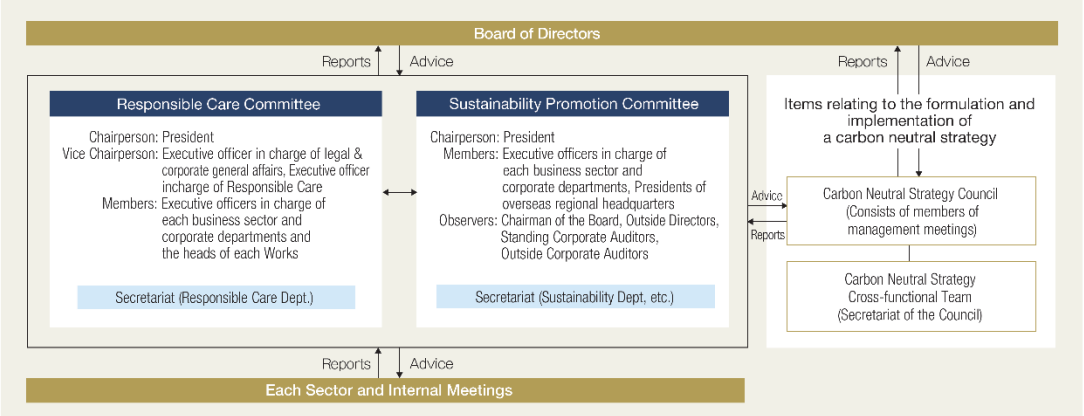
The company has established cross-functional committees and councils directly under the board to discuss sustainability and carbon-neutral strategies.

Governance

Sumitomo Chemical has established meetings and committees to deliberate important matters related to the management of the Group from a broad and diverse perspective in order to enhance its business execution and supervisory functions. Through these meetings and committees, the Company reports to the Board of Directors at least once a quarter on issues related to the promotion of sustainability, including climate change.

Management Meetings	Deliberation of important matters such as management strategies and capital investments, including proposals and reports to be submitted to the Board of Directors
Sustainability Promotion Committee	Deliberations on important matters related to sustainability promotion
Responsible Care Committee	Formulation of annual policies, mid-term plans, and specific measures to address climate change, as well as analysis and evaluation of performance
Carbon Neutral Strategy Council	Promotion of specific measures set forth in the grand design for achieving carbon neutrality in 2050

Structures for Responding to Climate Change



Source: Sumitomo Chemical, "Sumitomo Chemical Annual Report 2022", p.41

(2) Strategy

Exemplary TCFD disclosures on strategy are shown in this chapter. In addition to the three recommended disclosures by TCFD, examples of disclosures on transition plans and innovation as items to watch in recent years are shown in this chapter. (See TCFD Guidance 3.0, page 17)

① Strategy a (description of short-, medium- and long-term climate-related risks and opportunities)

INPEX

The time horizons are clearly defined as short-term (up to one year), medium-term (over one year and up to five years) and long-term (over five years), and climate change risks are assessed and disclosed along with measures.

FY2022 Status of Climate-related Risks: Assessment Coverage, Expected Timing and Action Plans

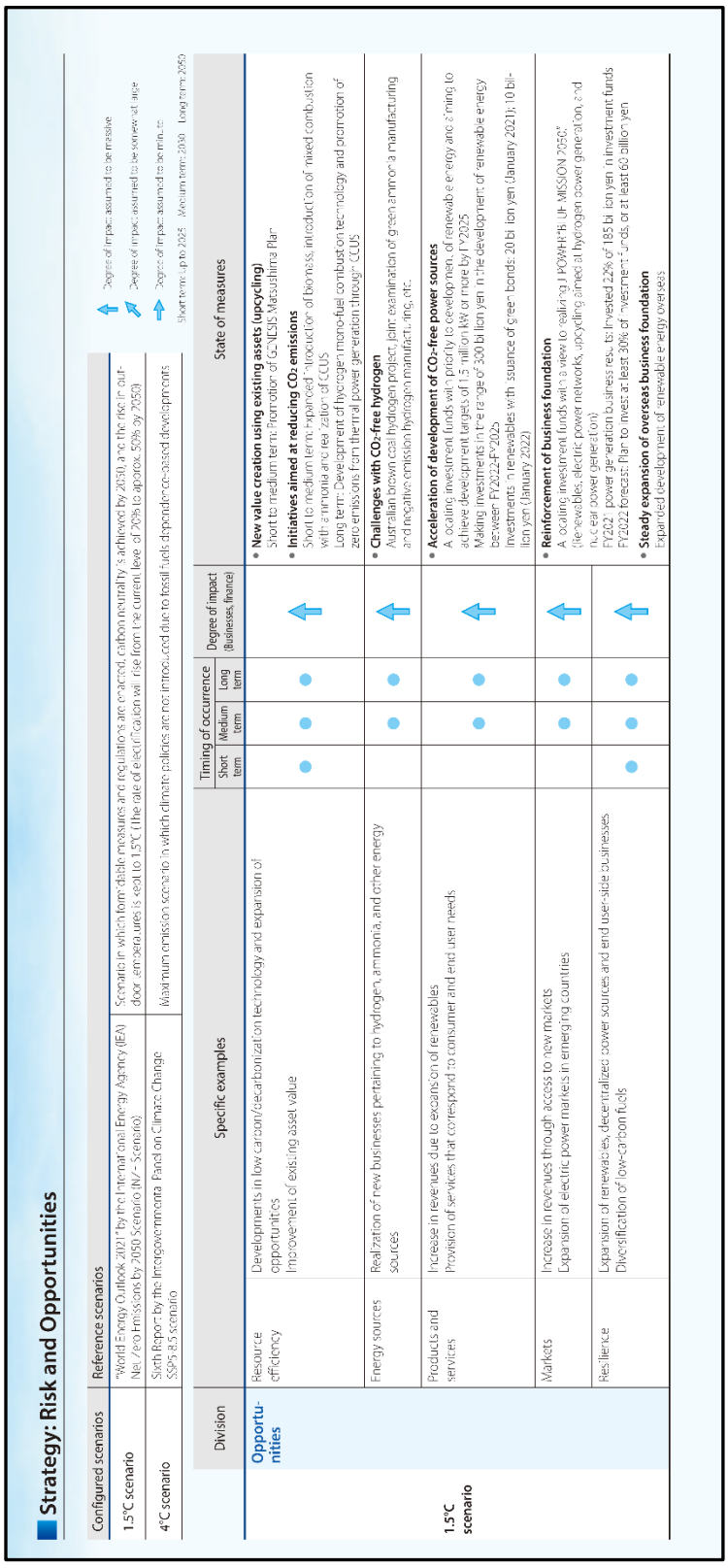
Risk category		Risk description	Expected risk timing	Action plan
Transition risks	**Policies and regulations** (Scope 1 emissions)	Risk of increased costs due to the introduction and strengthening of a carbon price system	Short-term ～ Medium-term	● Monitor carbon pricing policy trends ● Increase internal carbon price from US$40/tCO2-e to US$65/tCO2-e and establish this as a base case to assess the economic impact
	Technologies and markets (Reduced demand and lower prices for oil and gas)	Risk of reduced demand and lower prices for oil and gas due to a decline in the cost of renewable energy, electric vehicles and/or storage batteries, or market preference for low-carbon energy	Medium-term ～ Long-term	● Scenario-based monitoring of market and technology trends ● Financial assessment of portfolio based on oil and carbon prices used in the IEA WEO Sustainable Development Scenario (SDS)
	Reputation (Scope 1 emissions)	Stakeholder concerns about Scope 1 emissions	Short-term	● Net zero by 2050, and at least 30% reduction in net carbon intensity by 2030 ● Promote technological development and commercialization with the goal of achieving an annual CO2 injection amount of 2.5 million tons or more around 2030. ● Maintain methane emissions intensity (methane emissions/natural gas production) at its current low level (about 0.1%) ● Zero routine flaring by 2030
	Reputation (Scope 3 emissions)	Risk that attention attracted by Scope 3 emissions will cause the image of oil and gas companies to deteriorate	Short-term ～ Medium-term	● Engage with stakeholders to reduce Scope 3 emissions ● Promote development and greater use of natural gas ● Sell carbon-neutral LNG
	Financing	Potential adverse impact on financing activities if investors and financial institutions regard disclosure as inadequate	Short-term ～ Medium-term	● Disclose information in line with TCFD Recommendations
Physical risks	**Acute risks**	Risk of impairment to operating facilities from extreme weather events	Short-term ～ Medium-term	● Regular assessment of physical risks
	Chronic risks	Risk of impairment to operating facilities from long-term increase in average temperatures, changing precipitation patterns, and rising sea levels	Medium-term ～ Long-term	

Short-term up to one years　Medium-term one to five years　Long-term longer than five years

Source: INPEX, "SUSTAINABILITY REPORT 2022", p.58

J-POWER (Electric Power Development)

The company discloses the timeframes (short-, medium-, and long-term) and impact assessments of risks and opportunities, as well as responses, including the size of investments. The time horizons are clearly defined.



Strategy: Risk and Opportunities

Configured scenarios	Reference scenarios	
1.5°C scenario	"World Energy Outlook 2021" by the International Energy Agency (IEA) Net Zero Emissions by 2050 Scenario (NZ Scenario)	Scenario in which formidable measures are enacted, carbon neutrality is achieved by 2050, and the rise in cumulative emissions is held to 1.5°C (The rate of electrification will rise from the current level of 20% to approx. 50% by 2050)
4°C scenario	Sixth Report by the Intergovernmental Panel on Climate Change SSP5-8.5 scenario	Maximum emission scenario in which climate policies are not introduced due to fossil fuel dependence-based developments

Degree of impact assumed to be massive
Degree of impact assumed to be somewhat large
Degree of impact assumed to be minimal
Short term: up to 2025 Medium term: 2030 Long term: 2050

	Division	Specific examples	Timing of occurrence: Short term	Timing of occurrence: Medium term	Timing of occurrence: Long term	Degree of impact (Businesses, finance)	State of measures
1.5°C scenario	Opportunities	Resource efficiency: Developments in low carbon/decarbonization technology and expansion of opportunities Improvement of existing asset value	●	●	●		• **New value creation using existing assets (upcycling)** Short to medium term: Promotion of GENESIS Matsushima Plan • **Initiatives aimed at reducing CO_2 emissions** Short to medium term: Expanded introduction of biomass, introduction of mixed combustion with ammonia and realization of CCUS Long term: Development of hydrogen mono-fuel combustion technology and promotion of zero emissions from thermal power generation through CCUS
		Energy sources: Realization of new businesses pertaining to hydrogen, ammonia, and other energy sources		●	●		• **Challenges with CO_2-free hydrogen** Australian brown coal hydrogen project; joint examination of green ammonia manufacturing and negative emission hydrogen manufacturing, etc.
		Products and services: Increase in revenues due to expansion of renewables Provision of services that correspond to consumer and end user needs		●	●		• **Acceleration of development of CO_2-free power sources** Accelerating investment funds with priority to development of renewable energy aiming to achieve development targets of 1.5 million kW or more by FY2025 Making investments in the range of 300 billion yen in the development of renewable energy between FY2022–FY2025 Investments in renewables with issuance of green bonds: 20 billion yen (January 2021); 10 billion yen (January 2022)
		Markets: Increase in revenues through access to new markets Expansion of electric power markets in emerging countries		●	●		• **Reinforcement of business foundation** Accelerating investment funds with a view to "realizing J-POWER GHG-MISSION 2050" (renewables, electric power networks, upcycling aimed at hydrogen power generation, and nuclear power generation) FY2021: power generation business results: Invested 2.2% of 185 billion yen in investment funds FY2022 forecast: Plan to invest at least 30% of investment funds, or at least 60 billion yen
		Resilience: Expansion of renewables, decentralized power sources and end user-side businesses Diversification of low-carbon fuels		●	●		• **Steady expansion of overseas business foundation** Expanded development of renewable energy overseas

Source: Electric Power Development, "J-POWER Group Integrated Report 2022," p.44

British Land

Short-term (< 12 months), medium-term (1 to 5 years), and long-term (5 to 10 years and beyond 2050) periods are specifically indicated to identify risks and opportunities. In addition, the financial impact is calculated for these periods and countermeasures are described.

Defining a 'material' risk or opportunity:
British Land defines a 'material' risk or opportunity in line with the likelihood-impact thresholds of our risk management policy. Risks are evaluated by the combination of their Potential Impact (financial and reputational) and their Likelihood.

Financial Impact thresholds (£)		*Likelihood thresholds (chance of occurrence in a given year)*		*Reputational Impact thresholds*	
Low (non-significant)	Less than £10m	Low	0-33%	Low	Limited reputational impact
Medium	£10m to £100m	Medium	33-66%	Medium	Significant temporary or limited sustained impact
High	Greater than £100m	High	Greater than 66%	High	Significant sustained impact

Risk quantification to determine materiality:
To determine materiality, Willis Towers Watson supported British Land in undertaking quantitative physical and transition scenario analyses. This process reviewed the potential impact of over 20 physical and transition-related issues, and the assessment included input from key business areas across British Land. The most material issues identified by the analyses are shown below, with these issues detailed in the next section:

	Risks	*Opportunities*
Material issues	Flood risk vulnerability	Customer demand for sustainable space results in a 'green premium'
	Increasing price of carbon offsets	
	Cost of complying with minimum EPC standards	
Continue to monitor	Customer demand for sustainable space results in a 'brown discount' to rents at less sustainable assets.	Premium pricing for sustainable buildings (yield compression)
	Tenant business model impacted by transition	Lower cost of capital
	Increased cost of raw materials	
	Increased cost of capital	

The following section considers the impact of climate related risks and opportunities – identified through scenario analyses – on our business, strategy and financial planning over the short, medium and long term. It also considers the resilience of our strategy to these risks and opportunities, and seeks to quantify impacts where possible.

Climate related risks

Short term risks (< 12 months)

Risk/type and impact	*Primary risk driver*	*Likelihood*	*Potential annual financial impact*	*Explanation*
Risk #1 Flood risk vulnerability of assets (current climate)	Losses from assets located in high flood risk zones, primarily the cost to repair assets and the cost of business interruption, reflected in increased insurance costs.	Low to Medium	Mean loss: Less than £1m Losses in a representative bad year: £15m-20m	We have completed a climate risk modelling analysis for current and future climate conditions for the current portfolio using the assets' total insured value. This process simulated many thousands of events. Losses are modelled to arrive at a loss perspective for low likelihood events for a 'bad' year. The representative 'bad' year refers to a 1/100 annual likelihood across the simulations and the modelled losses also consider current flood defences. These modelled losses were pro-rated by BL ownership share. Under current market conditions, these losses are insured against. As historical context, in 2007 two flood events in our portfolio resulted in (insured) losses of circa £25m. At one of these sites (which accounted for the majority of the loss), we subsequently installed flood defences. In 2011, we began commissioning periodic flood risk assessments across the portfolio and issued flood management plans to sites at high risk. Since 2007, our (insured) actual annual mean loss is below this modelled value of £1m.

Source: British Land, "Annual Report and Accounts 2022," p.52

Long term risks (5-10 years)

Risk/type and impact	*Primary risk driver*	*Likelihood*	*Potential annual financial impact*	*Explanation*
Risk #2 Increasing price of carbon offsets	Net zero commitments by global corporates lead to increased demand for carbon offset credits, resulting in higher and/or volatile credit prices.	High	£0.75m for every 100% increase in the price of carbon	British Land has committed to offsetting the embodied carbon of its new developments and major refurbishments that complete between 2020-2030. This volume is estimated to be at least 300,000 tCO_2e from developments. This estimated financial impact of £0.75m reflects the annualised additional cost of offset credits if the credit price rises by 100% from our current anticipated price (£20 per tonne). To mitigate this risk we are currently exploring options to pre-purchase carbon credits to offset embodied carbon related to our pipeline of developments to 2030. In addition our internal carbon levy would cover a carbon price increase of up to £60 per tonne.
Risk #3 Cost of complying with minimum EPC standards (MEES compliance)	Cost of upgrading assets to comply with the UK's proposed regulatory (MEES) requirement that properties hold a minimum 'B' rating by 2030.	High	£12.5m	Quantified by net zero audits undertaken at major office and retail assets and EPC scenario modelling undertaken across managed assets, these assessments suggest that the retrofit cost for standing assets will be in the region of £100m over the coming eight years, annualised at £12.5m. This value excludes assets due to be redeveloped through our near and medium-term development pipeline. A significant proportion of this investment will be recovered through the service charge as we work with our customers to achieve our shared climate goals. We would also expect to derive energy efficiency benefits, and therefore cost savings, as a result of these actions.

Long term risks (post-2050)

Risk/type and impact	*Primary risk driver*	*Likelihood*	*Potential annual financial impact*	*Explanation*
Risk #4 Flood risk vulnerability (future climates)	Losses from assets located in high flood risk zones, primarily the cost to repair assets and the cost of business interruption, reflected in increased insurance costs.	Low to Medium	Mean loss: Less than £1.5m Losses in a representative bad year: £20m to £30m	Willis Towers Watson undertook a climate risk modelling analysis (simulating many thousands of events) for current and future climate conditions for the current portfolio using the assets' total insured value. Their modelling approach for the flood risk in future climates is the same as described in Risk #1 for the current climate, with losses pro-rated by BL ownership share. For the 'representative bad year', lower banding reflects losses in the two degree (RCP2.6) scenario, and the upper banding reflects losses in the four degree (RCP8.5) scenario. These modelled losses were pro-rated by BL ownership share. Under current market conditions these losses are insured against, and would not be suffered by the Group under normal circumstances, though we recognize that in the long term specific assets could face cost increases or difficulty obtaining insurance.

Climate risk and opportunity category	Financial impact category
Physical risk – acute	Income Statement
Transition risk – regulatory	Balance Sheet
Transition risk or opportunity – market	

Source: British Land, "Annual Report and Accounts 2022," p.53

ENEOS Holdings

Financial impact of climate change risks and opportunities is described not only in terms of amounts, but also in terms of time horizons and assumptions for calculations.

Risks, Opportunities, and Our Responses

In fiscal 2017, the Group introduced an enterprise risk management (ERM) structure based on the COSO[1] ERM framework (see page 76). Using this process, we identified risks and opportunities related to climate change as outlined in the table below.

[1] An internal control framework released by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) and adopted by countries around the world.

Risks and Opportunities Identified and Timeline

Category	Examples	Timeline	Financial impact in the year 2040
Transition risks	Higher costs for achieving carbon neutrality	Medium to long term	¥85 billion annually (estimated) Cost of carbon credits to offset the entire 16 million tons of emissions that we aim to reduce by 2040
	Declining demand for petroleum due to advancements in EV technologies Declining demand for petroleum due to growing environmental awareness	Medium to long term Short term (demand already declining)	¥40 billion annually (estimated) Reduction in operating income assuming a 40% decline in domestic petroleum demand in 2040 compared to 2019
	Stranding of upstream oil assets	Medium to long term	Limited risk
Physical risks	Increasing frequency and severity of wind and flood damage caused by extreme weather events (major typhoons)	Short term (extreme weather events already increasing)	¥2 billion per major typhoon (actual) Actual repair costs for each major typhoon
	Rising sea levels caused by global warming	Medium to long term	¥1 billion annually (actual) Actual cost for countermeasures in FY2018 and FY2019
Opportunities	Increasing demand for raw materials for recycling	Medium to long term	¥40 billion annually (actual) FY2021 operating income for smelting and recycling businesses
	Increasing demand for renewable energy, hydrogen, and EVs	Medium to long term	¥100 billion annually (estimated) Estimate based on market size, market share, and operating income margin
	Broader initiatives to reduce environmental impacts in the mobility industry Increasing demand for functional and thin-film materials needed for electrification	Medium to long term	¥10 billion annually (forecast) FY2022 operating income forecast for elastomers business ¥50 billion annually (actual) FY2021 operating income for functional and thin-film materials business

Source: ENEOS Holdings, "ENEOS REPORT Integrated Report 2022," p.55

BNP Paribas

Risks and opportunities associated with the energy transition are disclosed according to the businesses affected such as asset management and retail banking, including the timeframe, size of impact, as well as the measures undertaken. The timeframe is defined as short-term (within 2 years), medium term (3 to 10 years) and long-term (more than 10 years).

Table 1 | Some examples of possible impacts of transition risks

RISQUE	TYPE OF RISK	DESCRIPTION	BUSINESS AFFECTED	TIME FRAME*	POTENTIAL SIZE OF IMPACT*
TRANSITION RISK	STRATEGIC AND COMMERCIAL RISK	Strategic decisions related to CSR considerations that BNP Paribas may take, such as the total or partial withdrawal of financing for certain specific sectors, activities or counterparties, would be liable to result in decreased revenues.	Financing activities	ST/MT	++/+++
		Risk related to the development or non-development of new products aimed at reducing the carbon footprint of the industries in which banks still operate. For example: risk of losing market share for the Group, and particularly its subsidiaries Arval and Leasing Solutions, if they fail to sufficiently adapt to customer demand for more environmentally-friendly products and services (electric cars, leasing of low-carbon equipment, etc.).	All activities	MT	++
	CREDIT, COUNTER-PARTY AND SETTLEMENT RISK	Credit risk associated with the reduction in the solvency of customers generating high GHG emissions, and therefore liable to be heavily affected by measures such as a carbon tax.	Financing activities	MT	+++
		Lack of strategic forecasting and transformation related to climate change by customers that may struggle to find financial partners and eventually encounter profitability and solvency problems.	Financing activities	MT	++/+++
		Problems in dealing with the transition to a low carbon economy experienced by certain sectors (such as transport, oil, gas, automotive, aviation or agriculture).	Financing activities	ST/MT	+/++
		Inability to rent certain properties due to poor energy performance, which could lead to higher cost of risk in portfolios.	Financing activities	ST/MT	++/+++
	REPUTATIONAL RISK	Reputational issues are increasingly liable to arise from climate change issues and from the fact that the bank can be perceived as liable, causing significant damage (loss of customers, difficulty in promoting commercial development).	Group	ST/MT	++/+++
		In asset management activities, external accusations (customers, markets, institutions, etc.) of suspected greenwashing in "ESG" funds marketed by the Group could damage the reputation and ultimately have impacts on these activities and the associated revenues.	Asset Management	ST/MT	+/++
	LIQUIDITY RISK	Behavioural changes could lead to unexpected outflows.	Group	ST/MT	+
		The eligibility criteria used to qualify assets eligible for ECB refinancing operations may change, generating new constraints that could hinder the Group's current refinancing strategy.	Group	ST/MT	+/++
	MARKET RISK	Risk related to the potential impact of carbon prices and/or a carbon tax on commodity prices.	Market activities	ST/MT	+
		Decrease in the value of funds overexposed to business sectors or companies significantly affected by the transition to a low-carbon economy.	Asset Management	MT	++
	OPERATIONAL RISK	Rise in carbon prices (tax or quotas) applied to BNP Paribas emissions in its operational scope *	Internal	MT	+
		Tougher regulations on climate reporting, made difficult due to lack of robust and consistent data from corporate customers. *	Internal	ST	+
		Tougher environmental standards (on the energy efficiency of Group buildings, on its company car fleet, etc.) liable to call for additional investments *	Internal	MT	+

* indicative qualitative information, estimated on the basis of expert appraisals

BNP PARIBAS

Source: BNP Paribas, "TCFD Report 2021", p.15

CLIMATE-RELATED PHYSICAL RISKS ALSO AFFECT GROUP ACTIVITIES

The way the physical impacts of climate change are liable to affect the Group's business is illustrated in Table 2.

Table 2 | Some examples of potential impacts of physical risks

RISK	TYPE OF RISK	DESCRIPTION	BUSINESS AFFECTED	TIME FRAME*	POTENTIAL SIZE OF IMPACT*
PHYSICAL RISK	STRATEGIC AND COMMERCIAL RISK	Risk of under-performance by funds overexposed to economic players particularly affected by the direct impacts of climate change, or by the drop in revenues generated by customers in sectors seriously affected by the physical impacts of climate change (e.g. agricultural sector hit by droughts and reduced access to fresh water).	Asset Management	MT/LT	++
	CREDIT, COUNTER-PARTY AND SETTLEMENT RISK	Credit risk due to the decreased solvency of customers whose operations and processes are disrupted by climate change.	Financing activities	MT	+/++
		Credit risk related to the situation of real estate assets. For example, disruptions in the water cycle and the increased frequency of storms can destabilise the real estate market, influence the value of assets and compromise the ability of individual borrowers to repay their debts.	Financing activities	MT/LT	+/++
	RISQUE DE MARCHÉ	Physical risk drivers of extreme severity and intensity could have an impact on market risks in the event of a sharp fall in prices or the revaluation of financial assets and commodities due to large-scale damage, reduced production capacity or demand.	Market activities	MT/LT	++
	RISQUE OPERATIONNEL	Chronic and acute physical risk drivers (particularly river and coastal flooding, droughts, heat waves, forest fires, storms and heavy precipitation) can have various adverse consequences for the Bank, including direct consequences on its physical and tangible assets (destruction of assets, unavailability, etc.).	Operations	MT/LT	+

* indicative qualitative information, estimated on the basis of expert appraisals

2.1.2. THE ENERGY TRANSITION ALSO PRESENTS OPPORTUNITIES FOR BNP PARIBAS

The fight against climate change requires massive investment by companies, institutions and the public sector in the field of technology, infrastructure and organisational transformation. These new needs may represent opportunities for BNP Paribas. The main such opportunities are identified in Table 3. As is true for the risks presented above, two qualitative indications were added on the basis of expert views:

- An estimation of the time frame in which each risk or opportunity is liable to materialise: short term (ST), i.e. within two years; medium term (MT), i.e. between three and ten years; or long term (LT), i.e. after ten years.
- An estimation of the potential significance of each risk: between "+" (moderate) and "+++" (significant).

Table 3 | Some of the main climate-related opportunities for BNP Paribas.

MAIN BUSINESS AFFECTED	DESCRIPTION	TIME FRAME	BUSINESSES AFFECTED	POTENTIAL SIZE OF IMPACT
CORPORATE AND INSTITUTIONAL BANKING (CIB)	Robust growth in Green Bonds, Green Loans and Sustainability-Linked Loans correlated with climate-related criteria	ST	Financing activities	+++
	Revenues generated by renewable energy financing, decarbonisation of activities and investments in low-carbon projects	ST	Financing activities	+++
	Financing and investments in start-ups specialising in the energy transition	ST	Financing activities	+
RETAIL BANKING AND SPECIALISED BUSINESSES (CPBS)	Loan offers (home loans and consumer loans) dedicated to the energy renovation of individual households (green mortgage loans, special consumer loans in particular)	ST	Retail Banking, BNP Paribas Personal Finance	++
	Development of the BNP Paribas Leasing Solutions range of more energy efficient and/or less GHG-emitting leasing products	ST/MT	BNP Paribas Leasing Solutions	++
	Arval's expanded range of electric cars to meet growing demand	ST/MT	Arval	+
INVESTMENT AND PROTECTION SERVICES (IPS)	Development of sustainable investment solutions supporting the energy transition	ST/MT	Asset Management	++
	Development of low-carbon products: low-carbon real estate development with BNP Paribas Real Estate, Climate indices and green funds with BNP Paribas Asset Management, green investments via retail funds managed by BNP Paribas Cardif, etc.	ST	Group	+ / ++
OPERATIONAL SCOPE	Energy renovation of buildings (offices, branches, etc.) and IT optimization reducing the Group's energy expenditure	ST	Internal	+

Source: BNP Paribas, "TCFD Report 2021", p.16

② Strategy b) (describing the impact of risks and opportunities)

Sumitomo Forestry

Climate-related risks are identified for each business, strategies are formulated, and initiatives are undertaken taking into account possible future changes in regulations and rules.

Housing and Construction Business

In the Housing and Construction Business, transition risks include increased lumber procurement costs because of tighter regulations, including forest protection policies and felling regulations in various countries. With respect to physical risks, greater costs in home building are expected; these are incurred by decreased efficiency with rising temperatures, more severe natural disasters and extreme weather events, and the construction schedule delays. On the other hand, demand for environmentally conscious housing such as ZEH housing is expected to increase because of tougher laws and regulations for decarbonization and growing market demand for decarbonized products.

Risk Assessment in the Housing and Construction Business

Risk category		Impact on operations	Risk level	Measures Initiated
Transition Risks	Carbon emission targets, policies in each country	• Increased timber procurement costs due to policies related to forest carbon sinks.	Large	○
	Forest conservation policies	• Increased timber procurement costs due to logging taxes, logging fees and other.	Large	○
	Policies related to buildings	• Additional investments and renovation costs to comply with policies. • A continuation of the subsidy program will create a monetary incentive. Depending on the policy, this may impact market competitiveness and revenues.	Large	○
	Changes in customer evaluation	• If customer awareness of climate change increases, customer preference will move toward the use of certified timber, increasing procurement costs.	Large	○
	Energy conservation and other subsidy policies		Small to medium	
	Fossil fuel subsidy program		Small to medium	
	Changes in energy mix		Small to medium	
	Changes in investor evaluation		Small to medium	
Physical Risks	Intensification of abnormal weather	• In the event of a major natural disaster, increased construction costs due to schedule delays, equipment repairs or replacement, and other factors. • An increase in extremely hot days will lower outdoor work productivity. Increased costs due to construction delays and maintaining and enhancing worker health.	Large	○

Note) The examples listed were conducted in 2018, and the content is under review in 2022.

Source: Sumitomo Forestry, "Sumitomo Forestry Group Sustainability Report 2022", p.149-150

Climate Change Related Opportunities and Strategies

Expanding Housing Sales in Concert with Government ZEH Promotion

In the Global Warming Prevention Plan and The Sixth Basic Energy Plan approved by the Cabinet in October 2021, the Japanese government declared that "the government will raise energy conservation standards in stages and raise inducement standards and top-runner standards for Housing and Construction to ensure the level of energy conservation performance of ZEH and ZEB standards for new Housing and Construction to be built in fiscal 2030 and after", and "the government will ensure the level of energy conservation of ZEH and ZEB standards for the stock average of housing and buildings by 2050".

Received orders of ZEH
Target (%)*
(FY2024)

80%

* Include Nearly ZEH, Small ZEH Oriented and ZEH Oriented in Snow Area

Working in concert with this policy, Sumitomo Forestry is promoting ZEH housing sales with a ZEH order ratio goal set in the Mid-Term Sustainability Targets while also leveraging the appeal of Double Power Generation that distinguishes our ZEH homes by using both solar panel cells and fuel cell batteries for residential use. This gives us a competitive edge that is boosting our ZEH ratio. Sumitomo Forestry has also adopted 360° TRIPLE Insulation as a standard that enhances the thermal insulation performance of custom-built detached homes (excluding fireproof specifications). In addition to offering high-performance thermal insulation materials, the standard provides all-around insulation for buildings as a whole from structural materials to windows with high thermal performance. 360° TRIPLE Insulation creates a living space that stays cool in the summer, warm in the winter and increases energy-saving performance.

In the 2030 scenario analyses, the ZEH ratio required by the government is even higher in the scenario with a 4-degree Celsius rise while a ZEH with even higher energy efficiency becomes the standard in the scenario with a 2-degree Celsius rise. In both scenarios, we anticipate an increase in market competitiveness for Sumitomo Forestry homes due to our technical development capabilities.

Click here for related information

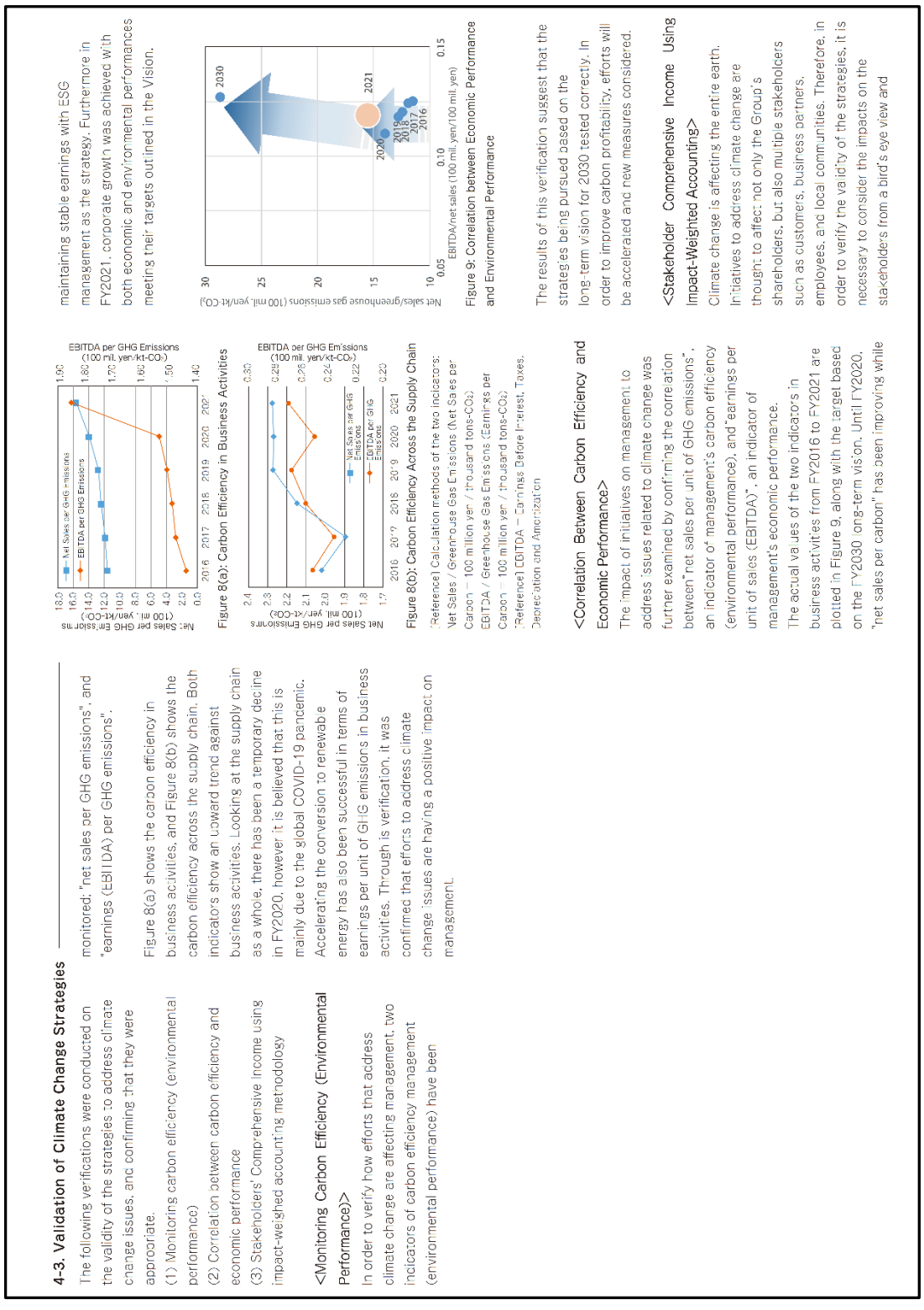
› Promotion of Net Zero Energy House (ZEH) Specifications

› Material issue 2 To realize carbon neutrality by leveraging forests and wood resources

Source: Sumitomo Forestry, "Sumitomo Forestry Group Sustainability Report 2022", p.154

Sekisui Chemical

As a novel metric of the impact of climate change on multiple stakeholders including not only shareholders but also customers and local communities, the company quantifies the impact as Stakeholder Comprehensive Income, including the contribution to reduction. By presenting this metric chronologically, the company quantifies the improvement in recent years.



4-3. Validation of Climate Change Strategies

The following verifications were conducted on the validity of the strategies to address climate change issues, and confirming that they were appropriate.

(1) Monitoring carbon efficiency (environmental performance)

(2) Correlation between carbon efficiency and economic performance

(3) Stakeholders' Comprehensive Income using impact-weighted accounting methodology

<Monitoring Carbon Efficiency (Environmental Performance)>

In order to verify how efforts that address climate change are affecting management, two indicators of carbon efficiency management (environmental performance) have been monitored; "net sales per GHG emissions", and "earnings (EBITDA) per GHG emissions".

Figure 8(a) shows the carbon efficiency in business activities, and Figure 8(b) shows the carbon efficiency across the supply chain. Both indicators show an upward trend against business activities. Looking at the supply chain as a whole, there has been a temporary decline in FY2020, however it is believed that this is mainly due to the global COVID-19 pandemic. Accelerating the conversion to renewable energy has also been successful in terms of earnings per unit of GHG emissions in business activities. Through is verification, it was confirmed that efforts to address climate change issues are having a positive impact on management.

Figure 8(a): Carbon Efficiency in Business Activities

Figure 8(b): Carbon Efficiency Across the Supply Chain

[Reference] Calculation methods of the two indicators:
Net Sales / Greenhouse Gas Emissions (Net Sales per Carbon – 100 million yen / thousand tons-CO_2)
EBITDA / Greenhouse Gas Emissions (Earnings per Carbon – 100 million yen / thousand tons-CO_2)
[Reference] EBITDA – Earnings Before Interest, Taxes, Depreciation and Amortization

<Correlation Between Carbon Efficiency and Economic Performance>

The impact of initiatives on management to address issues related to climate change was further examined by confirming the correlation between "net sales per unit of GHG emissions", an indicator of management's carbon efficiency (environmental performance), and "earnings per unit of sales (EBITDA)", an indicator of management's economic performance. The actual values of the two indicators in business activities from FY2016 to FY2021 are plotted in Figure 9, along with the target based on the FY2030 long-term vision. Until FY2020, "net sales per carbon" has been improving while maintaining stable earnings with ESG management as the strategy. Furthermore in FY2021, corporate growth was achieved with both economic and environmental performances meeting their targets outlined in the Vision.

Figure 9: Correlation between Economic Performance and Environmental Performance

The results of this verification suggest that the strategies being pursued based on the long-term vision for 2030 tested correctly. In order to improve carbon profitability, efforts will be accelerated and new measures considered.

<Stakeholder Comprehensive Income Using Impact-Weighted Accounting>

Climate change is affecting the entire earth. Initiatives to address climate change are thought to affect not only the Group's shareholders, but also multiple stakeholders such as customers, business partners, employees, and local communities. Therefore, in order to verify the validity of the strategies, it is necessary to consider the impacts on the stakeholders from a bird's eye view and

Source: Sekisui Chemical, "TCFD Report 2022", p.23-24

comprehensively, and the multi-stakeholder comprehensive income was calculated using impact-weighted accounting method.
Impact-weighted accounting refers to the concept of integrating accounting and impacts by converting the impacts of corporate activities on stakeholders as a whole into monetary values and adding or subtracting them from profits, thereby ascertaining the corporate value for stakeholders as a whole. In this validation, comprehensive earnings were calculated using the following calculation method. LIME2 concept was adopted when converting economic losses on environmental aspects into economic values.

[Calculation Method]
Stakeholder Comprehensive Income = (Profit for the period + Value of employment created to implement climate change initiatives + Economic values of contribution to the reduction of greenhouse gas emissions from products + Economic values of effects on environmental aspects other than climate change issues from products)-(Economic losses from greenhouse gas emissions from business activities + Economic losses from environmental aspects other than climate change issues from business activities)

Figure 10(a) shows how the ratio of stakeholder comprehensive income to net income has changed since the 2016 base year, using impact-weighted accounting.
Although there were changes in the surrounding environment, it was suggested that stakeholder comprehensive income with respect to net income has been steadily improving as results of corporate activities in response to it, and has nearly doubled from FY2016.

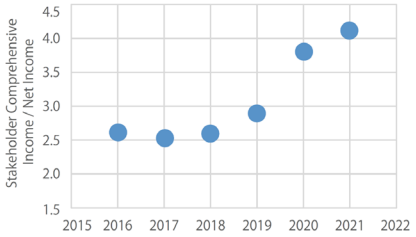


Figure 10(a): Stakeholder Comprehensive Income / Net Income

Furthermore, figure 10(b) shows the positive and negative impacts at each stage of the product's life cycle. In addition to the values determined by the financial indicators, "what are the positive impacts to multiple stakeholders" and "what are the negative impacts to the external environment" were able to be identified by performing the impact-weighted analysis separately for each process.

<Summary of Validity Confirmation>
Based on the above analysis, it was reaffirmed that the initiatives and planned measures that are currently being implemented are expanding the positive impact, reducing the negative impact, and contributing to the enhancement of corporate value.

In order to solve issues related to climate change in the future, strategies will be developed and measures implemented for each process in management so that the positive impacts can be expanded and the negative impacts can be reduced.

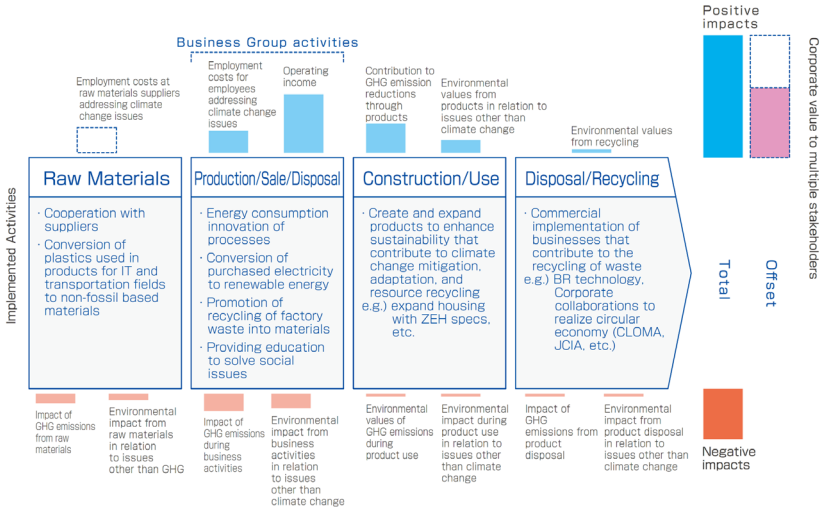
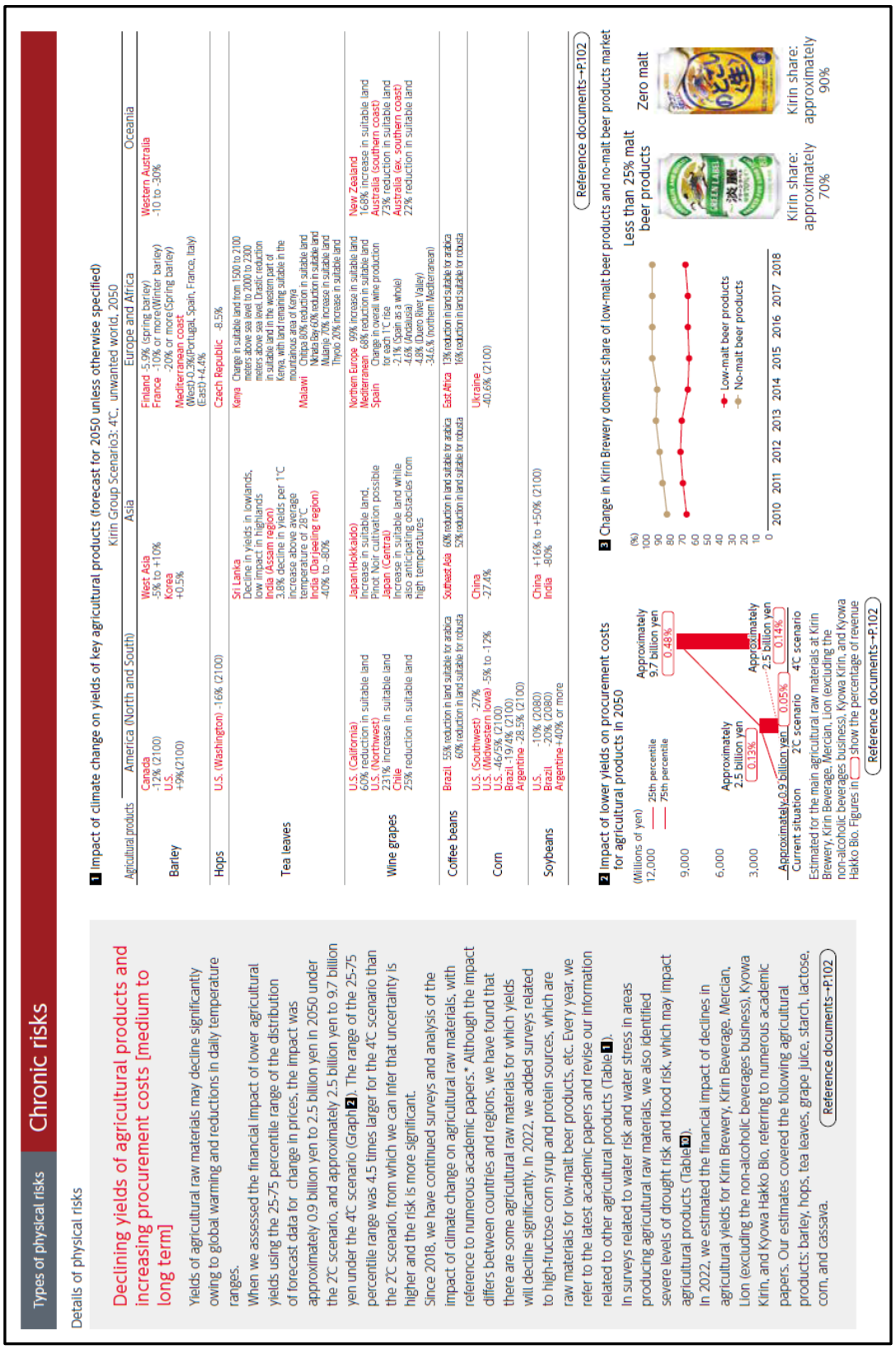


Figure 10(b): Details of positive and negative impacts on corporate value using impact-weighted accounting method (changes are based on FY2016)

Source: Sekisui Chemical, "TCFD Report 2022", p.25-26

Kirin Holdings

Physical risks due to climate change (such as impacts on yields of major agricultural products and procurement prices) and transition risks (such as impacts of the introduction of carbon pricing) are described in detail along with quantitative financial impacts for each scenario.



Types of physical risks **Chronic risks**

Details of physical risks

Declining yields of agricultural products and increasing procurement costs [medium to long term]

Yields of agricultural raw materials may decline significantly owing to global warming and reductions in daily temperature ranges.

When we assessed the financial impact of lower agricultural yields using the 25-75 percentile range of the distribution of forecast data for change in prices, the impact was approximately 0.9 billion yen to 2.5 billion yen in 2050 under the 2℃ scenario, and approximately 2.5 billion yen to 9.7 billion yen under the 4℃ scenario (Graph 2). The range of the 25-75 percentile range was 4.5 times larger for the 4℃ scenario than the 2℃ scenario, from which we can infer that uncertainty is higher and the risk is more significant.

Since 2018, we have continued surveys and analysis of the impact of climate change on agricultural raw materials, with reference to numerous academic papers.* Although the impact differs between countries and regions, we have found that there are some agricultural raw materials for which yields will decline significantly. In 2022, we added surveys related to high-fructose corn syrup and protein sources, which are raw materials for low-malt beer products, etc. Every year, we refer to the latest academic papers and revise our information related to other agricultural products (Table 1).

In surveys related to water risk and water stress in areas producing agricultural raw materials, we also identified severe levels of drought risk and flood risk, which may impact agricultural products (Table 2).

In 2022, we estimated the financial impact of declines in agricultural yields for Kirin Brewery, Kirin Beverage, Mercian, Lion (excluding the non-alcoholic beverages business), Kyowa Kirin, and Kyowa Hakko Bio, referring to numerous academic papers. Our estimates covered the following agricultural products: barley, hops, tea leaves, grape juice, starch, lactose, corn, and cassava. Reference documents→P.102

1 Impact of climate change on yields of key agricultural products (forecast for 2050 unless otherwise specified)

Kirin Group Scenario3: 4℃, unwanted world, 2050

Agricultural products	America (North and South)	Asia	Europe and Africa	Oceania
Barley	Canada -12% (2100) U.S. +9% (2100)	West Asia -5% to +10% Korea +0.5%	Finland -5.9% (spring barley) France -10% or more (Winter barley) -20% or more (Spring barley) Mediterranean coast (West) -0.3% (Portugal, Spain, France, Italy) (East) +4.4%	Western Australia -10 to -30%
Hops	U.S. (Washington) -16% (2100)		Czech Republic -8.5%	
Tea leaves		Sri Lanka Decline in yields in lowlands, low impact in highlands India (Assam region) 3.8% decline in yields per 1℃ increase above average temperature of 28℃ India (Darjeeling region) -40% to -80%	Kenya Change in suitable land from 1500 to 2100 meters above sea level to 2000 to 2300 meters above sea level. Drastic reduction in suitable land in the western part of Kenya, with land remaining suitable in the mountainous area of Kenya. Malawi Chitipa 80% reduction in suitable land Nkhata Bay 60% reduction in suitable land Mulanje 70% increase in suitable land Thyolo 20% increase in suitable land	
Wine grapes	U.S. (California) 60% reduction in suitable land U.S. (Northwest) 231% increase in suitable land Chile 25% reduction in suitable land	Japan (Hokkaido) Increase in suitable land. Pinot Noir cultivation possible Japan (Central) Increase in suitable land while also anticipating obstacles from high temperatures	Northern Europe 99% increase in suitable land Mediterranean 68% reduction in suitable land Spain Change in overall wine production for each 1℃ rise -2.1% (Spain as a whole) -4.6% (Andalusia) -4.8% (Duero River Valley) -34.6% (northern Mediterranean)	New Zealand 168% increase in suitable land Australia (southern coast) 73% reduction in suitable land Australia (ex. southern coast) 22% reduction in suitable land
Coffee beans	Brazil 55% reduction in land suitable for arabica 60% reduction in land suitable for robusta	Southeast Asia 60% reduction in land suitable for arabica 52% reduction in land suitable for robusta	East Africa 13% reduction in land suitable for arabica 16% reduction in land suitable for robusta	
Corn	U.S. (Southwest) -27% U.S. (Midwestern Iowa) -5% to -12% U.S. -46/-5% (2100) Brazil -19/-4% (2100) Argentina -28.3% (2100)	China -27.4%	Ukraine -40.6% (2100)	
Soybeans	U.S. -10% (2080) Brazil -20% (2080) Argentina +40% or more	China +16% to +50% (2100) India -80%		

Reference documents→P.102

2 Impact of lower yields on procurement costs for agricultural products in 2050

Estimated for the main agricultural raw materials at Kirin Brewery, Kirin Beverage, Mercian, Lion (excluding the non-alcoholic beverages business), Kyowa Kirin, and Kyowa Hakko Bio. Figures in ( ) show the percentage of revenue

Reference documents→P.102

3 Change in Kirin Brewery domestic share of low-malt beer products and no-malt beer products market

Source: Kirin Holdings, “Kirin Group Environmental Report 2022”, p.79

Strategy | Transitional risk |

Type of transitional risk		Transitional risk and strategy		
Policy	Risk	Carbon pricing and energy procurement costs [medium to long term] ●Tax savings in 2030 of approximately 0.5 billion yen under the 4℃ scenario, 3.5 billion yen under the 2℃ scenario, and at least 4.8 billion yen under the 1.5℃ scenario	Financial impact on the procurement of agricultural products from carbon pricing [medium to long term] ●Approximately 0.7 billion yen to 3.0 billion yen in 2050 under the 2℃ scenario, and approximately 1.6 billion yen to 5.7 billion yen under the 4℃ scenario	Impact on currently held assets [medium to long term] ●The possibility that we may be unable to recover investments owing to facility renewals earlier than expected as a result of legal regulations, etc., affecting through-flow boilers, etc.
	Strategy	●Profit and loss neutral reduction of GHG emissions in brewing and manufacturing ●GHG emission reductions through logistics optimization	●Mass plant propagation technologies and support for farms to acquire certification for sustainable agriculture	●Identification of trends in technology and renewal of our road map
Technology	Risk	Research and development capabilities [short to long term] ●Possibility that research contributing to decarbonization will not be put to practical use at the expected timing	Engineering capabilities [short to long term] ●Possibility that engineering capabilities required for decarbonization will not be transferred and cannot be utilized	Introduction of appropriate technology and facilities [short to long term] ●Possibility that we cannot install energy-saving facilities and switch to renewable energy at an appropriate time or price
	Strategy	●In-house packaging development technology (mitigation measures/reduction)	●Strengthen engineering functions	●Identification of trends in technology and renewal of our road map
Markets	Risk	Avoidance of fossil-derived raw materials [medium to long term] ●Possibility that people's impression of containers and packaging using raw materials derived from fossils may be negative	Concerns surrounding the destruction of forests [medium to long term] ●Possibility that awareness of forests as a sink of GHG will become stronger, and there will be a stronger negative impression of forestry and agriculture	Fluctuations in natural gas prices [medium to long term] ●Possibility that natural gas prices will not fall significantly
	Strategy	●Plastic resource recycling	●Promotion of sustainable forestry and agriculture	●Steady implementation of our roadmap to achieve our science-based 1.5℃ target
Reputation	Risk	Assessment of consumers [short to long term] ●Decline in the assessment of our brand owing to inferior initiatives and insufficient appropriate communication	Social responsibility toward renewable energy [short to long term] ●Criticism from the inconsiderate introduction of renewable energy power generation	Trust from long-term investors [short to long term] ●Possibility of loss of opportunities to secure stable investment owing to a lack of appropriate disclosure
	Strategy	●Engagement with young generationgenerations	●Formulation and operation of basic policies concerning the introduction of environmental value	●Appropriate disclosure in line with the TCFD recommendations

Source: Kirin Holdings, "Kirin Group Environmental Report 2022", p.86

Ono Pharmaceutical

In addition to specific figures showing the financial and business impact of climate change, potential opportunities characteristic of pharmaceutical companies, such as preventive and treatment products, are indicated.

<Opportunities related to climate change, as well as financial and business impacts>

Factor		Value chain	Opportunity and impact		Affected period	Financial impact	Management approach
Society aiming for below 1.5°C	Opportunity from resource efficiency	ONO	High-efficiency pharmaceutical manufacturing process	Introduction of high-efficiency pharmaceutical process technologies, such as process design and continuous manufacturing system, etc., that takes into account green sustainable chemistry *3 can provide opportunities to reduce energy and raw material costs. *3 Green Sustainable Chemistry is a concept that aims to reduce environmental impacts throughout the life cycle of chemical substances in order to realize a sustainable society.	Medium- to long-term	JPY 2.3 billion	• Define indicators for assessing resource efficiency. • Develop systems.
If the temperature rises by 4°C	Business opportunity	Customers	Preventive/treatment products	If disease trends change due to global warming, demand for existing drugs (for melanoma, etc.) may increase, or the development and sales of new drugs may have a favorable impact on revenue.	Medium- to long-term	JPY 0.5 billion	• Additional indications for existing pharmaceuticals. • Enhance the new compound library. • Make use of open innovation, etc.
Society aiming for below 1.5°C	Reputation opportunity	Investors, customers, recruitment market	Corporate value improvement	It is possible that our efforts to tackle climate change will help us earn customer trust, retain employees, improve our reputation in the recruitment market, and improve ESG investors' evaluation of our performance, thus contributing to the creation of corporate value.	Short- to medium-term	(Contributing to the creation of corporate value)	Appropriately disclose the results of activities undertaken to the public.

* Financial impact is the maximum value during the period from 2020 to 2030 in the 1.5°C or 4°C scenario (Opportunity from resource efficiency is cumulative).

Source: Ono Pharmaceutical website, "Information Disclosure Based on the TCFD Recommendation" (https://sustainability.ono-pharma.com/en/themes/121)

Morgan Stanley

The company explicitly discloses key activities for each of the four pillars (supporting the transition to a low-carbon economy, management climate risks, providing climate-related disclosures, and enhancement of resilience) established as its climate strategy.

Our Approach

Morgan Stanley is well positioned to provide the financing required to achieve net-zero emissions globally, and to partner with clients to mobilize capital at scale for the low-carbon transition. Our operations are increasingly resilient as we invest in resource efficiency and renewable energy. Together, these efforts mitigate our climate risk, enhance our businesses and support societal transition to a more sustainable future.

Our climate change strategy and underlying activities are built on four pillars, shown in the graphic below. Our firmwide commitment to net-zero financed emissions by 2050 is the centerpiece of our strategy, supporting our business activities, risk management and strategic positioning for long-term success.

Our Climate Strategy

1

Support the transition to a low-carbon economy by mobilizing capital toward low-carbon solutions for clients, and publishing industry-leading research and thought leadership for an investor audience.

KEY ACTIVITIES

- Supporting clients' efforts to achieve net-zero financed emissions. In 2021, we tripled our low-carbon solutions financing commitment to $750Bn by 2030. We raised over $450Bn through 2021.
- Publishing frequent, actionable analysis for investors that supports low-carbon transition

2

Manage climate risk by integrating climate change considerations across risk management processes and governance structures.

KEY ACTIVITIES

- Pursuing net-zero financed emissions to significantly mitigate our transitional climate risks. As a start, we published 2030 interim targets to measure and help reduce our financed emissions.
- Developing scenarios and stress-test modeling capabilities to inform our evolving climate strategy and risk management process.
- Supporting and informing the development of methodologies, tools and frameworks to measure, manage and report (see graphic on page 17) financed emissions and associated risks in the financial sector.

3

Provide relevant, transparent and useful climate-related disclosures in our TCFD report and other publications.

KEY ACTIVITIES

- Publishing annual climate reports, disclosing steps taken toward the achievement of net-zero financed emissions, low-carbon financing and operational commitments.
- Introducing and implementing a transparent Measure-Manage-Report framework to inform our financed emissions disclosure.
- Holding leadership positions in PCAF and NZBA, the expert organizations guiding our path and disclosures on net-zero financed emissions.

4

Enhance the climate resilience of our operations by minimizing our footprint and enhancing operational resiliency.

KEY ACTIVITIES

- Committing to achieving carbon-neutral global operations by year-end 2022 and using 100% renewable energy.
- Pursuing on-site power generation, power purchasing agreements, renewable energy credits and carbon offsets.

Source: Morgan Stanley, "2021 Climate Report", p.15

ENEL Group

In analyzing physical and transition risks, financial impact is disclosed along with its business areas. The financial impact disclosure is qualitative (3 levels), but clearly indicates the threshold (EBITDA <100 million euros, 100 million - 300 million euros,> 300 million euros).

The initial scenario analysis has shown that chronic structural changes in the recent trends of physical variables will begin to occur in a considerable manner starting from 2030. However, in order to obtain an indicative estimate of the potential impacts, and include the possibility of the early onset of chronic effects, it is possible to test sensitivity of the Industrial Plan to the factors potentially influenced by the physical scenario, regardless of any direct relationship with climate variables. Of course, such stress testing has an extremely low probability of occurrence based on historical events and geographical diversification. The variables examined were: electricity demand (+/- 1% per year), whose variations can potentially impact the generation and retail businesses. It was stress tested for all countries in which the Group operates; the output potential of renewables plants was also stressed (+/- 10% over a single year). Variations in this variable can potentially impact the generation business. It was stressed separately at the individual technology level around the globe. The data reported show the effect on a single year for a single generation technology and include both the volume and price effects.

Time horizon
Short (within 3 years)
Medium (until 2030)
Long (2030-2050)

Downside scenario current policies ▼ ● Upside scenario current policies ▲ ●

Scenario phenomena	Risk & opportunity category	Description	Time horizon	Impact	GBL affected	Scope	Quantification - Type of impact	Upside/ Downside	Quantification - range < €100 mn	€100-300 mn	> €300 mn
Chronic physical	Market	**Risk/ opportunity:** increased or decreased power demand.	Short	Electricity demand is also influenced by temperature, the fluctuations of which can have an impact on the business. Although structural changes should not occur in the short-medium term, to assess the sensitivity of the Group's performance to potential temperature changes, sensitivity analyses are conducted with respect to changes in electricity demand of +/- 1% of the Group total.	Enel Green Power and Thermal Generation and Infrastructure and Networks	Group	EBITDA/year	+1% ▲	●		
								-1% ▼	●		
Chronic physical	Market	**Risk/ opportunity:** increased or decreased renewables output	Short	Renewables output is also influenced by the availability of resources whose fluctuations can have an impact on the business. Although structural changes should not occur in the short-medium term, to assess the sensitivity of the Group's performance to potential temperature changes, sensitivity analyses are conducted with respect to changes in potential output of +/- 10% per year by individual technology.	Enel Green Power and Thermal Generation	Group Potential Hydro Output	EBITDA/year	+10% ▲			●
								-10% ▼			●
						Group Potential Wind Output	EBITDA/year	+10% ▲	●		
								-10% ▼	●		
						Group Potential Solar Output	EBITDA/year	+10% ▲	●		
								-10% ▼	●		

Source: ENEL, "Sustainability Report 2021", p.95

mand and the average requested power, a considerable variation in energy flows, which will require dynamic and flexible grid management. The Group therefore expects that in this scenario incremental investments will be necessary to guarantee the connections and suitable levels of quality and resilience, by promoting the adoption of innovative operating models. These investments must be accompanied by coherent policy and regulation scenarios to guarantee suitable economic returns for the Infrastructure and Networks Business Line.

Time horizon
Short (within 3 years)
Medium (until 2030)
Long (2030-2050)

Upside ● Downside ●

Risk & opportunity category	Time horizon	Scope of analysis	GBL affected	Geographic scope	Description of impact	Quantification - Type of impact	Quantification - range: < €100 mn	€100-300 mn	> €300 mn
Policy & Regulation	Short/ Medium	For any given Paris scenario, the Group has assessed the impact on performance of actions to modify the price of CO_2.	Enel Green Power and Thermal Generation	Italy and Iberia	Considering the potential impact of regulatory measures to incentivize energy transition, the Group assesses the exposure to changes of +/- 10% in the price of CO_2 using sensitivity analysis.	EBITDA/year 10% - Upside vs. Paris	●		
						EBITDA/year -10% - Downside vs. Paris	●		
Market	Medium	Considering two alternative transition scenarios, the Group assessed the impact of an increase in the penetration of renewables on the benchmark power price and on additional capacity at 2030.	Enel Green Power and Thermal Generation	Global	Greater room for investment in new renewables capacity associated with a decrease in power prices due to increased penetration of renewables.	EDITDA 2030 Best Place vs. Paris			●
					Less room for investment in new renewables capacity associated with an increase in power prices due to decreased penetration of renewables.	EDITDA 2030 Slow Transition vs. Paris			●
Market/ Products & Services	Medium	Considering two alternative transition scenarios, the Group assessed the impact of trends in efficiency, the adoption of electric devices and the penetration of EVs to estimate the potential effect on commodity consumption, including the impact on gas customers due to the increase in electrification and on the demand for beyond-commodity services.	Customer	Global	Increase in margins due to impact of transition in terms of the electrification of energy consumption, mainly linked to forecast increases in green hydrogen.	EDITDA 2030 Best Place vs. Paris		●	
					Decrease in margins due to impact of transition in terms of slower electrification of energy consumption, mainly in residential and transport sectors, and reduced penetration of new technologies.	EDITDA 2030 Slow Transition vs. Paris			●

Source: ENEL, "Sustainability Report 2021", p.104

Mitsubishi UFJ Financial Group

The impact of transition and physical risks on the credit portfolio as a result of scenario analysis is quantitatively disclosed, including the period covered.

Results of Scenario Analysis (new findings from scenario analysis are underlined)

	Transition risks	Physical risks
Scenario	Various scenarios, including the Sustainable Development Scenario ("well below 2 °C") of the IEA*1 and the 1.5°C scenario that the NGFS*2 has released	RCP2.6 (2°C scenario) and RCP8.5 (4°C scenario) published by the Intergovernmental Panel on Climate Change (IPCC)
Analytical method	An integrated approach is adopted to assess the impact by combining the bottom-up approach at the individual company level and the top-down approach at the sector level. Using this approach, the impact on credit ratings in each scenario is analyzed along with the effect on the overall financial impact of the sector's credit portfolio.	Estimated damage in the event of a flood is analyzed, and an approach to measure its impact on the overall credit portfolio using the change in default probability that the occurrence of floods would have on the credit portfolio is adopted. In the calculation of financial impact, the period of the suspension of the business of the borrower and the loss of assets, among other aspects, are reflected.
Sectors/targets subject to analysis	Energy, utility, automobiles, iron & steel, air transportation and maritime transportation	Flood
Calculation period	Until 2050 using the end of March 2022 as the benchmarking point	Until 2100 using the end of March 2022 as the benchmarking point
Result of analysis	Annual impact: Approx. ¥1.5 billion to ¥28.5 billion	Cumulative impact: Approx. ¥115.5 billion

*1 International Energy Agency (IEA) *2 Network for Greening the Financial System

Source: Mitsubishi UFJ Financial Group, "MUFG Report 2022", p.61

Denso

For climate-related risks and opportunities, potential financial impact, timeframe and level of impact, as well as responses are disclosed in a compact format. Potential financial impact is presented in quantitative terms in addition to a qualitative description.

Analysis of Climate-related Opportunities and Risks

We performed an analysis on the differences between our awareness of the business environment, which forms the basis of the Long-term Plan, and the circumstances under the scenarios on the left. Items expected to have a significant impact on our businesses were identified as key items. As a result, for key items related to transition risks, we identified the inability to respond to fuel efficiency regulations and increasing electrification with our current products as a risk, and innovative technologies as an area where we can create opportunities. For physical risks, the risk of revenue declines due to suspended plant operations following meteorological disasters was identified as a key item.

	Key items	Major potential financial impact	Timeframe / Level of impact	Response
Major risks	New controls and regulations placed on our existing products and services	**Declines in revenue due to the impact of regulations on fuel efficiency and exhaust gas** We expect to see even tighter regulations on fuel efficiency (lower CO_2 emissions [upper limit] to roughly 1/3 between 2018 to 2030) as well as acceleration in the transition to electric vehicles (going from comprising 2% of all vehicles in 2018 to 47% of all vehicles in 2030). Inability to respond to these changes would result in downward pressure on revenue totaling approximately ¥200.0 billion by 2025.	Medium-term / High	Increase driving distance through development of energy-saving technologies for products powered by electricity, etc.
	Increase in negative feedback from our stakeholders	**Refusal to invest and share price declines due to insufficient response to the need for environmental information disclosure** Our management may be impacted by a refusal of stakeholders to invest in the Company, and declines in the share price may result from a perceived lack of information disclosure and reluctance to respond to the increasing level of information disclosure requirements of stakeholders, especially investors.	Long-term / Relatively high	• Establish a structure for gathering and managing information through collaboration between the Sustainable Environment Strategy Department of the Safety, Health & Environment Division and other relevant divisions. Enhance the content of disclosed information and strengthen communication with stakeholders • Prepare for the acquisition of third-party certification in order to enhance the reliability of our information
	Increased severity and occurrence of abnormal weather such as typhoons and floods	**Decline in revenue due to suspended plant operations and supply chain disruptions** We anticipate downward pressure on revenue totaling approximately ¥90.0 billion in the event our plant operations are suspended in Japan and Asia (where we conduct 66% of our overall production), where the possibility of floods occurring is high.	Long-term / Relatively high	• Construct plants equipped with measures to mitigate weather disasters • Ensure multiple suppliers for components and other materials • Develop platforms that connect our plants across the globe and establish a global production structure that can immediately respond to changing production needs
Major opportunities	Utilization of more effective production and logistics processes	**Reduced energy costs at plants** If we are able to achieve our target under Eco Vision 2025 of reducing the amount of energy used per unit by half compared with fiscal 2013, we could achieve a CO_2 emissions reduction of 1.73 million tons per year. This, combined with our energy-saving activities, would likely reduce energy costs by approximately ¥60.0 billion.	Medium-term / Relatively high	Continue to engage in energy-saving activities and promote the development of energy-saving production technologies with the aim of further enhancing production efficiency
	Development of new products and services through R&D and technological innovation	**Increase in revenue due to higher demand for xEVs** • Increase in number of xEVs in each country against the backdrop of the trend toward carbon neutrality. Rising demand for technologies such as heat pumps that improve the heat efficiency of xEVs • Forecast of a positive boost to revenue totaling nearly ¥500.0 billion in 2025 resulting from the response to electrification, thermal products related to electrification • Further creation of opportunities through the development of engine control systems and other technologies to respond to alternative fuel (e-fuel, hydrogen fuel, etc.)	Medium-term /High	• Accelerate the development of driving, power supply, and control technologies for electrification as well as technologies for heat pump systems and thermal systems • Develop engine control systems and other technologies that respond to alternative fuel
	Diversification of business activities	**Increase in revenue following higher demand for decarbonization technologies** • Creation of opportunities using technologies that contribute to carbon neutrality, which were cultivated in the automotive domain, including agricultural, logistics, FA, and CO_2 adsorption businesses • Forecast of ¥300.0 billion in revenue in the agricultural, logistics, and FA domains in 2030	Long-term / Medium	Accelerate the development of sensor, control, robot, and bio-related technologies to create agricultural production technologies and technologies for adsorbing CO_2, among others. Also, develop new businesses and create sales channels for such technologies through proactive business alliances

Source: Denso, “Integrated Repot 2021”, p.65

AXA Group

The company describes in detail the results of risk analysis and stress testing for each business unit and operation of the company. For the real estate portfolio shown below, the estimated amount of damage by region is quantitatively disclosed for natural disasters such as floods.

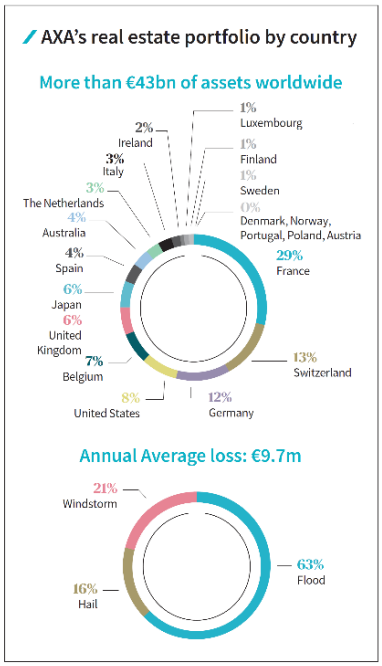
5.5 Climate-related physical risks' impact on the real estate investment portfolio

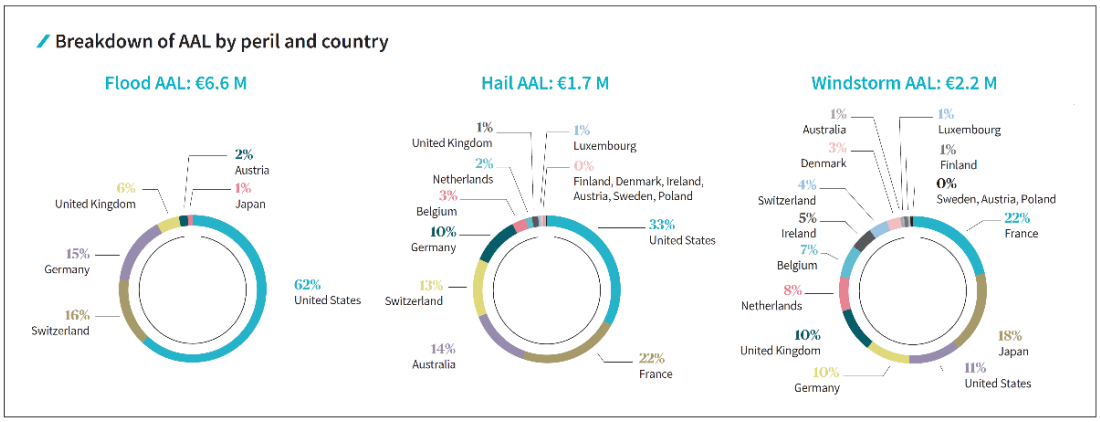
Extreme weather events may also impact "Real Assets", which are subject to both physical and transition risks in TCFD terminology. In addition to the "Climate Value-at-Risk" (CVaR) analysis of its corporate credit investment portfolio, AXA has a significant amount of claims-related data to conduct a "physical risks" analysis of its real estate portfolio.

The underlying climate mechanisms overlap with Property (re)insurance but impacts differ significantly when looking at such assets from an investor's perspective.

In-house risk analysis for Real Estate assets

Since its first Climate Report in 2016, AXA has done annual analyses of a selection of real estate assets. In 2021, this analysis covered over €43bn[1] of direct property investments. AXA's Investment and Risk Management teams evaluated the financial impact of floods, windstorms and hail on these properties in some 20 countries representing almost 100% of the direct investment portfolio. Like with previous studies and based upon an analysis of climate risk, both average annual losses (AALs) and losses from a 'one-in-a-fifty-year' flood, windstorm and hail events remain limited compared to the total asset value. The resulting AALs are broken down by country below.





AXA's real estate exposure is global with most of the portfolio in Europe (82%). The portfolio's highest risk exposure is to flooding (63% of AALs), followed by windstorm and hail.

Asset-level data used to run the analysis currently relies on the geolocation of buildings and their main occupancy. However, models used to assess risk exposure to natural hazards can incorporate more granular information regarding the physical components of a building[2]. This can generate more refined and asset-specific results. Such detailed information is currently not systematically available in real estate portfolios. Work is ongoing to collect this data.

Based on the internal risk assessment, the U.S.A. is driving AAL for both flooding (62%) and hail (33%) perils.

- **Windstorm peril:** the U.S.A., France, the UK, Japan and Germany account for 62% of the AAL.
- **Flood peril:** Germany and Switzerland account for 30% of the AAL.
- **Hail peril:** France, Australia, Switzerland and Germany account for 59% of the AAL.

The AAL increased compared to 2021 analysis due to the addition of new assets within the real estate portfolio.

(1) Representing AXA's ownership in real estate assets managed by AXA IM Alts as at 31/12/2021.
(2) Such as the structure, the year of construction, the height of the building.

Source: AXA Group, "2022 Climate and Biodiversity Report", p.68

③ Strategy b) (Transition plans)

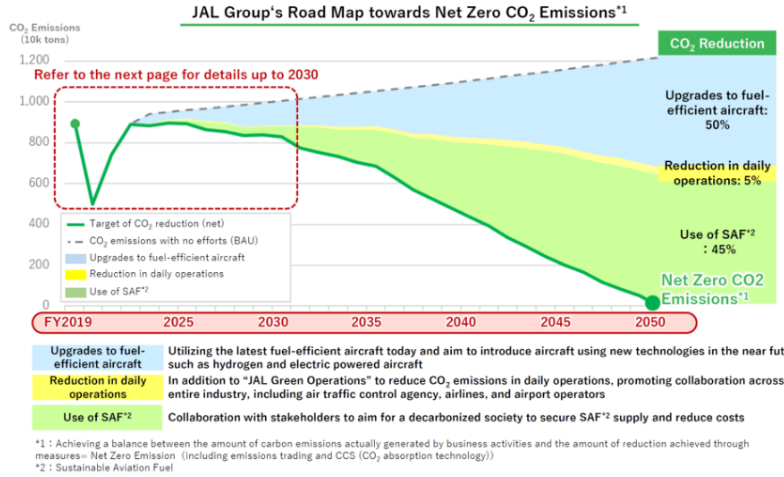
Japan Airlines

Historical emissions, targets, and measures are covered, enabling understanding the positioning of emissions reduction in the face of increasing demand. The company also sets an interim target for 2030 in conjunction with 2050 targets.

Conditions for creating scenarios to achieve net zero emissions by the JAL Group

To reduce CO_2 emissions from JAL Group aircraft, we are discussing issues and considering measures that we can take, on studying emissions scenarios targeting 2050, with reference to the latest materials of ICAO and IATA based on the 1.5℃ pathway and ATAG's*6 WAYPOINT 2050*7.
In creating scenarios, we set the growth of RTK (Revenue Ton-Kilometers) based on total international and domestic passenger demand respectively, calculated the total volume of CO_2 emissions up to 2050, and reflected the impact in each initiative.

※6 ATAG (Air Transport Action Group): A global coalition to promote sustainability in the aviation industry.
※7 Waypoint 2050 (English only)

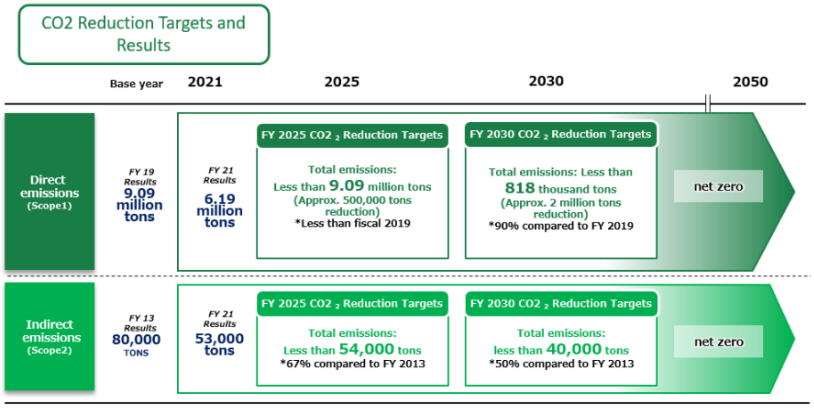


Upgrades to fuel-efficient aircraft	Utilizing the latest fuel-efficient aircraft today and aim to introduce aircraft using new technologies in the near future, such as hydrogen and electric powered aircraft
Reduction in daily operations	In addition to "JAL Green Operations" to reduce CO_2 emissions in daily operations, promoting collaboration across the entire industry, including air traffic control agency, airlines, and airport operators
Use of SAF*2	Collaboration with stakeholders to aim for a decarbonized society to secure SAF*2 supply and reduce costs

*1 : Achieving a balance between the amount of carbon emissions actually generated by business activities and the amount of reduction achieved through measures= Net Zero Emission (including emissions trading and CCS (CO_2 absorption technology))
*2 : Sustainable Aviation Fuel

CO_2 Reduction Targets and Initiatives by 2030

The JAL Group's target of reducing total emissions by 10% by 2030 from 2019 levels is one of the most ambitious targets among global airlines. We will boldly take on this challenge through such initiatives as upgrades to fuel-efficient aircraft based on a stable financial base, the steady implementation of JAL Green Operations, and strategic procurement of SAF on setting specific SAF loading targets.
Moves to manufacture SAF and build supply chains are accelerating overseas. The Japanese government has clearly stated its intention to promote the manufacture and distribution of SAF in its "Basic Policy on Economic and Fiscal Management and Reform 2022" and "Grand Design and the Action Plan for a New Form of Capitalism." In order to achieve our ambitious goal of replacing 10% of all onboard fuel with SAF by 2030, the JAL Group will actively work to commercialize SAF through public-private partnerships and cooperation with domestic and international stakeholders.



Source: Japan Airlines website, "Addressing Climate Change"
(https://www.jal.com/en/sustainability/environment/climate-action/)

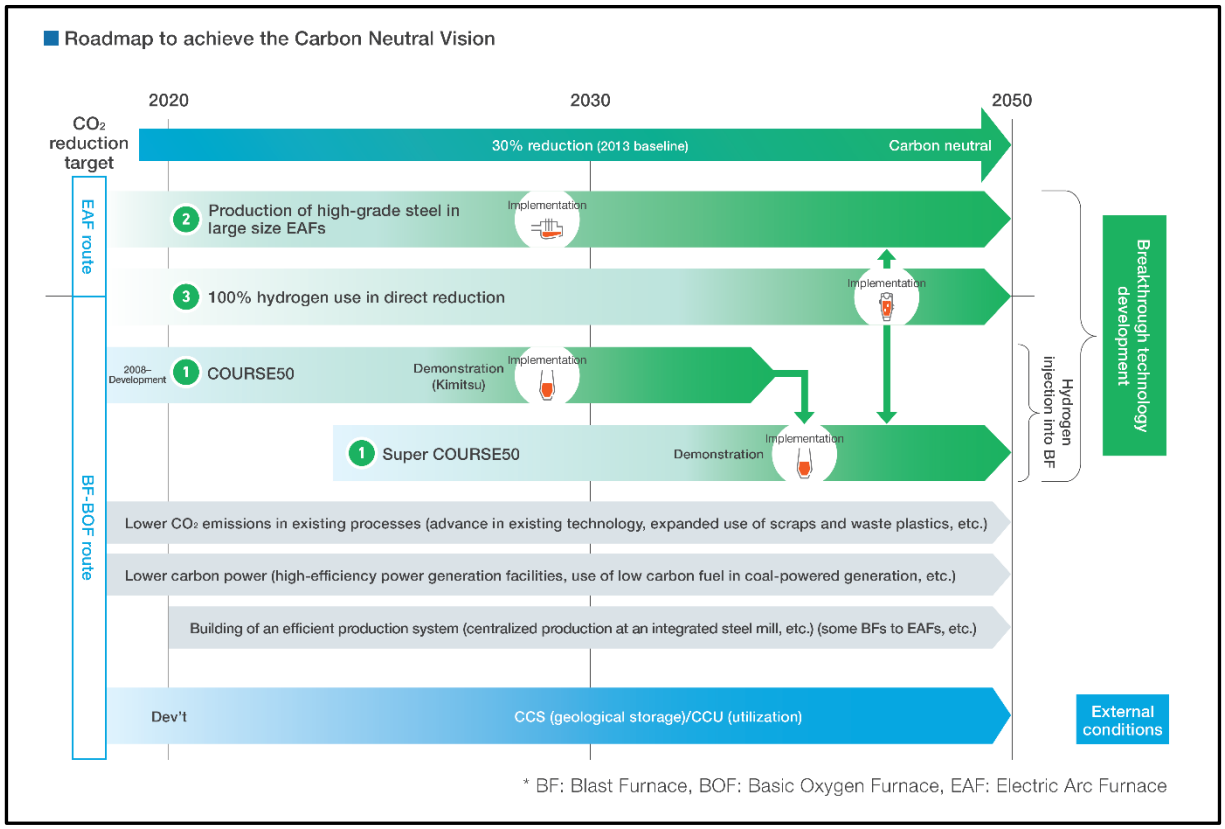
Tokyo Electric Power Group

In addition to achieving carbon neutrality by 2050, the company has disclosed specific measures for achieving halving of carbon emissions by 2030 as an interim goal, along with the amount of investment and the effect on revenue improvement. This enables the understanding of the effectiveness of the transition plan.

Source: Tokyo Electric Power Company, "TEPCO Integrated Report 2022", p.40

Nippon Steel Corporation

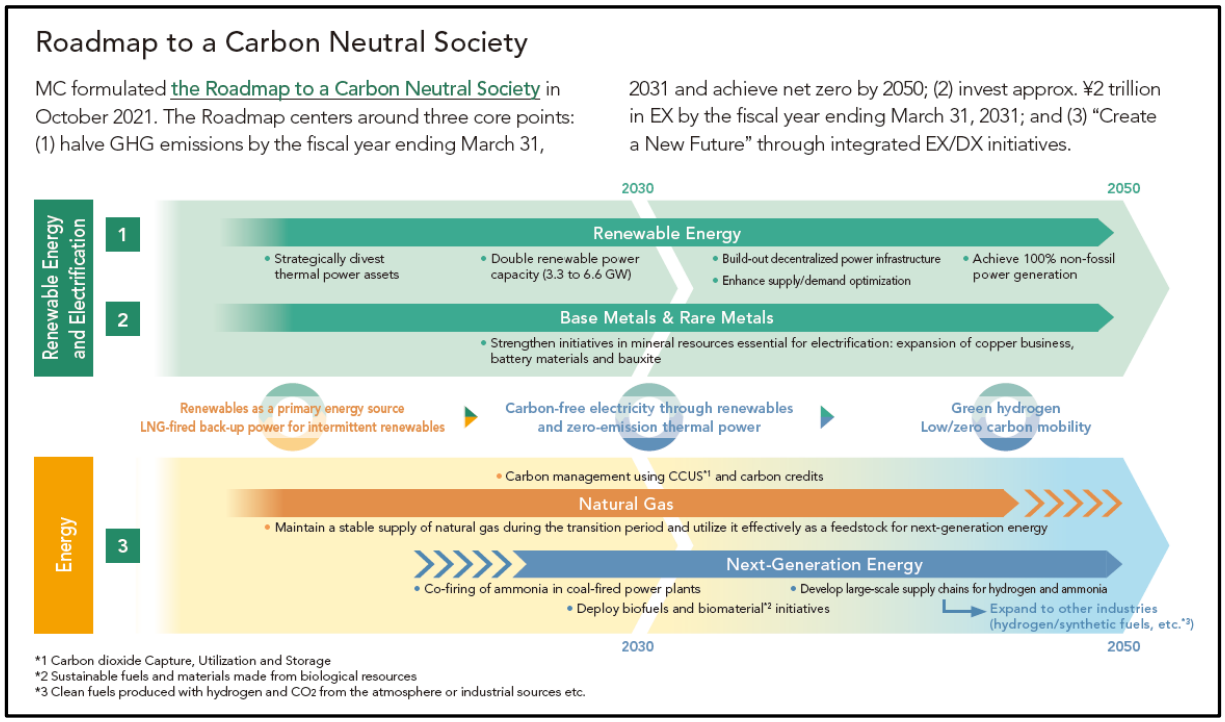
With a view to realizing a carbon-neutral society in 2050, the company has presented specific measures, such as the use of electric arc furnaces and the development of hydrogen reduction steelmaking technology, and has disclosed them in a roadmap outlining the implementation dates.



Source: Nippon Steel, “Nippon Steel Integrated Report 2022”, p.25

Mitsubishi Corporation

Aiming at a carbon-neutral society in 2050, the company has disclosed a roadmap outlining specific measures such as ammonia co-firing and renewable energy business expansion, and the timing of their implementation, making it straightforward to grasp its overall strategy.



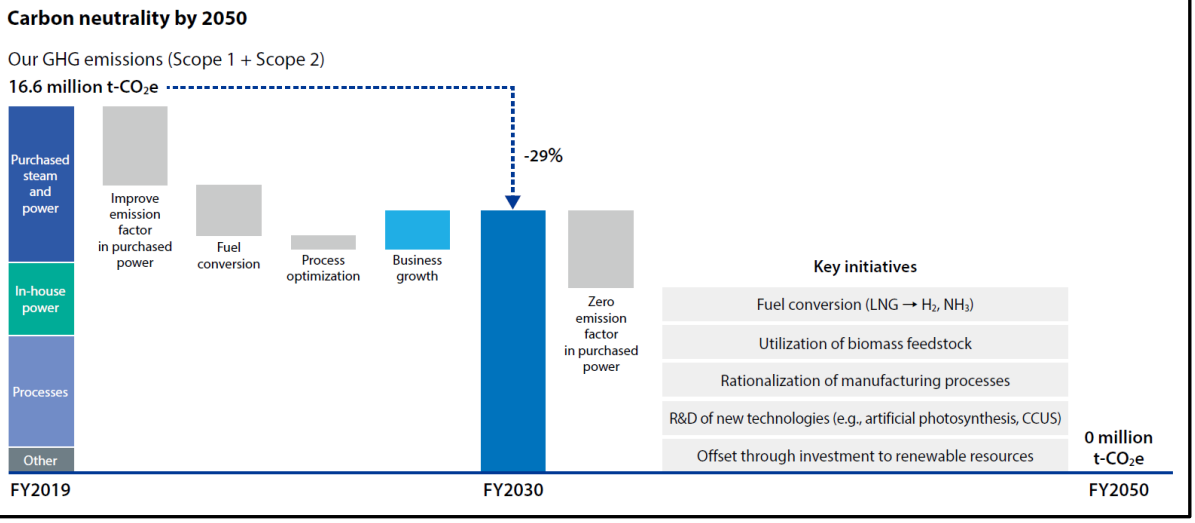
Source: Mitsubishi Corporation, "Mitsubishi Corporation Integrated Report 2022", p.27

Mitsubishi Chemical Group

The company discloses key measures and timelines for its 2050 carbon neutral roadmap. In particular, the company shows specific reductions from each measure through 2030 in the form of a waterfall chart.

Path toward carbon neutrality while achieving sustainable growth

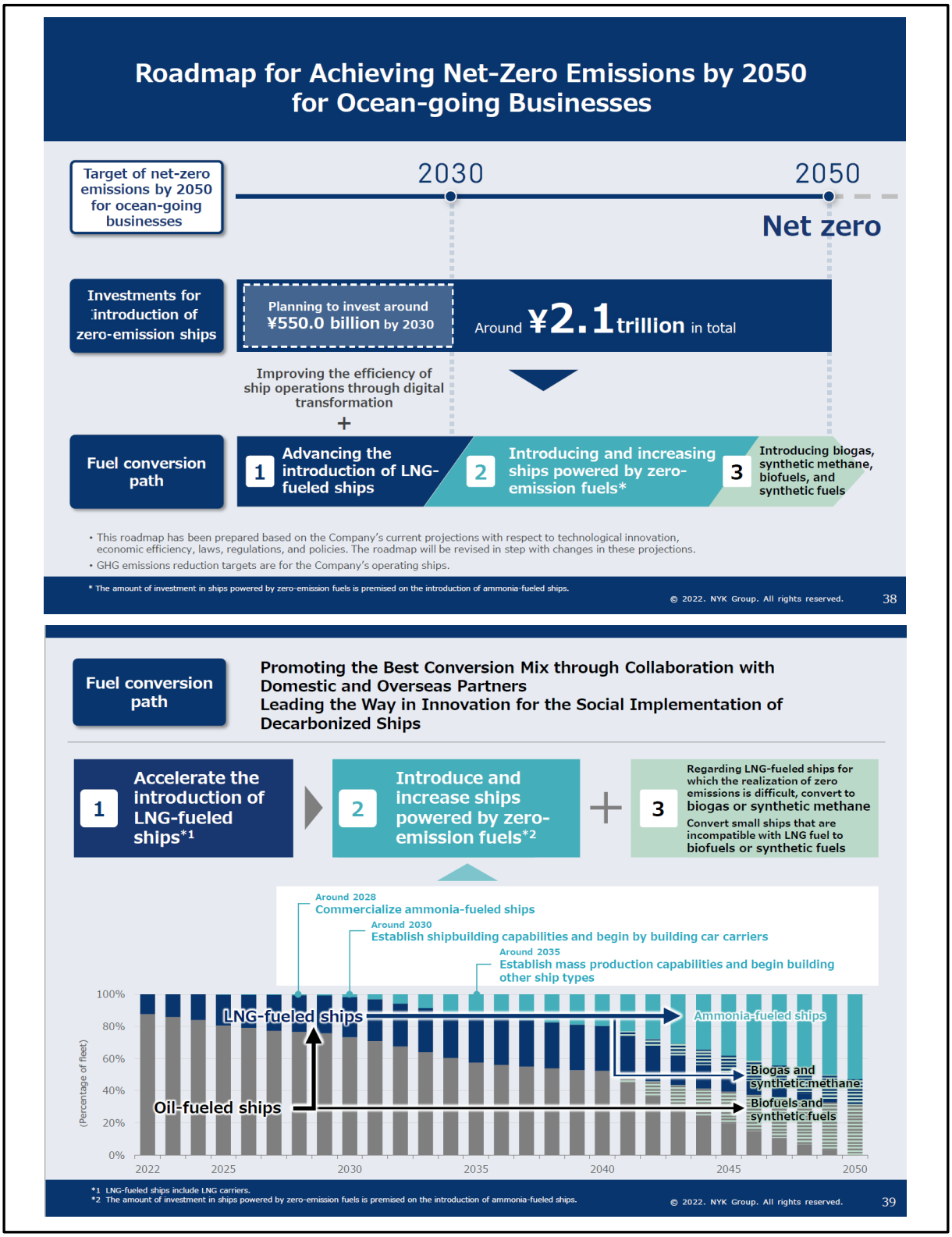
In our medium- to long-term basic management strategy, KAITEKI Vision 30, unveiled in February 2020, MCG defined achieving GHG impact neutrality as one of its social visions in 2050. To achieve this, MCG is implementing measures across the value chain to reduce GHGs and ensure effective use, as well as formulating global emissions reduction targets and policies appropriate for each country and region. By 2030, we aim to reduce GHG emissions by 29% versus fiscal 2019 levels, and by 2050 we plan to reach carbon neutrality while achieving sustainable growth.



Source: Mitsubishi Chemical Group, "KAITEKI REPORT 2022", p.26

NYK Line

For the target of net zero emissions in 2050, interim targets, measures and investment are disclosed. In addition, the percentage of fleet is shown by year, giving a detailed picture of its transition.

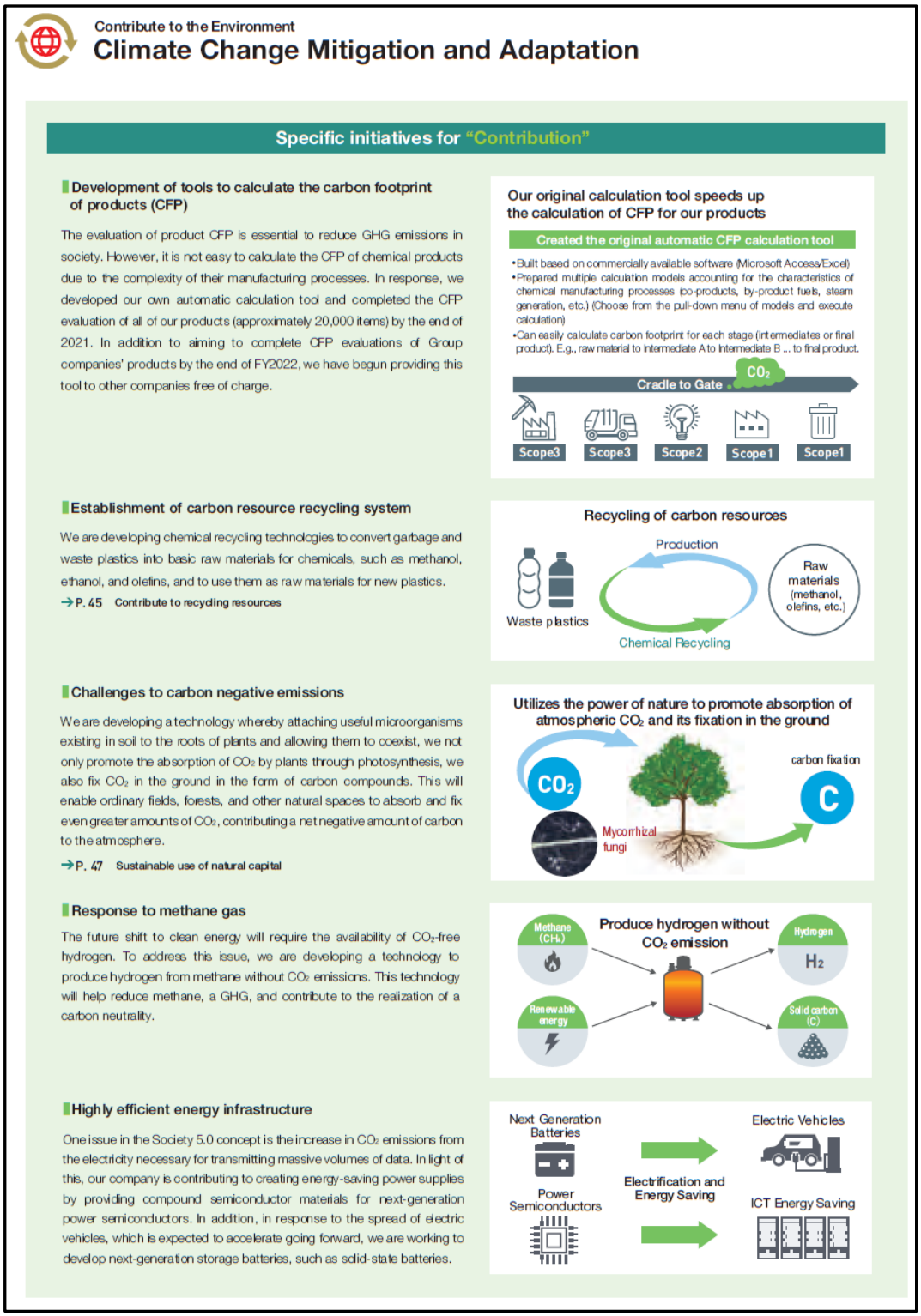


Source: NYK Line, "The NYK Group ESG Story 2022", p.38-39

④ Strategy b) (Innovation)

Sumitomo Chemical

Through its unique concepts of responsibility and contribution, the company associates itself with the risks and opportunities to achieve carbon neutrality in 2050. In terms of contribution, the report includes examples of various innovations the company is undertaking.



Source: Sumitomo Chemical, "Sumitomo Chemical Annual Report 2022", p.43

⑤ Strategy c) (describing the resilience of climate strategies by considering climate-related scenarios)

Sekisui Chemical

In addition to climate scenarios (1.5 degrees C and 4 degrees C), the company has conducted its own scenario analysis, taking into account socioeconomic factors such as urban concentration and rural decentralization, which are important for the company.

By detailing the risks and opportunities envisaged and the measures taken for the four resulting world views (Decarbonized smart society, Sustainable circular society, Local production and local consumption society, and Mass consumption society), the company shows that its business is capable of responding to any of the scenario outcomes.

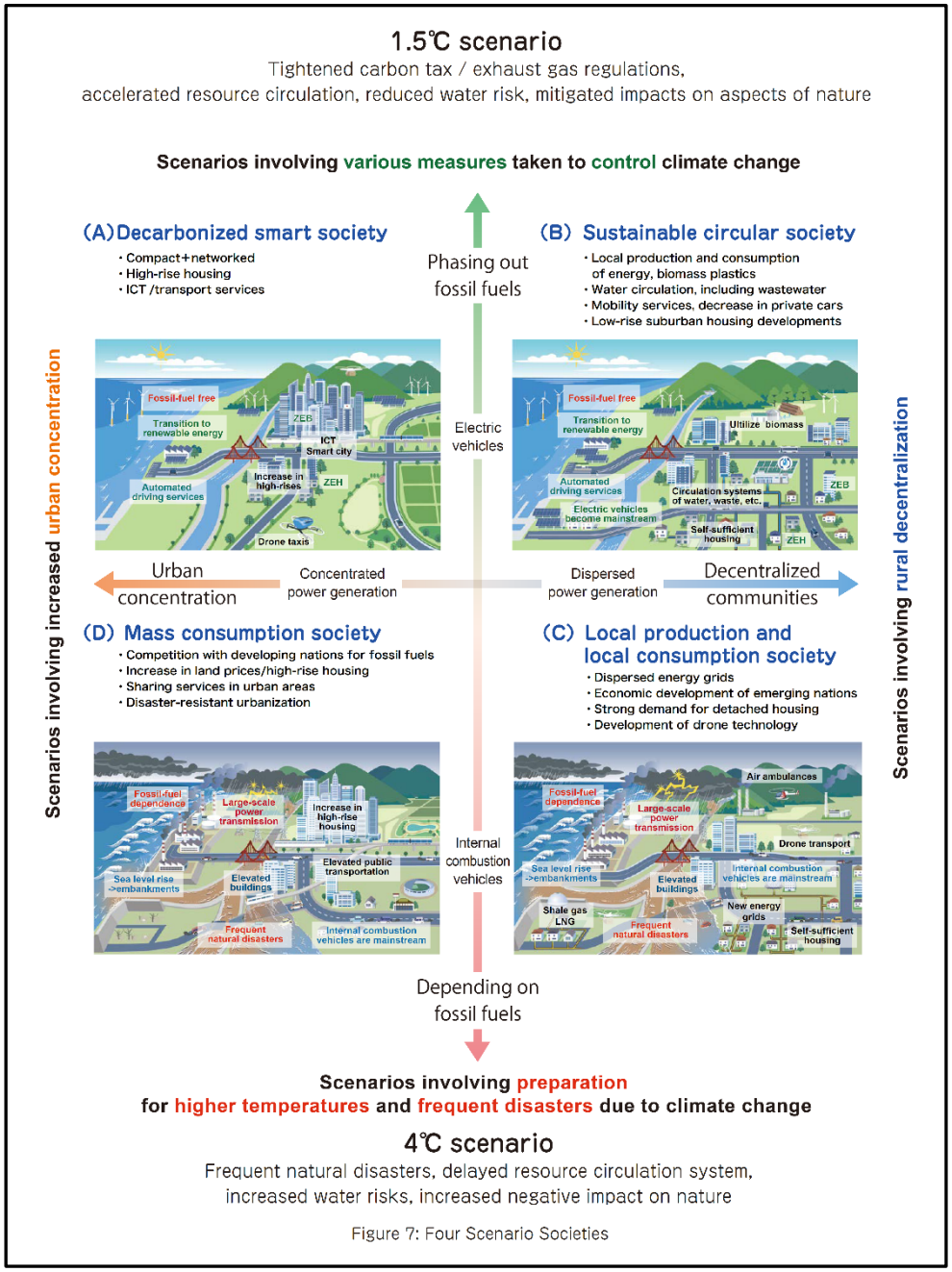


Figure 7: Four Scenario Societies

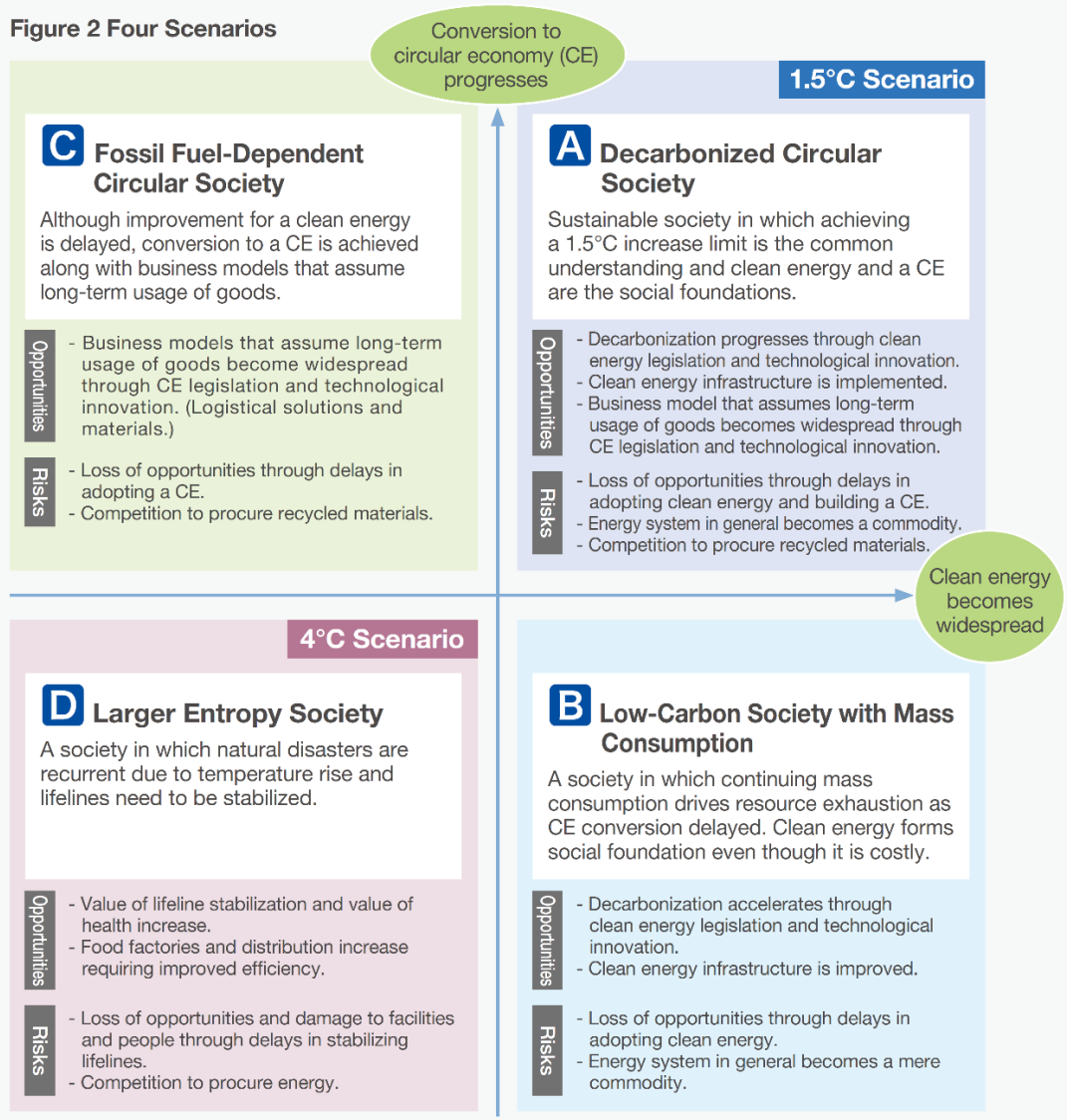
Source: Sekisui Chemical, “TCFD Report 2022”, p.20

Panasonic Holdings

Two climate scenarios (1.5 degrees C scenario, 4 degrees C scenario) are combined with elements of the circular economy, and the resulting scenario analysis is conducted for four unique scenarios (Decarbonized circular, Low-carbon society with mass-consumption, Fossil fuel-dependent circular, and Larger entropy societies).

For each scenario, risks and opportunities are identified based on impacts on industry and changes in customer value, and countermeasures are presented.

Figure 2 Four Scenarios



Regarding factors that have an extremely high impact on our business from the climate change viewpoint, we extracted “spread of clean energy” and “conversion to a circular economy.” Setting these two factors as the axes of a matrix, we created four scenarios toward 2030 over the quadrants as shown below (Figure 2). We defined a society in which clean energy is in wide use and the shift to a circular economy is progressing as the 1.5 C scenario, and a society that does not shift to a circular economy and relies on fossil fuel as the 4 C scenario.

Source: Panasonic Holdings, “Panasonic Group's Sustainability Data Book 2022”, p.22

BHP Group

The company depicts 4 climate scenarios (Central Energy View, Lower Carbon View, Climate Crisis scenario and 1.5 degrees C scenario) and explains the assumptions as well as major external environmental changes for each scenario. It also discloses the impact of the scenario analysis on each of the company's commodities (metals and energy sources).

Scenario analysis update

Given the rapid pace of external change, we have conducted portfolio analysis based on four energy system scenarios, to examine the impact of different economic, policy and societal changes:

- **Central Energy View** reflects existing policy trends and commitments, and tracks to approximately 3°C temperature increase above pre-industrial levels by 2100
- **Lower Carbon View** tracks to approximately 2.5°C temperature increase by 2100 and accelerates decarbonisation trends and policies, particularly in easier-to-abate sectors such as power generation and light duty vehicles
- **Climate Crisis scenario** has strong growth with limited climate action for a decade and a half, followed by a climate crisis which precipitates an extremely steep decarbonisation trajectory, societal turmoil and low GDP growth
- **1.5°C scenario**, which aligns with the goals of the Paris Agreement and requires steep global annual emissions reductions, sustained for decades to stay within a 1.5°C carbon budget

These scenarios were developed prior to the impacts of the COVID-19 pandemic, and therefore any possible effects of the pandemic were not considered in the modelling, although it has been accounted for in our short-run forecasts and considered in our strategic decision-making.

Central Energy View (~3°C) 2020 – 2050
Reflects our views on the most likely pathway for policy, technology, and consumer choice

The Central Energy View is driven by the current and announced policy environment, and overlaid by current and prospective technological options available to decarbonise.

Under this view, total primary energy demand (TPED) grows slightly faster than population, while the energy intensity of GDP declines steadily. The demands of a growing, wealthier population, with an additional 2.5 billion people flowing into urban areas, are only partially offset by efficiency gains. As a result, TPED is ~30 per cent higher in 2050 than today. Cumulative TPED over the next 30 years is 60 per cent higher than in the last 30 years.

Power: grows at roughly twice the rate of the aggregate TPED, as more processes are electrified and more people gain access to electricity in the developing world. Large-scale cost reductions in wind and solar generation lead to a much larger share for both on a global level by 2050, with energy coal reducing substantially in the OECD power mix. Energy coal maintains its dominance in the power mix for large developing countries for at least two decades, due to the current low average plant age and affordability concerns. When these plants retire in the late 2030s and early 2040s, the drop-off for energy coal is material. Natural gas plays an important role for baseload generation where supply is cheap, and for supporting renewables integration where it is more costly.

Transport: The twin levers of efficiency gains and electrification of transport lead to a plateau in oil demand in the medium term, with demand eventually turning negative.

Industry: coal and oil are resilient in industry, although we do anticipate a switch to gas where feasible. Unlike in the power sector, industry will find it much more difficult to shift away from fossil fuels, particularly metallurgical coal (in steel), energy coal (in cement), and oil (in petrochemicals).

Assumptions and outputs:

Population in 2050	Based on UN forecast 9.8 billion
TPED	TPED grows at ~1% CAGR to 2050;
Energy intensity of GDP	~50% improvement in energy intensity
Rate of energy-related emissions reductions	+0.3% CAGR to 2050
Carbon prices (US$/tCO$_2$e)	Regional carbon prices range from ~$10-40/t in 2030
Fossil fuel share of primary energy by 2050	~70%
Peak year for coal (energy and metallurgical) and oil demand	Coal peaks in the late 2030s; oil (liquids) peaks in the mid-2030s
Uptake of EVs in light duty vehicle segment	75% of sales in 2050

Implications of the Central Energy View scenario for BHP's commodities:

- Copper and nickel benefit from electrification, though at a slower pace, equivalent to our mid planning case.
- Oil (liquids) demand slowly increases over the next decade, hitting a plateau in the early 2030s.
- Natural gas demand grows fastest among the energy commodities and does not reach a peak pre-2050, though we still do not expect it to play a major role in baseload-power outside of regions with a cheap resource.
- Coal's losses in the OECD power mix are partially offset by its affordability advantage in lower ambition climate regions, and by on-going needs from harder-to-abate processes like steel and cement.

Source: BHP Group, "BHP Climate Change report 2020", p.14

East Japan Railway Company

Based on an analysis of the demographics of the service area, the company analyzes the impact on passenger revenue using the Shared Socio-economic Pathways (SSP) scenario.

Moreover, in the estimation of physical risks caused by natural disasters, by taking into account the increase in the probability of flood occurrence based on the IPCC's Representative Concentration Pathways (RCP) scenario in addition to the flooding scenario of major rivers in the region, the increased financial impact is quantitatively estimated in the pattern of with and without flood control measures.

Details of strategies

(1) Awareness of risks and opportunities

We recognize that there are two kinds of risks and opportunities associated with climate change. One is physical, for example, the intensification of weather-related disasters caused by global warming. The other is a transition in the social environment, for example, the strengthening of regulations and technological progress aimed at mitigating climate change The main risks and opportunities that we have identified are as follows.

Main Risks and Opportunities		Business Impact*2	Timing of Manifestation*3
Physical risks	Damage to railway facilities and equipment, and suspension of operations due to windstorms, floods, etc.	Large	Short term
	Decrease in passenger volume due to extreme weather (heavy rain, heat)	Small	Long term
Transition risks	Increased costs due to the introduction and strengthening of the carbon pricing system	Not rated	Medium term
	Decrease in passenger volume due to competition from other modes of transportation, such as electric vehicles	Large	Long term
	Decrease in passenger volume due to damage or change in tourism resources	Not rated	Long term

*2 Scale of business impact: Large: events with a financial impact of ¥500 million or more in revenues and expenses
*3 Timing of manifestation—scale of time: Short term: within one year; Medium term: more than one year but within five years; Long term: more than five years

(2) Details of scenario analysis (physical risks)

As a baseline for the analysis, passenger revenue is estimated based on future demographics, and a scenario analysis is conducted for the Transportation services business. In the Transportation services business, future passenger volume is expected to decrease due to Japan's declining birthrate and aging population, and the impact is expected to be particularly significant in rural areas. In order to ascertain the financial impact of these factors and to verify the appropriateness of our business and environmental strategies, we conducted the following scenario analysis for fiscal 2051.

Scenario Analysis Methodology (Overview)

(1) Estimated change in future passenger revenue trends based on business area demographic projection + (2) Estimated financial impact of severe weather disasters = (3) Financial impact

(1) Estimated passenger revenue trends based on business area demographic projections

We estimated changes in passenger revenue up to fiscal 2051 based on data such as the Shared Socioeconomic Pathways (SSPs) data on population*4 and gross domestic product (GDP)*5, which are used across a range of fields in climate change research (Graph 1, see page 60). There was approximately 11% difference in the population estimate for fiscal 2051 between the scenario of Sustainability (SSP1), which is our goal, and the opposing scenario of Regional Rivalry (SSP3), and a ¥350 billion difference in estimated passenger revenue (Graph 2, page 60). Our estimate of passenger revenue is based on projections for the post-COVID-19 era.

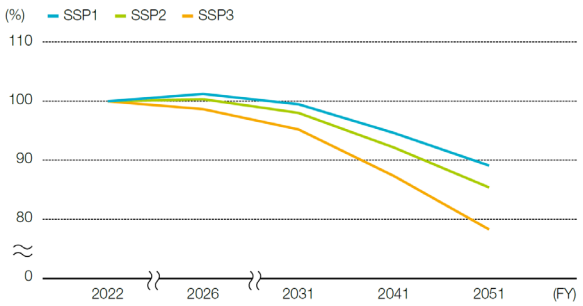
Shared Socioeconomic Pathways (SSPs)

Scenario	State of Domestic Society	Birth Rate	Mortality Rate
SSP1 (2°C)	Sustainability: Development of renewable energy and environmental technology, urban concentration, compact development with robust networks	High	Moderate
SSP2 (Middle)	Middle of the Road: Maintain the status quo, current trends progress relatively unchanged	Moderate	Moderate
SSP3 (4°C)	Regional Rivalry: Uniform population decline, depopulation of regional areas	Low	Moderate

Source: East Japan Railway Company, "JR East Group Report 2022", p.59

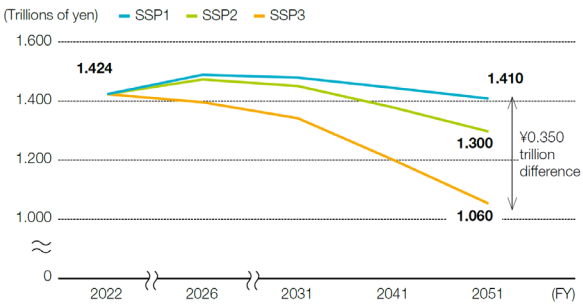
(1) Estimated Passenger Revenue Trends Based on Business Demographic Projections (continued)

Graph 1: Estimated Population of Our Business Area by Scenario



Estimates of future population in our business areas based on Japanese SSP population estimates by municipality, GDP and other data

Graph 2: Trends in Passenger Revenue by Scenario



Estimated future passenger revenues by SSP based on future population estimates within our business areas

*4 Socioeconomic Scenarios
*5 Population data source: Japanese SSP Population Estimates by City, Town, and Village, National Institute for Environmental Studies (NIES)
GDP data source: International Institute for Applied Systems Analysis (IIASA)

(2) Estimation of financial impact of severe weather disasters

Since most of our major railway assets and lines with large passenger revenues are concentrated in and around the Tokyo metropolitan area, a widespread disaster in this area would have a significant financial impact. We therefore selected flooding caused by the overflow of Class A rivers flowing through the Kanto region (due to projected rainfall) as a specific disaster event for scenario analysis. We conducted a quantitative assessment of the financial impact of this scenario using the inundation assumptions published by the government, the asset value of major lines, and passenger revenue trends.

1. Baseline assessment

For each of the rivers selected for evaluation, the financial impact is quantitatively evaluated in terms of the loss of passenger revenue due to planned service suspensions and the time required for restoration, as well as the cost of restoring railway assets such as stations and tracks, in the event of flooding due to planned rainfall.

2. Assessment of climate change impact

Based on the results of the baseline assessment, the financial impact of climate change up to fiscal 2051 is estimated by taking into account future changes in the probability of flooding under multiple climate change scenarios.*6

3. Verification of effectiveness of flood control measures

Based on planned rainfall, JR East is taking disaster countermeasures, both in terms of physical facilities and human responses, such as raising the height of electrical equipment considered of critical importance to operations and installing water stop plates at building openings, in accordance with the degree of importance of the facilities. In addition, we developed a decision support system on railcar evacuation and prepared a vehicle evacuation manual (see “Initiatives to address flooding” on page 42). We intend to verify the effectiveness of these measures by estimating the financial impact of climate change in each case with and without the measures, thereby assessing the loss reduction effect of the implementation of the measures.

4. Summary of analysis results

The financial impact of climate change was found to be slightly smaller in the RCP*7 2.6 (2°C increase) scenario than in the RCP8.5 (4°C increase) scenario, which was common to all rivers in the time of fiscal 2051. Also, we found that inundation measures are effective for loss reductions regardless of the climate change scenario, and that loss reductions due to vehicle evacuation are significant.

*6 Yukiko Hirabayashi et al. (2013). Global flood risk under climate change. *Nature*
*7 RCP (Representative Concentration Pathways scenario)

Source: East Japan Railway Company, "JR East Group Report 2022”, p.60

Tokyu Fudosan Holdings

In addition to the 1.5 degrees C and 4 degrees C scenarios, the IEA also discloses the 3 degrees Celsius scenarios, which are positioned as an intermediate scenario taking into account IEA's Stated Policies Scenario (STEPS) and commitments under the Paris Agreement (NDC).

Scenario Analysis ② 3°C Scenario

【Selected scenario】

This scenario assumes that all nations adhere to their NDCs, and the average global warming will be about 3°C above pre-industrial level at the end of the 21st century.

- STEP developed by IEA World Energy Outlook, reflecting policies declared by each nation.
- RTS developed by IEA Energy Technology Perspectives, consistent with each nation's existing energy and climate-related commitments including the NDCs of the Paris Agreement.
- RCP6.0 scenario developed by IPCC, consistent with global temperature rise of 2.0～3.7°C（average of 2.8°C） above pre-industrial level at the end of the 21st century(2081～2100).

◆NDC(Nationally Determined Contribution), STEPS(Stated Policies Scenario), RTS(Reference Technology Scenario)

【Summary of scenario analysis assessment 】

Compared to 1.5°C scenario, we expect financial impact over medium term(- 2030) to be lower due to slower ZEB conversion in our urban development business, but the impact from ZEB conversion is likely to persist into long-term (-2050). On the other hand, we expect to see some growth in our renewable energy business.

As for physical risk, although our resort business will experience bigger impact from faster increase in natural disasters and global warming compared to 1.5°C scenario, its financial impact can be limited given successful differentiation strategies including selecting right building locations and utilizing resort facilities during off season.

Source: Tokyu Fudosan Holdings website, "TCFD disclosure"
(https://tokyu-fudosan-hd-csr.disclosure.site/en/themes/57)

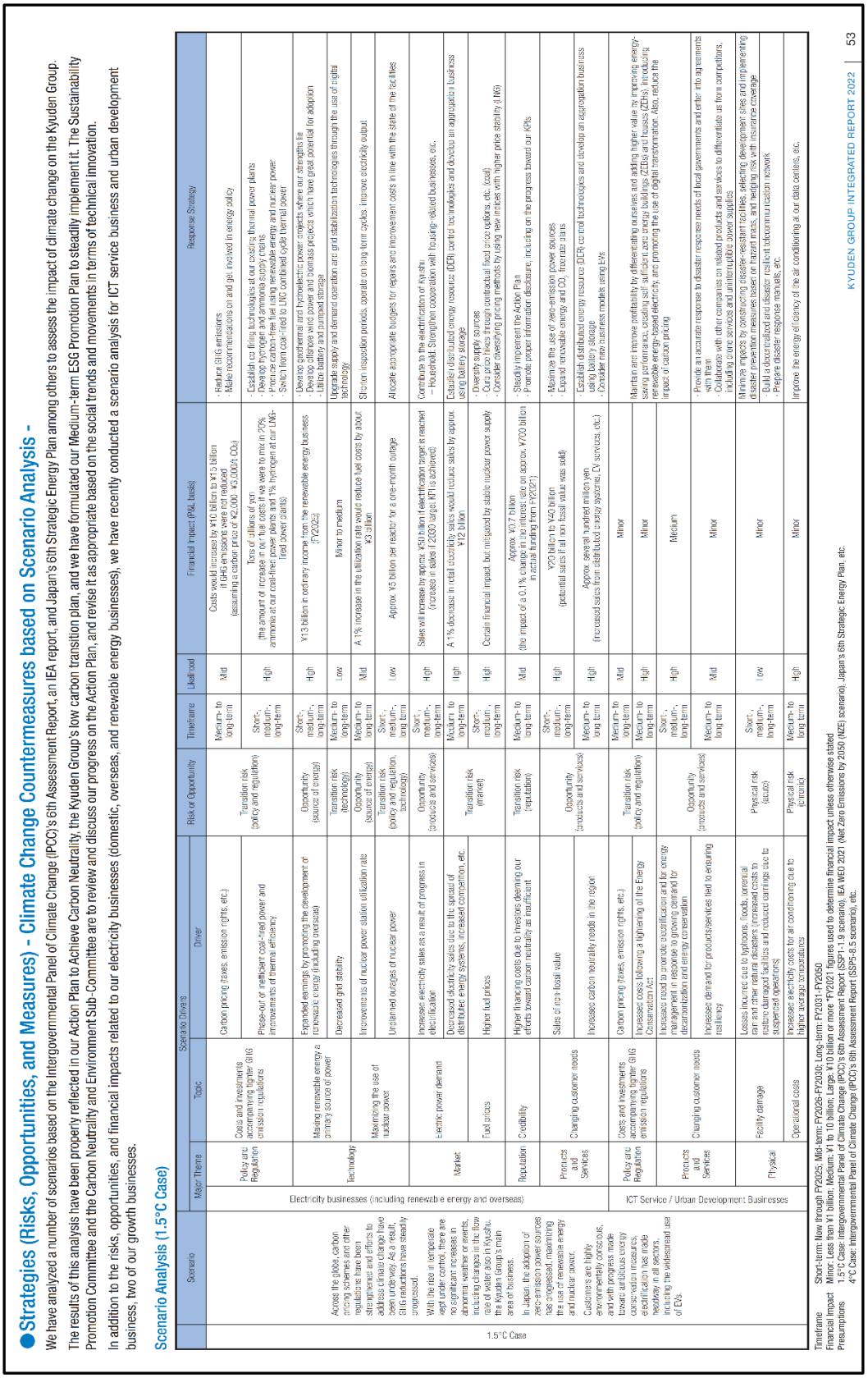
Results of Scenario analysis ② 3°C Scenario

Type	【Transition risks】Policy/regulation Market/reputation 【Opportunities】Energy source Products/services Market	【Physical risks】Acute Chronic 【Opportunities】Resilience
Time horizon	Medium/Long-term	Long-term
Description of risks/opportunities	【Risk】Increase in construction/renovation costs to meet stringent energy efficiency and ZEB/ZEH requirements 【Risk】Increase in construction/operation costs to adapt to new carbon pricing program 【Risk/Opportunity】Impact of increasing tenant demand for ZEB on rent/occupancy rate 【Risk/Opportunity】Spread of remote work reduces demand/rent/occupancy rate of office space, but increases demand for satellite office space. 【Risk/Opportunity】More homebuyers demanding ZEH intensifies competitions among products 【Opportunity】Increase in renewable energy demand	【Risk】Increase in damages to facilities by natural disasters 【Risk/Opportunity】Impact of increasing tenant demand for BCP on rent/occupancy rate 【Risk/Opportunity】Intensified competition among regions and products due to more homebuyers demanding LCP 【Risk】Rising temperature leads to shorter business season for ski resort and cost increase in golf-course operation/maintenance
Our approach	【All】Aggressively advance ZEB/ZEH conversion of new buildings, renovation of existing facilities, and early adoption of renewable energy sources to differentiate in the market 【All】Introduce internal carbon pricing to encourage each business unit to become low-carbon, so as to mitigate the impact of its nationwide implementation 【All】Cooperate with general contractors in reducing CO_2 emission before and during construction, so as to mitigate the impact of carbon pricing 【Urban development】Anticipate spread of remote work and develop satellite office space 【Resort 】Utilize locally available natural energy sources 【Renewable energy】Expand renewable energy business to meet increasing demand	【All】Select right building locations and work with tenants/occupants in improving BCP/LCP to differentiate 【Resort】To defferentiate from competitors, operate resort facilities off-season, concentrate investment in ski resorts in high latitude areas with high snowfall, use heat-tolerant golf course turfgrass
Financial impact	【Urban development】 Medium-high over medium-/long-term: Slower ZEB conversion, hence more gradual impact on building investment 【Residential】 Medium-low: Adequate response to market demand 【Resort】 Medium-low: Introduction of renewable energy sources 【Renewable energy】 Medium-high positive impact: Steady increase in demands	【All】 Medium-low: Cost increase for renovation/repair, but successful differentiation leads to revenue growth 【Resort】 Medium: Selection of right locations and successful differentiation measures offset some of the significant revenue decrease due to shorter business season and limited areas suitable for ski

Source: Tokyu Fudosan Holdings website, "TCFD disclosure"
(https://tokyu-fudosan-hd-csr.disclosure.site/en/themes/57)

Kyushu Electric Power

Scenario analysis is not limited to estimating financial impact, but also includes visualization of the potential for new business development, including overseas operations.



● Strategies (Risks, Opportunities, and Measures) - Climate Change Countermeasures based on Scenario Analysis -

We have analyzed a number of scenarios based on the Intergovernmental Panel of Climate Change (IPCC)'s 6th Assessment Report, an IEA report, and Japan's 6th Strategic Energy Plan among others to assess the impact of climate change on the Kyuden Group.

The results of this analysis have been properly reflected in our Action Plan to Achieve Carbon Neutrality, the Kyuden Group's low carbon transition plan, and we have formulated our Medium-term ESG Promotion Plan to steadily implement it. The Sustainability Promotion Committee and the Carbon Neutrality and Environment Sub-Committee are to review and discuss our progress on the Action Plan, and revise it as appropriate based on the social trends and movements in terms of technical innovation.

In addition to the risks, opportunities, and financial impacts related to our electricity businesses (domestic, overseas, and renewable energy businesses), we have recently conducted a scenario analysis for ICT service business and urban development business, two of our growth businesses.

Scenario Analysis (1.5°C Case)

Scenario	Major Theme	Topic	Scenario Drivers	Risk or Opportunity	Timeframe	Likelihood	Financial Impact (P&L basis)	Response Strategy
1.5°C Case Across the globe, carbon pricing schemes and other regulations have been strengthened and efforts to address climate change have been underway. As a result, GHG reductions move steadily progressed. With the rise in temperature kept under control, there are no significant increases in abnormal weather or events, including changes in the flow rate of water also in Kyushu, the Kyuden Group's main area of business. In Japan, the adoption of zero-emission power sources has progressed, maximizing the use of renewable energy and nuclear power. Customers are highly environmentally conscious, and with progress made toward ambitious energy conservation measures, electrification has made headway in all sectors, including the widespread use of EVs.	Electricity businesses (including renewable energy and overseas)	Policy and Regulation	Costs and investments accompanying tighter GHG emission regulations	Carbon pricing (taxes, emission rights, etc.)	Transition risk (policy and regulation)	Medium- to long-term	Mid	Costs would increase by ¥10 billion to ¥15 billion if GHG emissions were not reduced (assuming a carbon price of ¥2,000 - ¥3,000/t-CO₂)	· Reduce GHG emissions · Make recommendations on and get involved in energy policy
				Phase-out or inefficient coal-fired power and improvements of thermal efficiency		Short-, medium-, long-term	High	Tens of billions of yen (the amount of increase in our fuel costs if we were to mix in 20% ammonia at our coal-fired power plants and 1% hydrogen at our LNG-fired power plants)	· Establish co-firing technologies at our existing thermal power plants · Develop hydrogen and ammonia supply chains · Promote carbon-free fuel using renewable energy and nuclear power · Switch from coal-fired to LNG combined cycle thermal power
	Technology	Making renewable energy a primary source of power	Expanded earnings by promoting the development of renewable energy (including overseas)	Opportunity (source of energy)	Short-, medium-, long-term	High	¥13 billion in ordinary income from the renewable energy business (FY2025)	· Develop geothermal and hydroelectric power projects where our strengths lie · Develop offshore wind power and a biomass project which have great potential for adoption · Utilize battery and pumped storage
			Decreased grid stability	Transition risk (technology)	Medium- to long-term	Low	Minor to medium	Upgrade supply and demand operation and grid stabilization technologies through the use of digital technology
		Maximizing the use of nuclear power	Improvements of nuclear power station utilization rate	Opportunity (source of energy)	Medium- to long-term	Mid	A 1% increase in the utilization rate would reduce fuel costs by about ¥3 billion	Shorten inspection periods, operate on long term cycles, improve electricity output
			Unplanned outages of nuclear power	Transition risk (policy and regulation, technology)	Short-, medium-, long-term	Low	Approx. ¥5 billion per reactor for a one-month outage	Allocate appropriate budgets for repairs and improvement costs in line with the state of the facilities
	Market	Electric power demand	Increases in electricity sales as a result of progress in electrification	Opportunity (products and services)	Short-, medium-, long-term	High	Sales will increase by approx. ¥50 billion if electrification target is reached (increase in sales if 2030 target KPI is achieved)	Contribute to the electrification of Kyushu – Household: Strengthen cooperation with housing-related businesses, etc.
			Decreased electricity sales due to the spread of distributed energy systems, increased competition, etc.	Transition risk (market)	Medium- to long-term	High	A 1% decrease in retail electricity sales would reduce sales by approx. ¥12 billion	Establish distributed energy resource (DER) control technologies and develop an aggregation business using battery storage
		Fuel prices	Higher fuel prices		Short-, medium-, long-term	High	Certain financial impact, but mitigated by stable nuclear power supply	· Diversify supply sources · Curb price hikes through contractual fixed price options, etc. (coal) · Consider diversifying pricing methods by using new indices with higher price stability (LNG)
	Reputation	Credibility	Higher financing costs due to investors deeming our efforts toward carbon neutrality as insufficient	Transition risk (reputation)	Medium- to long-term	Mid	Approx. ¥0.7 billion (the impact of a 0.1% change in the interest rate on approx. ¥700 billion in actual funding from FY2021)	· Steadily implement the Action Plan · Promote proper information disclosure, including on the progress toward our KPIs
	Products and Services	Changing customer needs	Sales of non-fossil value	Opportunity (products and services)	Short-, medium-, long-term	High	¥20 billion to ¥40 billion (potential sales if all non-fossil value was sold)	· Maximize the use of zero-emission power sources · Expand renewable energy and CO_2 free-rate plans
			Increased carbon neutrality needs in the region		Medium- to long-term	High	Approx. several hundred million yen (increased sales from distributed energy systems, EV services, etc.)	· Establish distributed energy resource (DER) control technologies and develop an aggregation business using battery storage · Consider new business models using EVs
	ICT Service / Urban Development Businesses	Policy and Regulation	Costs and investments accompanying tighter GHG emission regulations	Carbon pricing (taxes, emission rights, etc.)	Transition risk (policy and regulation)	Medium- to long-term	Mid	Minor	Maintain and improve profitability by differentiating ourselves and adding higher value by improving energy-saving performance, creating self-sufficient zero energy buildings (ZEBs) and houses (ZEHs), introducing renewable energy-based electricity, and promoting the use of digital transformation. Also, reduce the impact of carbon pricing
				Increased costs following a tightening of the Energy Conservation Act		Medium- to long-term	High	Minor	
	Products and Services	Changing customer needs	Increased need to promote electrification and for energy management in response to growing demand for decarbonization and energy conservation	Opportunity (products and services)	Short-, medium-, long-term	High	Medium		
			Increased demand for products/services tied to ensuring resiliency		Medium- to long-term	Mid	Minor	· Provide an accurate response to disaster response needs of local governments and enter into agreements with them · Collaborate with other companies on related products and services to differentiate us from competitors, including drone services and uninterruptible power supplies
	Physical	Facility damage	Losses incurred due to typhoons, floods, torrential rain and other natural disasters (increased costs to restore damaged facilities and reduced earnings due to suspended operations)	Physical risk (acute)	Short-, medium-, long-term	Low	Minor	Minimize impacts by constructing disaster-resistant facilities, selecting development sites and implementing disaster prevention measures based on hazard maps, and hedging risk with insurance coverage · Build a decentralized and disaster resilient telecommunication network · Prepare disaster response manuals, etc.
		Operational costs	Increases in electricity costs for air conditioning due to higher average temperatures	Physical risk (chronic)	Medium- to long-term	High	Minor	Improve the energy efficiency of the air conditioning at our data centers, etc.

Timeframe: Short-term: Now through FY2025; Mid-term: FY2026-FY2030; Long-term: FY2031-FY2050
Financial Impact: Minor: Less than ¥1 billion; Medium: ¥1 to 10 billion; Large: ¥10 billion or more *FY2021 figures used to determine financial impact unless otherwise stated
Presumptions: 1.5°C Case: Intergovernmental Panel of Climate Change (IPCC)'s 6th Assessment Report (SSP1-1.9 scenario), IEA WEO 2021 (Net Zero Emissions by 2050 (NZE) scenario), Japan's 6th Strategic Energy Plan, etc.
4°C Case: Intergovernmental Panel of Climate Change (IPCC)'s 6th Assessment Report (SSP5-8.5 scenario), etc.

Source: Kyushu Electric Power, "KYUDEN GROUP INTEGRATED REPORT 2022", p.53

Ricoh

In disclosing financial impact, the impact level is divided into five levels according to the impact on profit and the urgency level according to the period when full-fledged impact is expected, and the disclosure incorporates quantitative factors.

With respect to acute physical risk, investment decisions for specific measures on domestic and overseas locations and supply chains is evaluated according to the scope of events.

4-3 Climate Change Risks and Countermeasures

Risks identified from the results of scenario analysis conducted in accordance with the four steps are evaluated and weighted according to risk levels in the Ricoh Group's risk management system. Since FY2021, the disclosure has been enhanced to more clearly show the impact on business by dividing risks into five levels, instead of the conventional three levels of large, medium, and small, to indicate the degree of impact and urgency. In addition, for Physical Risk 1, "Rapid increase in disasters," we have assessed each of our domestic sites, overseas sites, and supply chains to clarify the degree of impact and urgency according to the scope of the event.

Risk levels

	Degree of impact *1
1	Impact on profit: ¥1.0 billion or less
2	Impact on profit: Up to ¥20.0 billion
3	Impact on profit: Up to ¥50.0 billion
4	Impact on profit: Up to ¥100.0 billion
5	Impact on profit: Over ¥100.0 billion

×

	Level of urgency (Degree of severity, greater than 50% probability of occurrence)
1	Within 30 years
2	Within 10 years
3	Within 5 years
4	Within 3 years
5	Within 1 year

*1. Consideration of reputational damage and impact on business transactions

We reassessed the impact of natural disasters, which are increasing year by year, within our supply chain, including our own business sites, and decided to invest in specific countermeasures to address the risk of flooding in Japan, particularly by prioritizing major production sites with high risk. Natural disaster risk is an urgent issue that could have a significant impact on our business if postponed.

Although the risk of infectious diseases associated with climate change is not as urgent, once an infectious disease does occur, it can cause significant financial losses, so we will continue to strengthen our BCP. We also reaffirmed that proactive responses to climate change mitigation and adaptation have great potential to generate financial benefits in the future.

Ricoh Group's Financial Effects in FY 2021

	Impact of Climate Change on Ricoh group		Financial impact		Urgency
Transition risk	**Transition risk 1 (2°C/1.5°C scenarios*1) Carbon taxes and emissions trading systems applied to suppliers**	●Carbon pricing (carbon tax and emissions trading) was applied and the price will be passed on to raw materials, and procurement costs will increase. ●The impact of carbon pricing (carbon tax and emissions trading) on the Ricoh Group is negligible (planned GHG reduction under the SBT 1.5°C target)		2	3
	Transition risk 2 (2°C/1.5°C scenarios*1) Response to accelerated transition to decarbonized society by consumers and investors	●Due to the advanced demands for achieving the target of 1.5°C and achieving RE100, additional costs for implementing measures such as energy saving/renewable energy facility investment and switching to renewable electricity are incurred.		1	3
Physical risk	**Physical risk 1 (4°C scenarios*2) Rapid increase of natural disasters**	●Due to climate change, extreme weather has become more severe, causing more wind and flood damage than expected at primary production sites (China, Thailand, Japan) ●Production stops and sales opportunity losses due to disruption of the supply chain, etc.	Domestic offices	1	5
			Overseas offices	2	3
			Supply chain	3	1
	Physical risk 2 (4°C scenarios*2) Regional epidemics of infectious diseases	●Impact on production plans due to parts supply disruption ●Insufficient inventory due to lower operating rates at production sites ●Decrease in sales opportunities due to difficulty of face-to-face business		2	2
	Physical risk 3 (4°C scenarios*2) Declining forest resources	●Forest damage such as caused by forest fires and increase of pests due to global warming results in deterioration of stable supply of paper raw materials and leads to a rise in paper procurement costs.		1	2

*1 2°C/1.5°C scenario: A world in which average temperature increase is limited to less than 2°C over the period to year 2100.
*2 4°C scenario: A world in which the average temperature increases 4°C over the period up to year 2100.

Source: Ricoh, "Ricoh Group TCFD Report 2022", p.17

Mitsubishi Estate

The company conducts scenario analysis for two climate scenarios (1.5 - 2 degrees C scenario and 4 degrees C scenario) and qualitatively explains the main external environment and the impact on the company in each scenario. Following such explanation, the risks, opportunities and impacts identified as a result of the scenario analysis are disclosed in tabular form.

■ Scenario Analysis Results

(1) 1.5 - 2°C Scenario

Summary

Under this scenario, the government target for creation of net zero energy buildings (ZEBs)* is higher than under the 4°C scenario, and expenses for creating ZEBs are expected to increase in line with the target. On the other hand, because the technology will become widespread and the unit price of construction work will be reduced to a certain extent, the cost pertaining to the increase in area would possibly be offset by a reduction in construction costs, despite the higher number of adapted properties than in the 4°C scenario. In addition, apart from the ZEB properties that meet government targets, properties that do not have advanced environmental performance are expected to have higher vacancy rates and lower rents. The Mitsubishi Estate Group believes that proactive additional investment early on will minimize this risk, maintain competitiveness in the current market, and win the trust of customers.

In terms of physical risks, although it is assumed that natural disasters will increase in severity compared to the present, the impact will be alleviated to a certain extent compared with the 4°C scenario. Also, because Mitsubishi Estate has been working to deliver safe and secure urban development for some time and taken every measure to minimize these types of risk, the estimated amount of damage is expected to be minimal even in the event of a disaster.

* Net Zero Energy Buildings are energy-saving buildings that significantly reduce annual energy consumption while maintaining a comfortable indoor environment by adopting measures such as advanced heat insulation, solar shading, use of natural energy and high efficiency equipment, and the production of energy through solar power generation, etc.

(2) 4°C Scenario

Summary

It is assumed that government policy and legal regulations will not be tightened as much as under the 1.5 – 2°C scenario, and the cost of responding to transition risk will be relatively lower. On the other hand, with regard to ZEB compliance with government targets, the Mitsubishi Estate Group believes that compliance costs will be required to a certain extent as ZEB-related technology will not be as widespread as in the 1.5 – 2°C scenario and reductions in costs cannot be expected.

It is also expected that physical risk will increase, and the amount of damage due to natural disasters (floods, etc.) will be greater than under the 1.5 – 2°C scenario. However, as described in the 1.5 – 2°C scenario, the estimated amount of damage would likely be minimal

Source: Mitsubishi Estate, "Information Disclosure Based on TCFD Recommendations", p.7-9

(3) Risk Management

Exemplary TCFD disclosures on risk management are shown in this chapter.
(See TCFD Guidance 3.0, page 28)

Omron

Consideration of climate change-related risks as part of the company-wide risk management structure is explained in the integrated report and disclosed using flow diagrams.

Risk Management

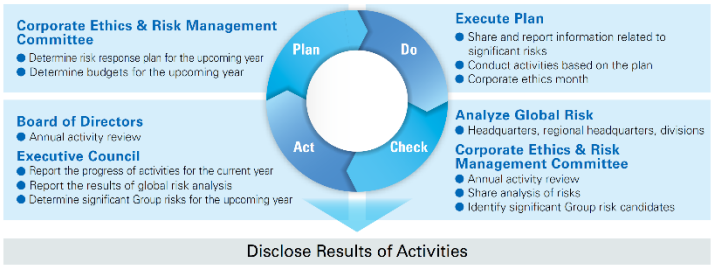
Integrated Risk Management for Supporting Global Business Activities

OMRON is implementing integrated risk management in order to manage the risks of the Group via a common framework. This is prompted by recognition that in order to rapidly respond to the faster pace of change in the operating environment and rising levels of uncertainty, we need to become more attuned to risk, detecting and addressing risks before they materialize. We are additionally considering how to equip ourselves with mechanisms enabling efficient, effective, and prompt risk decisions while still adhering to the OMRON Principles and relevant business rules in order to achieve our long-term vision SF2030.

Integrated Risk Management System and Structure

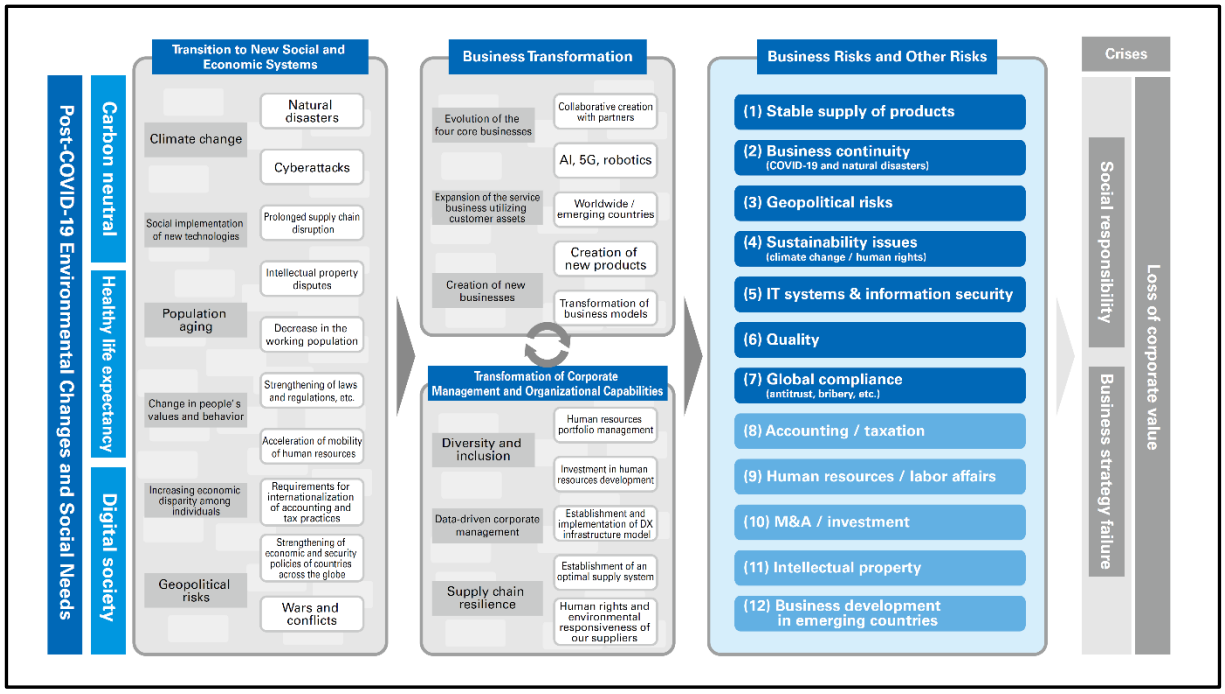
OMRON has established a PDCA cycle that is conducted throughout the year to identify changes in the business environment, analyze risks, respond to significant risks, and engage in crisis management. To promote initiatives on a global scale through a concerted effort of management and all employees, risk managers are appointed for each of headquarters, divisions, regional headquarters, and Group companies across the world.

Activity Cycle for Integrated Risk Management



Risks Surrounding Management and Businesses, and Risk Analysis

OMRON considers risks to be significant factors that must be addressed in carrying out the two transformations in SF 1st Stage: "business transformation" and "transformation of corporate management and organizational capabilities." OMRON regularly, at least once a year, conducts comprehensive analyses of the appropriateness/ sufficiency of the Group's countermeasures for major risks and actual risk cases that have occurred and ranks these risks accordingly. OMRON classifies risks that may jeopardize the Group's survival or bring severe social liability and risks that impede the achievement of important Group goals as "significant Group risks." Of these risks, risks of utmost importance to the operation of the Group are defined as S-rank risks and other significant risks are defined as A-rank risks. The updates of implementation of countermeasures and changes in risk status are monitored.



Source: OMRON, "Integrated Report 2022", p.82

MS & AD Insurance Group

Based on the results of analysis from scenarios on transition risks and physical risks due to climate change, the Group discloses in detail the management of natural catastrophe risks, control of retained amount of risk, risks such as litigation and reputation as a responsible institutional investor, and management of investment risks.

(1) Management of Natural Catastrophe Risks

The Group manages natural catastrophe risks through measuring and examining the risk levels for covered events by geography and type of disaster, using a model which incorporates engineering knowledge, mainly that relating to meteorology and architecture. Of these risks, those subject to the impacts of climate change include typhoons, floods and forest fires.

We are managing financial soundness by setting the maximum risk levels (risk limits) for the Group and for each company, using the levels of risk that occur once every 200 years as a basis in addition to large-scale natural catastrophe stress tests.

We have also been working to further refine the model based on the latest academic knowledge and the status of occurrence of natural disasters, in collaboration with external organizations that are conversant with natural disaster risks.

Additionally, we are working on such topics as incorporating the effects of climate change into stress tests and having the uncertainties of climate change reflected in the risk levels for the entire Group.

About Stress Testing

We conduct stress tests to confirm the impact of various stress events on capital and risk levels.
In order to complement the limitations of statistical methods for risk measurement, stress testing identifies portfolio vulnerabilities and identifies the need for and urgency of countermeasures by using scenarios that have been selected based on the Group's portfolio and risk profile and taking into account significant changes in the external environment.
We conduct tests based on the assumption of more severe stress, such as continuous typhoons and flooding of multiple rivers, and estimate the impact of long-term climate change on domestic typhoons, domestic flood disasters, and hurricanes in North America.

(2) Control of the Retained Amount of Natural Catastrophe Risks

Based on risk levels by geography and by disaster type, we are working to underwrite insurance appropriately, procuring reinsurance, issuing cat bonds, and accumulating contingency reserves. Through these measures we improve the financial soundness of the Group as a whole and to reduce the risk of fluctuations in profit and loss during a given period.

Group-wide Natural Catasrophe Risk Control

We are working on controlling natural catastrophe risks through an annual process to first set the Group's net retention standard for risk levels within Japan and abroad (hereinafter, "Guidelines"), develop reinsurance plans (ceding and accepting) and carry out reinsurance procurement and underwriting based on the Guidelines, and then check if the resulting risk levels remain within the scope set by the Guidelines.

Reducing Risk of Fluctuations in Profit and Loss

For natural disasters in Japan, in addition to reinsurance by MSI and Aioi Nissay Dowa Insurance respectively, we have secured joint reinsurance for both companies that targets their total, annual cumulative damage amounts. This has functioned effectively with respect to domestic natural disaster occurrences, and in 2022 we have secured reinsurance possessing a similar function, and are reducing risks of fluctuations in profit and loss.

We employ a policy concerning natural disasters in overseas markets to reduce risks and decrease the impact on periodic profit and loss by some 20%.

Source: MS & AD Insurance Group, "Climate-Related Financial Disclosures ～TCFD Report～", p.12-13

(3) Litigation Risks in Insurance Underwriting

If filings of climate related lawsuits becomes more frequent, amount of insurance payment for liability insurance covering such risks may increase as it covers indemnifications, settlements and defense costs. Major liability insurance products covering litigation risks related to climate change include the following:

Type of insurance	Coverage	litigation Risks Related to Climate Change
Premises Liability Insurance	Insurance covers monetary damages and defense costs when the insured legally becomes liable for other person's personal injury and property damage arising out of facilities owned, used or controlled by the insured or from the business activities of the insured.	Litigations claiming for insured's omitting to take measures for prevention or mitigation of damage related to climate change in the course of the insured's business activities.
Directors' and Officers' Liability Insurance (D&O Liability Insurance)	Insurance covers monetary damages, defense costs, etc. for when the insured director or officer becomes liable in a claim for damages filed for its act (or omission of act) while performing its duties as a director.	Litigation against the insured director and officer claiming on the ground for delay or deficiency in taking measures against climate change, or insufficient disclosure of information. Litigation aiming for encouraging behavior modification in relation to climate change issues are also seen.

The Group manages litigation risk relating to climate change in insurance underwriting by classifying it under one of the Group Material Risks "Climate Change," and is endeavoring to ascertain the risk situation through considering factors such as the state of underwriting of relevant insurance products and the litigation occurrence status. We also define "damage to natural capital (exhaustion of resources, deterioration of and crisis over ecosystems, and human-induced pollution and accidents that cause major damage to the environment)" as one of the Group Emerging Risks and monitor the situation thereof in order to fully understand the medium- to long-term trend of relevant risk events.

(4) As Responsible Institutional Investor

The "Japan's Stewardship Code," a set of principles for "responsible institutional investors," published by Financial Services Agency, is a code of conduct for institutional investors who invest in listed shares, etc. in Japan. As an asset owner, the Group supports its intent.

The Group has a policy of conducting "constructive dialogue (engagement) with investee companies, focusing on management issues, shareholder returns policy, and other non-financial information such as ESG from the perspective of enhancing the corporate value of the investee and promoting sustainable growth over the medium to long term, in accordance with Japan's Stewardship Code. We often confirm their response for climate change and decarbonized society in E(environment) related queries of their ESG policy.

< Examples of initiatives for engagement in relation to climate change>

Example 1	Example 2
We had a dialogue with a logistics company which is intensifying its initiative toward ESG and have exchanged views on matters such as how information disclosure should be carried out. The company is making active efforts to save energy through introducing environment-friendly vehicles and a modal shift combining transportation means of railway, vessels and trucks. We made a proposal that they disclose information such as objectives and track records of these efforts in an appropriate manner so that their initiatives can be properly evaluated by investors.	We confirmed that a company was steadily achieving a reduction in its consumption of petrochemical raw materials through reviewing the manufacturing processes for its products in terms of environment friendliness. Also, we found that, while having set the utilization ratio of biomass power generation as a target of the initiative, the company was facing issues such as reliability of supply and high costs of materials for power generation

Source: MS & AD Insurance Group, "Climate-Related Financial Disclosures ～TCFD Report～", p.13-14

Mizuho Financial Group

The risk control framework for the carbon-related sectors is explained and disclosed along with measures to control risks for both customers and the company.

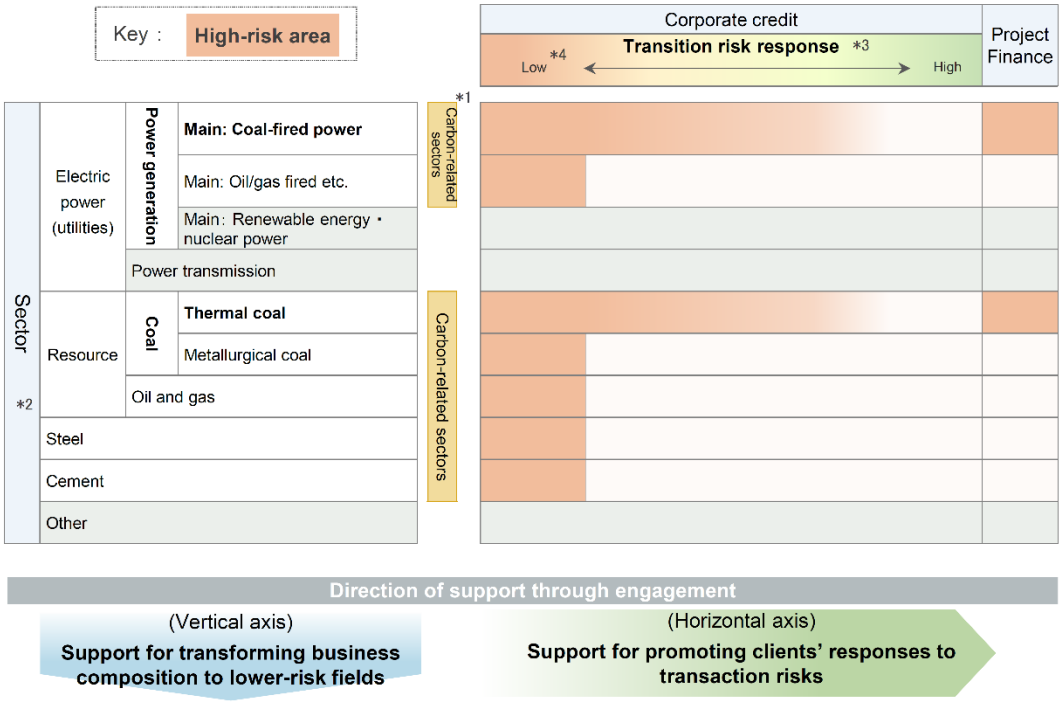
3. Risk control in carbon-related sectors

(1) Overview of risk control framework for carbon-related sectors

At Mizuho, we establish exposure control policies and control risk in high-risk areas among sectors recognized as facing transition risk at particularly high levels (carbon-related sectors).

These high-risk areas are identified by evaluating risk along two axes: (1) our clients' sectors, and (2) our clients' measures to address transition risk. Our risk evaluation determines (1) the client's sector based on the largest component in the sales/energy mix of their business activities, and (2) the client's transition risk response based on their formulation of transition strategies and targets, the level of their targets, the progress on their strategy, and similar factors (Figure 15).

Figure 15: Risk control framework for carbon-related sectors



1. Carbon-related sectors: Sectors Mizuho has recognized through a qualitative evaluation as facing transition risk at particularly high levels.
2. Sector: Companies are divided into sectors based on the largest component in the sales/energy mix of their business activities.
3. Transition risk response: Companies' responses to transition risk are confirmed through engagement. We consider willingness to take measures against transition risks, development of the strategy, setting of quantitative targets, target levels, specificity of means of achievement and status of efforts, performance and objectivity, etc.
4. Transition risk response low: Indicates no willingness to take measures against transition risk and no effective transition strategy have been confirmed.

We control risk in high-risk areas under the following exposure control policy.

- We are more thoroughly engaging with clients to support them in formulating effective strategies for transition risks, in disclosing their progress, and in embarking on business structure transformation towards a lower risk sector at an early stage.
- With the aim of facilitating business structure transformation, we provide any necessary support when we have been able to confirm that the client has set valid targets and planned an appropriate transition strategy in line with international standards.
- We carefully consider whether or not to continue our business with a client in the event that the client is not willing to address transition risk and has not formulated a transition strategy even one year after the initial engagement.
- In this way, we are reducing our exposure over the medium to long term.

Further, we are following international trends and continually striving to clarify and improve our criteria for supporting business structure transformation.

Source: Mizuho Financial Group, "Mizuho Financial Group TCFD Report", p.50

(2) Strengthened risk control in carbon-related sectors (details)

Mizuho is improving risk control in carbon-related sectors in stages (Table 9). In FY2021, we performed another qualitative evaluation of risks and opportunities. The results of the new evaluation led us to add steel and cement, which we identified as high transition risk sectors, to our list of carbon-related sectors and begin undertaking risk control in them (For details on the qualitative evaluation, see page 38).

In addition, we strengthened our handling of cases in which we do not see progress from our engagement, with the aim of raising the effectiveness of our engagement and restraining climate-related risk for both our clients and Mizuho.

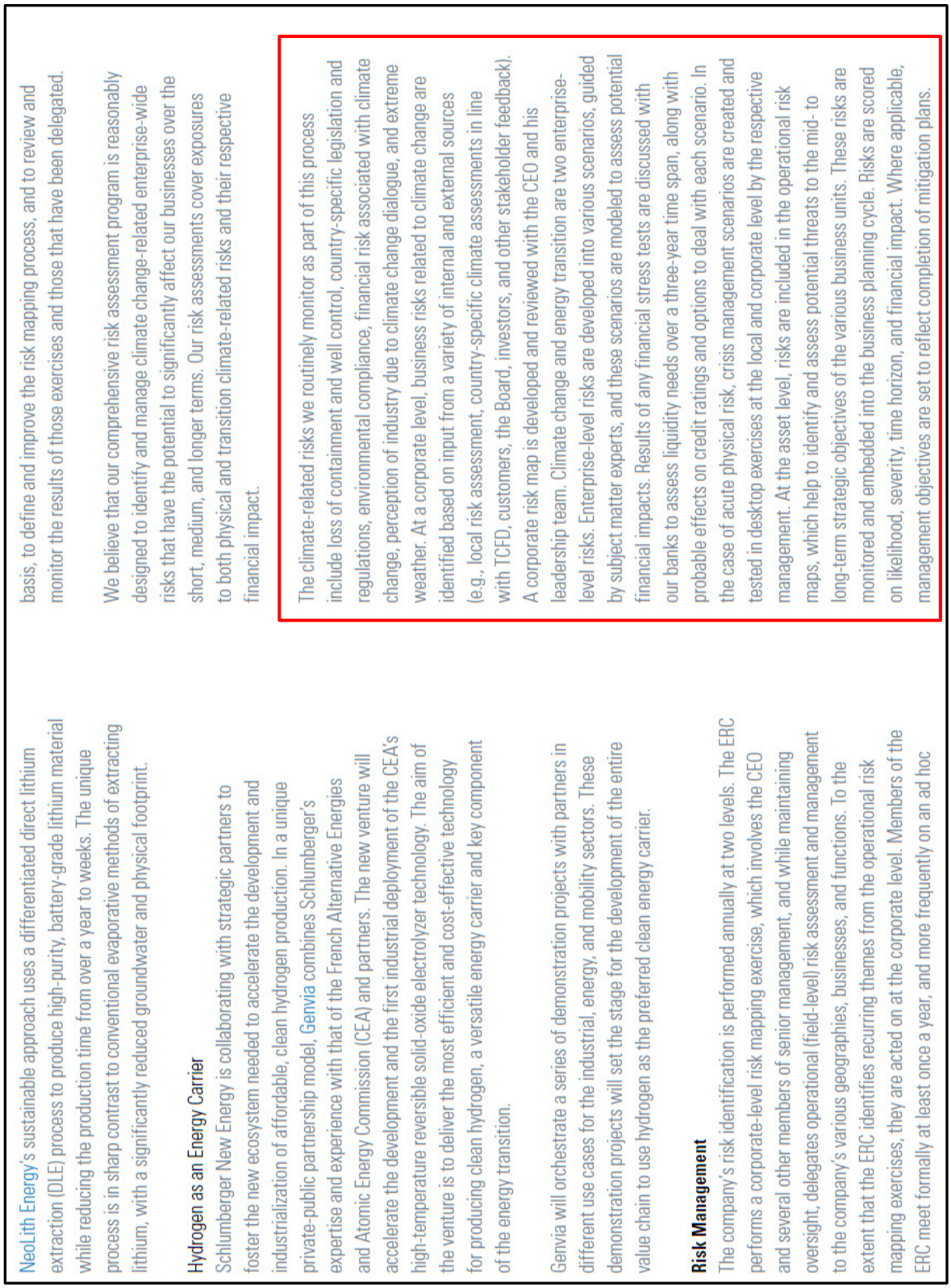
Table 9: Details of strengthened risk control in carbon-related sectors (Underlined parts indicate strengthened elements)

Item	Overview	Previous	Current
Carbon-related sectors	Sectors Mizuho has recognized through a qualitative evaluation as facing transition risk at particularly high levels	Electric utilities[14], oil, gas, and coal	Electric utilities[14], oil, gas, coal, steel, and cement
Risk control in carbon-related sectors	Framework to assess risk along two axes—our clients' sectors, and our clients' measures to address transition risk—as a means of identifying and monitoring high-risk areas	Confirm at least once a year through client engagement and evaluate risk. • Sector: Companies are divided into sectors based on the largest component in the sales/energy mix of their business activities. • Transition risk response: Based on disclosures, interviews, and other sources of information.	Continuing to implement the measures at the left. Clarified the confirmation standards we use in our engagement through our Environmental and Social Management Policy for Financing and Investment Activity. (For details on these confirmation standards, see pages 73 to 83.)
Response policy for high-risk areas	Risk control methods for exposure in high-risk areas	• We are more thoroughly engaging with clients to support them in formulating effective strategies for transition risks, in disclosing their progress, and in embarking on business structure transformation towards a lower risk sector at an early stage. • In undertaking such engagement with our clients, if a client does not make progress on addressing their transition risks even after a certain period of time, we carefully consider our transactions with the client. • In this way, we are reducing our exposure in high-risk areas over the medium to long term.	Made the following additions: • We carefully consider whether or not to continue our business with a client in the event that the client is not willing to address transition risk and has not formulated a transition strategy even one year after the initial engagement.

Source: Mizuho Financial Group, "Mizuho Financial Group TCFD Report", p.51

Schlumberger

Information for identifying climate-related risks at the corporate level (local risk assessments, country specific climate-related assessments) is provided. The company also discloses how it applies the learning from risk assessments, such as taking steps to prevent flooding (in the red frame on the next page).



NeoLith Energy's sustainable approach uses a differentiated direct lithium extraction (DLE) process to produce high-purity, battery-grade lithium material while reducing the production time from over a year to weeks. The unique process is in sharp contrast to conventional evaporative methods of extracting lithium, with a significantly reduced groundwater and physical footprint.

Hydrogen as an Energy Carrier

Schlumberger New Energy is collaborating with strategic partners to foster the new ecosystem needed to accelerate the development and industrialization of affordable, clean hydrogen production. In a unique private-public partnership model, Genvia combines Schlumberger's expertise and experience with that of the French Alternative Energies and Atomic Energy Commission (CEA) and partners. The new venture will accelerate the development and the first industrial deployment of the CEA's high-temperature reversible solid-oxide electrolyzer technology. The aim of the venture is to deliver the most efficient and cost-effective technology for producing clean hydrogen, a versatile energy carrier and key component of the energy transition.

Genvia will orchestrate a series of demonstration projects with partners in different use cases for the industrial, energy, and mobility sectors. These demonstration projects will set the stage for the development of the entire value chain to use hydrogen as the preferred clean energy carrier.

Risk Management

The company's risk identification is performed annually at two levels. The ERC performs a corporate-level risk mapping exercise, which involves the CEO and several other members of senior management, and while maintaining oversight, delegates operational (field-level) risk assessment and management to the company's various geographies, businesses, and functions. To the extent that the ERC identifies recurring themes from the operational risk mapping exercises, they are acted on at the corporate level. Members of the ERC meet formally at least once a year, and more frequently on an ad hoc basis, to define and improve the risk mapping process, and to review and monitor the results of those exercises and those that have been delegated.

We believe that our comprehensive risk assessment program is reasonably designed to identify and manage climate change-related enterprise-wide risks that have the potential to significantly affect our businesses over the short, medium, and longer terms. Our risk assessments cover exposures to both physical and transition climate-related risks and their respective financial impact.

The climate-related risks we routinely monitor as part of this process include loss of containment and well control, country-specific legislation and regulations, environmental compliance, financial risk associated with climate change, perception of industry due to climate change dialogue, and extreme weather. At a corporate level, business risks related to climate change are identified based on input from a variety of internal and external sources (e.g., local risk assessment, country-specific climate assessments in line with TCFD, customers, the Board, investors, and other stakeholder feedback). A corporate risk map is developed and reviewed with the CEO and his leadership team. Climate change and energy transition are two enterprise-level risks. Enterprise-level risks are developed into various scenarios, guided by subject matter experts, and these scenarios are modeled to assess potential financial impacts. Results of any financial stress tests are discussed with our banks to assess liquidity needs over a three-year time span, along with probable effects on credit ratings and options to deal with each scenario. In the case of acute physical risk, crisis management scenarios are created and tested in desktop exercises at the local and corporate level by the respective management. At the asset level, risks are included in the operational risk maps, which help to identify and assess potential threats to the mid- to long-term strategic objectives of the various business units. These risks are monitored and embedded into the business planning cycle. Risks are scored on likelihood, severity, time horizon, and financial impact. Where applicable, management objectives are set to reflect completion of mitigation plans.

Source: Schlumberger, "Sustainability Report 2020", p.20 (Red frame is added by the TCFD Consortium)

Climate Risk Assessments

Country-level climate risk assessments provide a practical way to understand climate-related risks and common issues across the organization. For these, we work with a leading sustainability consultant to review the impact of climate issues on our direct operations. Climate-related risks (physical and financial, including transition risks) are assessed using scenario-based analysis. While there are country-specific concerns, some commonalities across geographies are acute physical risks associated with extreme weather (e.g., storm surges, droughts, heat waves, flooding, rain, snow); chronic physical risks such as the potential impact of sea-level rise on our global footprint, water availability, and protected marine life; and transition risks such as policy and legal risks, the impact of a carbon tax on Schlumberger and our customers, the cost of electrifying our operations, and adapting our technology portfolio to changing customer preference. We have completed 75% of the work on our planned country-level climate risk assessments.

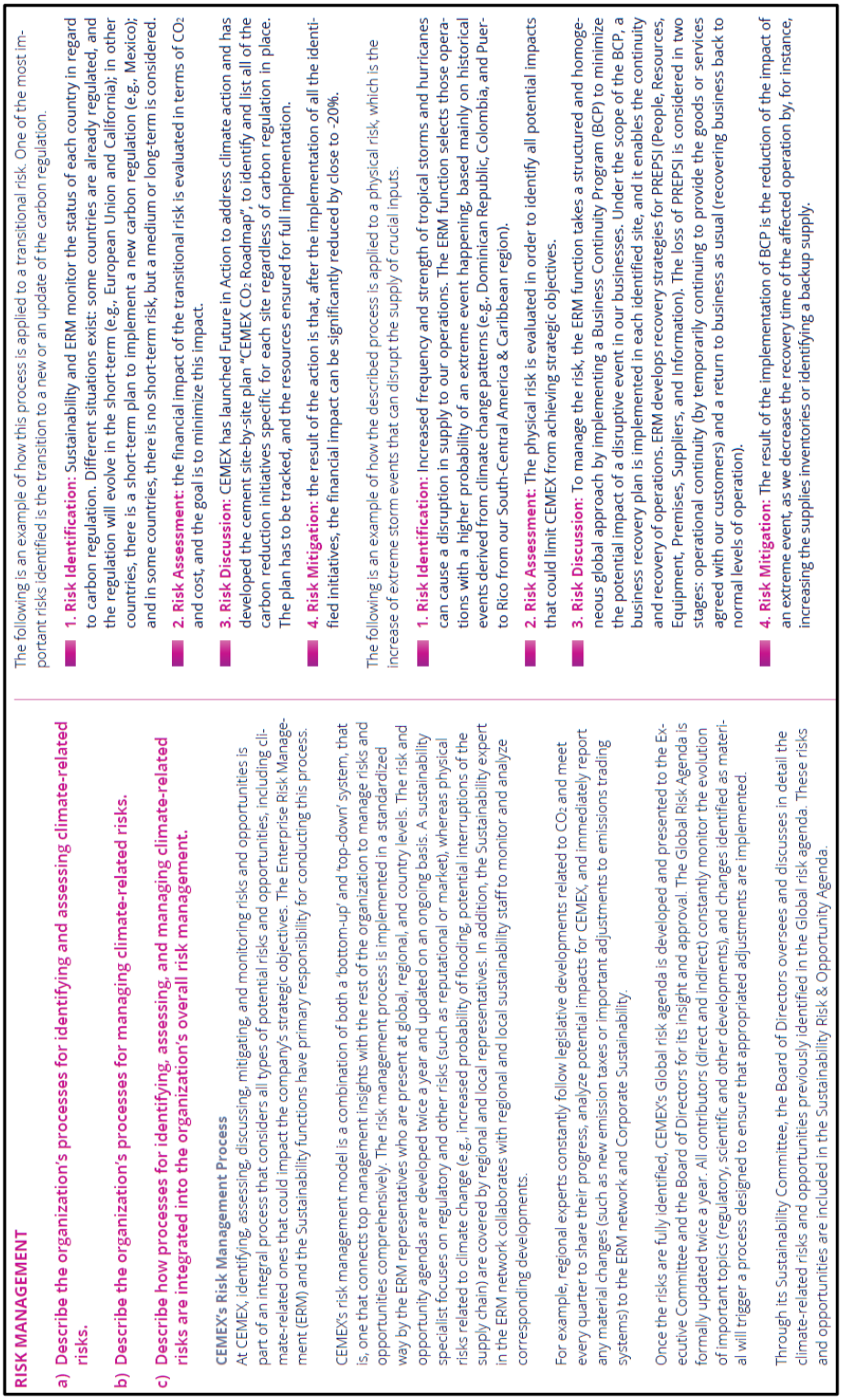
The following case studies are examples of how we apply the learnings from these assessments:

- Chronic Physical Risk Case Study: One country assessment indicated that 62% of our locations in that country could be exposed to coastal flooding due to sea-level rise by 2050. To address this risk, a decision was made—supported by the Board and Schlumberger leadership—to perform a scenario-based assessment across the entirety of the company for all locations potentially at risk of coastal flooding. This was completed in 2020 and mitigation plans were developed for all locations identified as having a potential future risk of coastal flooding (e.g., reviewing flood insurance and lease agreements), which constituted less than 1% of our global facility footprint.

Source: Schlumberger, "Sustainability Report 2020", p.21 (Red frame is added by the TCFD Consortium)

CEMEX

The inclusion of climate-related risks and opportunities in the company-wide risk management process (1. risk identification, 2. risk assessment, 3. discussion and 4. Risk mitigation, as well as monitoring) and that the process is under the supervision at the board level are disclosed using flow diagrams. Examples of management of major climate-related risks are also presented.



RISK MANAGEMENT

a) Describe the organization's processes for identifying and assessing climate-related risks.

b) Describe the organization's processes for managing climate-related risks.

c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.

CEMEX's Risk Management Process

At CEMEX, identifying, assessing, discussing, mitigating, and monitoring risks and opportunities is part of an integral process that considers all types of potential risks and opportunities, including climate-related ones that could impact the company's strategic objectives. The Enterprise Risk Management (ERM) and the Sustainability functions have primary responsibility for conducting this process.

CEMEX's risk management model is a combination of both a 'bottom-up' and 'top-down' system, that is, one that connects top management insights with the rest of the organization to manage risks and opportunities comprehensively. The risk management process is implemented in a standardized way by the ERM representatives who are present at global, regional, and country levels. The risk and opportunity agendas are developed twice a year and updated on an ongoing basis. A sustainability specialist focuses on regulatory and other risks (such as reputational or market), whereas physical risks related to climate change (e.g., increased probability of flooding, potential interruptions of the supply chain) are covered by regional and local representatives. In addition, the Sustainability expert in the ERM network collaborates with regional and local sustainability staff to monitor and analyze corresponding developments.

For example, regional experts constantly follow legislative developments related to CO_2 and meet every quarter to share their progress, analyze potential impacts for CEMEX, and immediately report any material changes (such as new emission taxes or important adjustments to emissions trading systems) to the ERM network and Corporate Sustainability.

Once the risks are fully identified, CEMEX's Global risk agenda is developed and presented to the Executive Committee and the Board of Directors for its insight and approval. The Global Risk Agenda is formally updated twice a year. All contributors (direct and indirect) constantly monitor the evolution of important topics (regulatory, scientific and other developments), and changes identified as material will trigger a process designed to ensure that appropriated adjustments are implemented.

Through its Sustainability Committee, the Board of Directors oversees and discusses in detail the climate-related risks and opportunities previously identified in the Global risk agenda. These risks and opportunities are included in the Sustainability Risk & Opportunity Agenda.

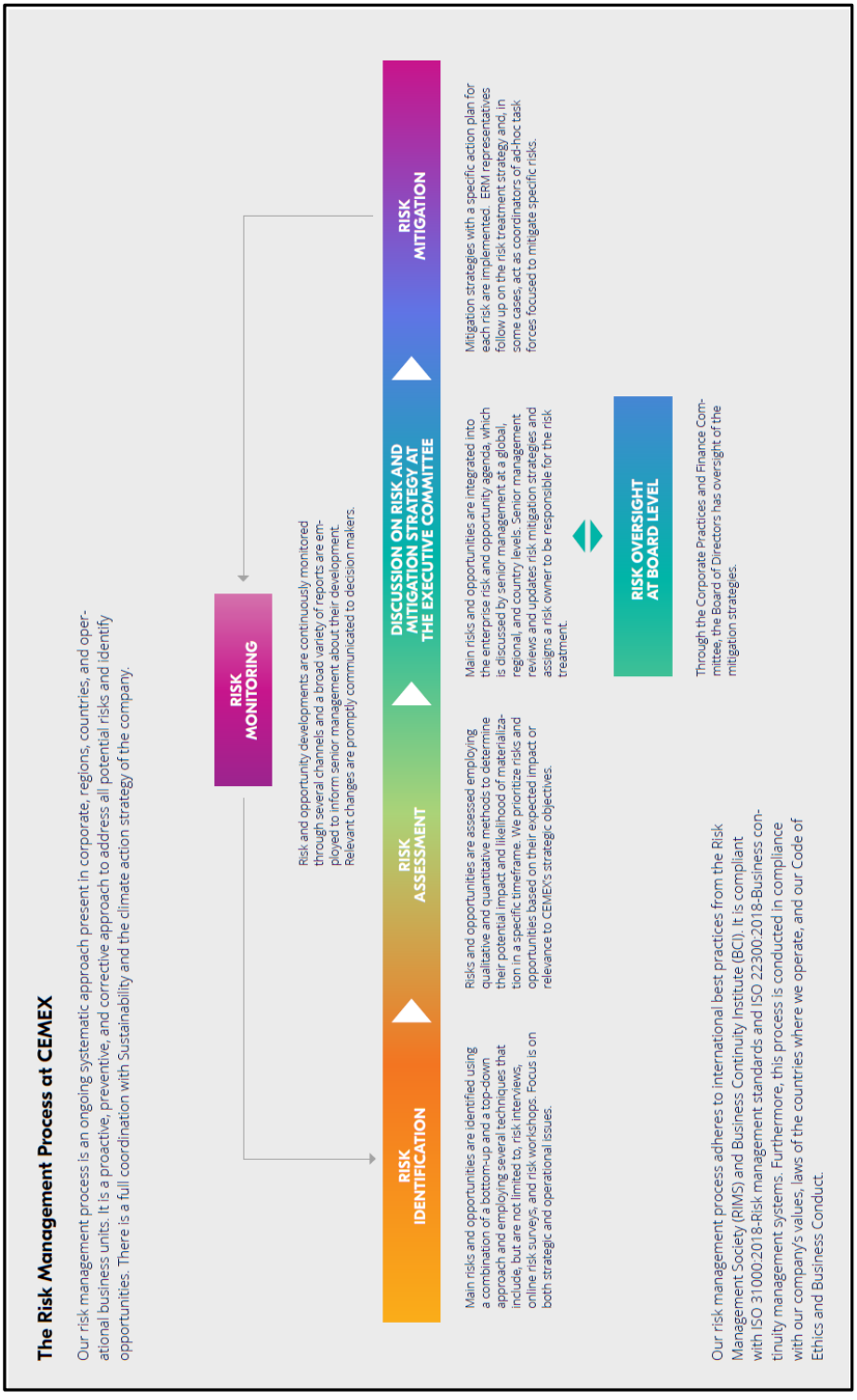
The following is an example of how this process is applied to a transitional risk. One of the most important risks identified is the transition to a new or an update of the carbon regulation.

- **1. Risk Identification:** Sustainability and ERM monitor the status of each country in regard to carbon regulation. Different situations exist: some countries are already regulated, and the regulation will evolve in the short-term (e.g., European Union and California); in other countries, there is a short-term plan to implement a new carbon regulation (e.g., Mexico); and in some countries, there is no short-term risk, but a medium or long-term is considered.
- **2. Risk Assessment:** the financial impact of the transitional risk is evaluated in terms of CO_2 and cost, and the goal is to minimize this impact.
- **3. Risk Discussion:** CEMEX has launched Future in Action to address climate action and has developed the cement site-by-site plan "CEMEX CO_2 Roadmap", to identify and list all of the carbon reduction initiatives specific for each site regardless of carbon regulation in place. The plan has to be tracked, and the resources ensured for full implementation.
- **4. Risk Mitigation:** the result of the action is that, after the implementation of all the identified initiatives, the financial impact can be significantly reduced by close to -20%.

The following is an example of how the described process is applied to a physical risk, which is the increase of extreme storm events that can disrupt the supply of crucial inputs.

- **1. Risk Identification:** Increased frequency and strength of tropical storms and hurricanes can cause a disruption in supply to our operations. The ERM function selects those operations with a higher probability of an extreme event happening, based mainly on historical events derived from climate change patterns (e.g., Dominican Republic, Colombia, and Puerto Rico from our South-Central America & Caribbean region).
- **2. Risk Assessment:** The physical risk is evaluated in order to identify all potential impacts that could limit CEMEX from achieving strategic objectives.
- **3. Risk Discussion:** To manage the risk, the ERM function takes a structured and homogeneous global approach by implementing a Business Continuity Program (BCP) to minimize the potential impact of a disruptive event in our businesses. Under the scope of the BCP, a business recovery plan is implemented in each identified site, and it enables the continuity and recovery of operations. ERM develops recovery strategies for PREPSI (People, Resources, Equipment, Premises, Suppliers, and Information). The loss of PREPSI is considered in two stages: operational continuity (by temporarily continuing to provide the goods or services agreed with our customers) and a return to business as usual (recovering business back to normal levels of operation).
- **4. Risk Mitigation:** The result of the implementation of BCP is the reduction of the impact of an extreme event, as we decrease the recovery time of the affected operation by, for instance, increasing the supplies inventories or identifying a backup supply.

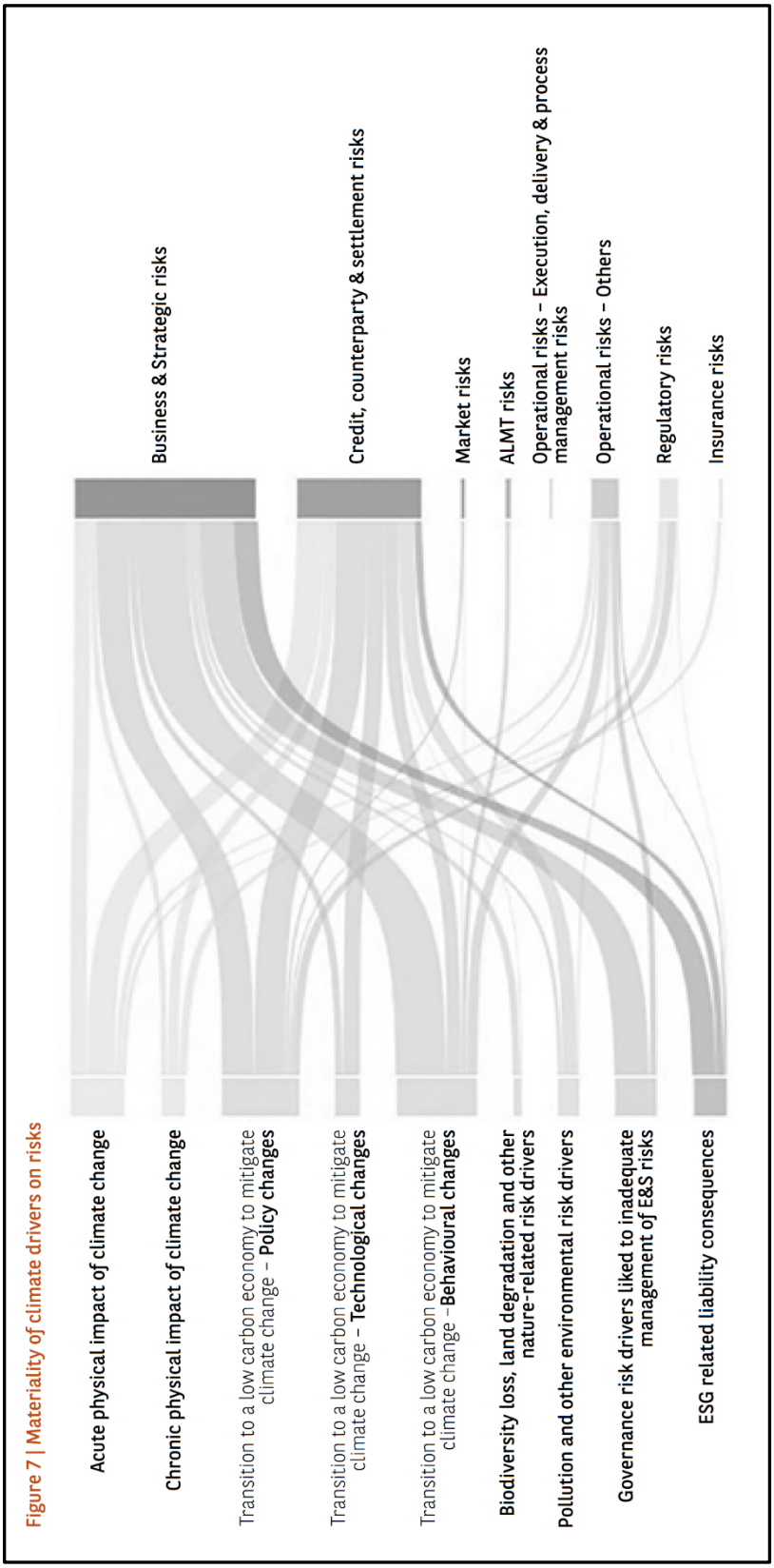
Source: CEMEX, "Integrated Report 2021", p.269



Source: CEMEX, "Integrated Report 2021", p.270

BNP Paribas

An easy-to-understand illustration of the relationship between major climate-related risks and how they relate to the company's operations is provided.



Source: BNP Paribas, "2021 TCFD Report", p.36

ITOCHU Corporation

ESG risks including climate change are included in the items to be considered when making investment decisions in the business investment process, and risk management closely related to management decision-making is performed. It is shown that physical and transition risks are handled in company-wide risk management.

Integrating Climate Risk Management into the ITOCHU Group Risk Management System

Due to the nature of our broad-based operations, ITOCHU is subject to various risks, including market risks, credit risks, and investment risks. In addition to establishing various internal committees and designated responsible departments, we have created a risk management organizational structure and management methods necessary to address these risks. This organizational structure includes outlining management regulations, investment standards, risk limits, and transaction limits, as well as establishing structures for reporting and monitoring to enable integrated Group risk management.

Climate change risks are one (environmental and social risks) of the major risks subject to Group risk management. We incorporate this risk management into the assessment methods for each business phase shown in the table below (business, product, Group companies, supply chain, strategy, and portfolio).

Evaluation Methods for Each Business Phase

Business Phase	Evaluation Method
Business start	Environmental risk assessments for new investment project (approx. 80 per year)
Business management	● Environmental risk assessments for handled products (overall supply chain evaluation) ● Group company environmental status survey (2, 3 companies per year) ● Supply chain sustainability surveys (ITOCHU and consolidated subsidiaries) ● Internal environmental audits based on ISO14001 (ITOCHU Corporation, 3 applicable Group companies) (once per year)
Review business strategy	Consider business strategy, portfolio restructuring

If risks and opportunities are identified via the evaluation methods at each business phase, we use the tool shown below in Risk Assessment & Management Activities to assess the impact of risks and opportunities on business. Risk Assessment & Management Activities include quantitative evaluations such as scenario analyses and stress tests, and qualitative evaluations such as assessments of compliance with investment policy and GHG reduction targets. Quantitative information for risks and opportunities not related to climate change is added to climate change risk and opportunity information that has been quantitatively assessed. This information is then used to analyze the level of contributions to earnings.

Source: ITOCHU Corporation website, "Climate Change (Information Disclosure Based on TCFD Recommendations)" (https://www.itochu.co.jp/en/csr/environment/climate_change/index.html)

Risk Assessment & Management Activities

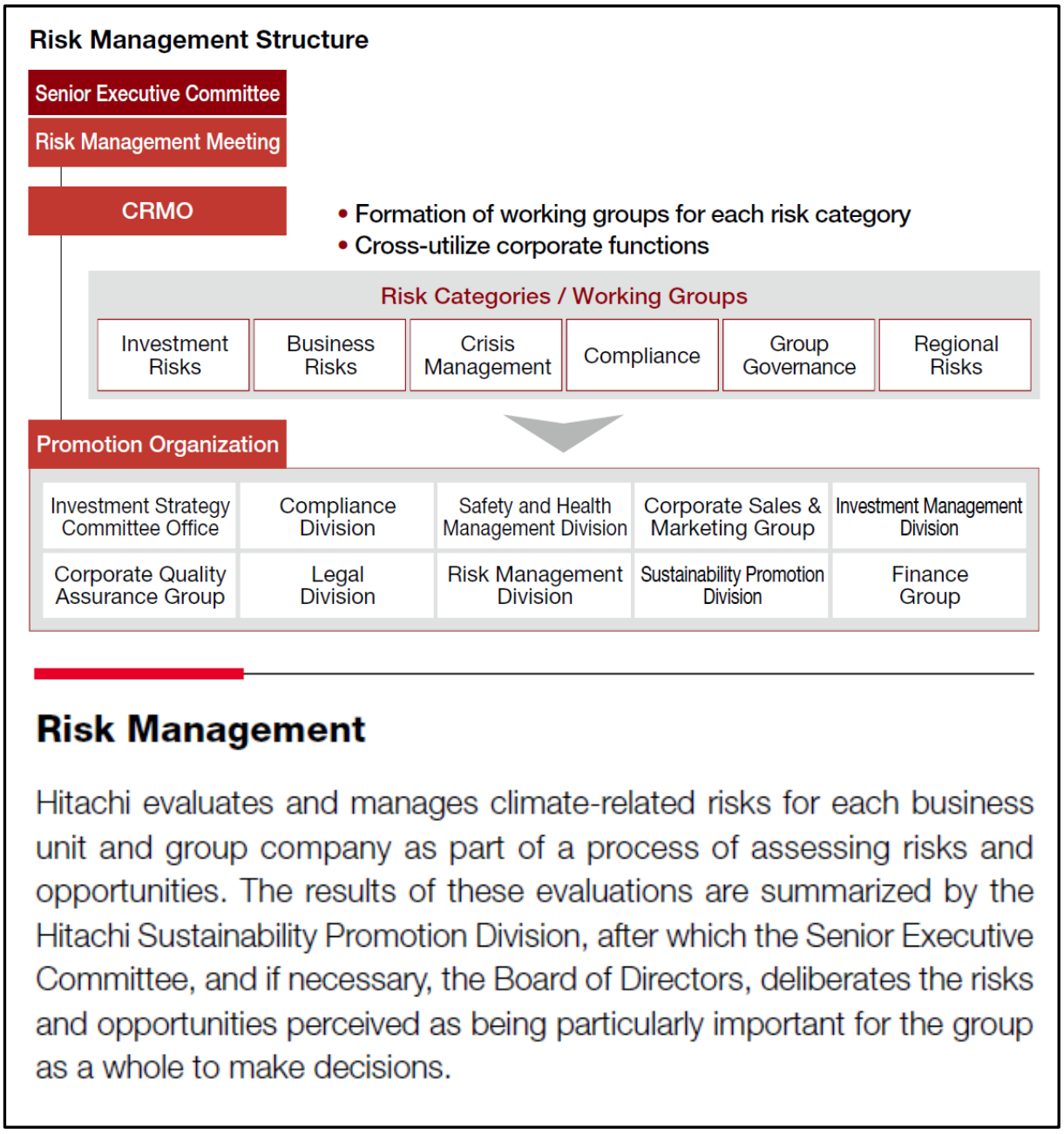
Managed Factor	Risk and Opportunity Factors (example)	Evaluation & Management Activities (example)
Market	• Decreased demand due to adoption of a carbon tax on energy (crude oil, gas, LNG) development projects • Increased LNG demand and increased demand for renewables and other new energy	• Scenario analysis • Policy on climate change in relation to investment decisions • Conformity to ITOCHU GHG reduction targets • Compliance with policy on investment and growth in new energy solutions • Earnings contributions
Regulations	• Carbon tax on international transactions for energy and fuel • Adopt volume reduction requirements and emissions trading scheme (cap and trade scheme) in country of operation • Increased thermal power generation costs at power plants due to carbon tax and CCUS requirements	• Scenario analysis • Portfolio stress test • Regulatory monitoring • Carbon prices • Conformity to ITOCHU GHG reduction targets
Technology	• Mobility electrification • Renewable energy and storage battery/lithium battery technology • CCUS, hydrogen/ammonia and other low carbon technologies • Digitized big data	• Monitoring technological trends related to risk factors • Increased investment in new energy solutions, CCUS, and new low-carbon technologies • Digitization roadmap
Physical risks	• Chronic effects (e.g., sea level rise, water scarcity increase) • Acute effects (e.g., more frequent extreme weather events)	• Regular updates to meteorological and oceanographic data for new business development / existing business risk assessments • Updates to physical impact data on food products
Reputation	• Maintaining company appeal in terms of personnel hiring • Investor awareness of climate change countermeasures • Climate-related lawsuits • Impact on acquiring licenses needed for business	• Governance for climate change issues • Ensuring transparency of performance disclosure • Communication with stakeholders (investors, initiatives, NGOs, business affiliates)

Refer to: Our risk management, including climate change, related to Company operations

Source: ITOCHU Corporation website, "Climate Change (Information Disclosure Based on TCFD Recommendations)" (https://www.itochu.co.jp/en/csr/environment/climate_change/index.html)

Hitachi

A sophisticated company-wide risk management system is implemented, including the management of risks and opportunities in investments, and climate change measures have been incorporated into it. It can be read that all risks are examined on a company-wide basis, rather than individually managing climate-related risks.



Source: Hitachi, "Hitachi Integrated Report 2022", p.75, p.79

Fuji Oil Group

Climate change response has been selected as one of the key risks for company-wide risk management and is implemented within the same framework as other risk items.

Group Significant Risks

1 Risk Identification

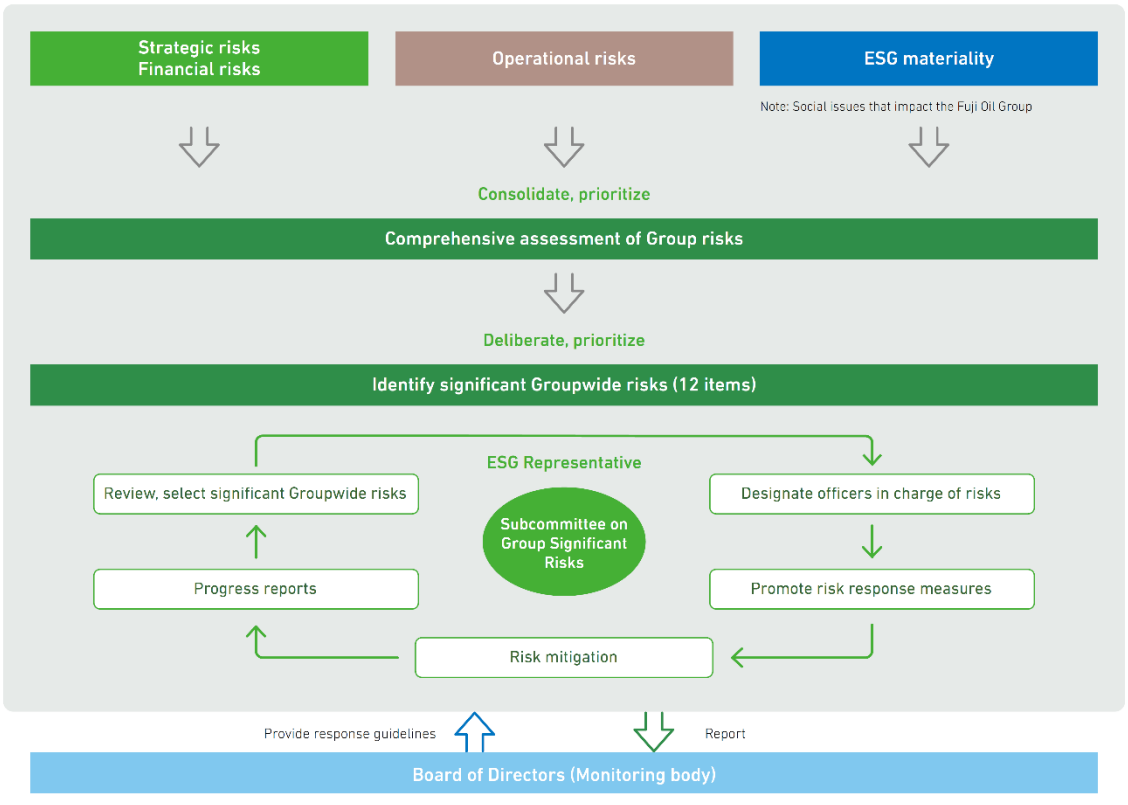
Group companies create risk maps to identify the operational risks of each company. Companies also determine strategic and financial risks at the Management Committee Meeting. The Board of Directors determines particularly significant risks by comprehensively assessing risks together with ESG materiality themes recognized as social issues that impact the Fuji Oil Group.

2 Risk Response and Monitoring

The Management Committee is positioned as the Group risk management body. The meeting designates officers in charge of each risk and outlines responses for addressing Group significant risks identified through the process described above. The committee also receives progress reports from officers in charge and reviews and selects significant risks. These risk management processes are managed by the ESG Representative, who issues regular reports to the Board of Directors. As the monitoring body, the Board of Directors confirms reports from the Management Committee and issues instructions. Furthermore, the Board of Directors deliberates on response policies for risks with the potential to have a serious impact on the Group and emerging risks, and it issues response guidelines to the Management Committee.

Group Significant Risk Identification and Response

Management Committee (Group Risk Management Body)



Source: Fuji Oil Group, "Fuji Oil Group Integrated Report 2022", p.30

	Risk	Group significant risk	Direction of risk response	Officer in charge: HR / Legal Affairs / General Affairs	ESG management	CLO	CSO	CTO
1	Risks related to fluctuations in raw material prices	Fluctuations in prices of key raw materials	• Establish a framework to manage the balance of raw materials throughout the Group, including the leveraging of mutually complementary strengths between business sites • Appropriately manage hedge transactions in accordance with Group policies concerning raw material procurement and hedge transactions					●
2	Financial and tax risk	Currency and interest rate fluctuations and international taxation risks	• Utilize derivatives to conduct variable risk hedging and use GCM (global cash management) to mitigate liquidity risks • Establish a framework to avoid risks related to international taxation and appropriately manage tax payments			●		
3	Legal and compliance risk	Non-compliance with countries' laws and regulations	• Reinforce global management structure of the legal affairs department • Implement rigorous compliance management throughout the Group	●				
4	Management risk of Group companies	Impairment of goodwill and fixed assets due to delay in progress of Group business plan and impact of changes to various rules and regulations on business	• Strengthen management and promote business through Groupwide support structure • Recruit and cultivate human resources who can manage overseas companies • Enhance asset efficiency and examine asset investment opportunities according to investment hurdle rates and exit guidelines • Ascertain trends and rapidly respond to changes in regulations and rules related to Group company location					●
5	Risks related to food safety	Incurrence of substantial costs and loss of customer trust due to significant safety- and quality-related issues	• Introduce global quality control standards and formulate safety standards • Establish a framework capable of providing technological support for rapid globalization • Develop a global support structure and standardize procedures for initial response in the case of a violation; mitigate risk through the use of insurance		●			
6-1	Supply chain-related risk	Inability to acquire key raw materials (palm oil, cocoa, soybeans, etc.); emergence of environmental and human rights issues along the supply chain	• Maintain cooperative relations with suppliers, competitors, and NGOs and promote our program to strengthen supply sources • Prevent and reduce environmental and human rights risks along the supply chain by instituting sourcing policies					●
6-2		Restrictions to existing raw materials and manufacturing methods due to changes in countries' regulations and social trends	• Disperse risks through the diversification of oil and fat raw materials • Develop oil and fat and protein processing technology that does not use chemical catalysts or solvent processing					●
7	Risks related to disasters, accidents, and infectious diseases	Discontinuance of operations/deliveries and supply chain disruptions including personal and physical damage, etc., due to natural disasters, workplace accidents, and infectious diseases	• Formulate business continuing planning (BCP) incorporating frameworks for leveraging mutually complementary strengths throughout the Group in preparation for the occurrence of natural disasters • Transfer risk through the use of insurance and prepare a response manual in the case of a crisis • Institute risk prediction activities throughout the Group and further reinforce safety management activities at Group companies with a high risk of accidents • Establish BCPs in preparation for the outbreak of infectious diseases to ensure the safety of employees, the continuance of business activities, and stable operation of the supply chain		●			
8	Risks related to information systems and security	Leakage and/or loss of information due to inadequate IT governance/security	• Strengthen information security measures by utilizing an outside expert • Implement educational and awareness-raising activities to enhance the understanding of information management			●		
9	Risks related to human resource hiring and development	Risk of shortage of human resources needed to support global business structure or human resources able of generating innovation corresponding to diverse values; risk of not being able to secure personnel necessary for factory operations	• Establish a global human resource development and participation program • Promote diversity and embrace the engagement of senior employees • Create an environment tailored to securing human resources at Group factories	●				
10-1	Business transformation/ reform-related risk	Inability to expand and/or transform businesses according to changes in the market environment	• Build promotion structure for product development and business strategies that accurately reflect market trends • Revise the business portfolio and optimize the Group's production bases to facilitate anticipated changes to the operating environment in the future					●
10-2		Delays in the development of new businesses and competitive products and technology in response to market needs	• Establish an organizational framework capable of developing products that address global and local needs and select and concentrate on research themes for utilizing limited human resources					●
10-3		Inability to make appropriate management decisions due to insufficient data sharing worldwide as a result of delays in digitization	• Introduce enterprise resource planning (ERP) software packages to realize global production management, inventory management, and production requests			●		
11-1	Environmental and human rights risks	Restrictions to business activities triggered by delayed and inadequate response to environmental issues	• Formulate and adhere to our numerical environmental targets (Environmental Vision 2030)					
			• Respond to climate change using scenario analysis based on TCFD recommendations and promote information disclosure		●			
			• Promote biodiversity initiatives					
			• Promote food loss reduction and other resource-recycling efforts					●
11-2		Limitations to business activities stemming from delayed and inadequate response to human rights issues	• Promote respect for human rights in accordance with the Fuji Oil Group Human Rights Policy, formulated in 2017 in compliance with *The UN Guiding Principles on Business and Human Rights* • Conduct human rights due diligence and, based on the findings, strengthen measures to resolve human rights issues and appropriately disclose such information • Draft and promote "human rights guidelines" for Group employees with consideration of various social issues related to human rights	●				
12-1	Country risk of regions comprising the Group's global network	Restrictions to business activities, temporary halt to operations, and supply chain disruption arising from political, economic, and social conflicts	• Revise the business portfolio through the efforts of Group headquarters • Implement PDCA activities to manage risks at Group companies		●			
12-2		Occupational fatality resulting from warfare, terrorist attacks, riots, kidnapping, or strikes	• Compile information on the areas of operation of Group companies, appoint external consultants, and enhance safety training programs for employees overseas	●				

Source: Fuji Oil Group, "Fuji Oil Group Integrated Report 2022", p.31 (Red frame is added by the TCFD Consortium)

(4) Metrics and Targets

Exemplary TCFD disclosures on Metrics and Targets are shown in this chapter, with emphasis on greenhouse gas emissions, remuneration, and financial institution metrics which are subjects of considerable discussion in recent disclosures, as well as company-specific metrics and targets.

(See TCFD Guidance 3.0, page 30)

① Greenhouse gas emissions

Marubeni Corporation

In addition to Scope 1 and Scope 2 emissions, major categories of Scope 3 emissions are disclosed, along with reduction targets.

Climate Change-Related Metrics and Targets

The Marubeni Group has formulated the following metrics and targets as part of our response to the opportunities and risks associated with climate change.

Metrics and targets	Progress and status
1. Cut Group's coal-fired power net generation capacity from FYE 3/2019 value of approx. 3GW in half by 2025, with further abatement to approx. 1.3GW by 2030, and aim for zero capacity by 2050	Approx. 2.6GW (as of March 31, 2022)
2. Expand the ratio of power generated by renewable energy source in Group's own net power supply to approx. 20% by 2023	Approx. 15% (as of March 31, 2022)
3. Expand "Green Revenue" to around ¥1,300 billion by FYE 3/2024	Approx. ¥1,080 billion (FYE 3/2022)
4. Achieve net-zero GHG emissions*1 by 2050 By 2030: (1) Reduction of 50% in Scope 1 & 2 CO_2 emissions from FYE 3/2020 level (about 1 million t-CO_2) (2) Reduction of 20% in Scope 3 CO_2 emissions (Category 15: Investment) from FYE 3/2020 level (estimated CO_2 emissions about 36 million t-CO_2*2) *1. Includes Scope 1, Scope 2, and Scope 3 (Category 15: Investment) emissions *2. This emissions volume comprises the FYE 3/2020 performance of existing investees plus the estimated emissions from projects already contracted as of March 2021 (as for power generation projects, projects for which associate investees of the Marubeni Group have entered into power purchase agreements but have not yet achieved commercial operations)	(1) Scope 1 & 2 CO_2 emissions: approx. 1.12 million t-CO_2 (FYE 3/2022) (2) Scope 3 CO_2 emissions (Category 15: Investment) *3: approx. 25 million t-CO_2 Breakdown Power generation approx. 21 million t-CO_2 Resource projects approx. 2 million t-CO_2 Other businesses approx. 1 million t-CO_2 (FYE 3/2022) *3. The sum of breakdowns may not match totals due to rounding.

Source: Marubeni Corporation, "Disclosure in Line with the Recommendations of the TCFD", p.12

Tokyu Fudosan Holdings

For Scope 3 emissions along with Scope 1 and Scope 2 emissions, reduction targets and emissions are disclosed. For Scope 3 emissions, the timeframe is stated, and for intermediate years, qualitative criteria to be achieved are listed, and KPIs are specified by integrating with related metrics.

Themes of our efforts to create value (Materialities) and KPI target for FY2030

Materiality

As of March 31,2022

E Create a sustainable environment.

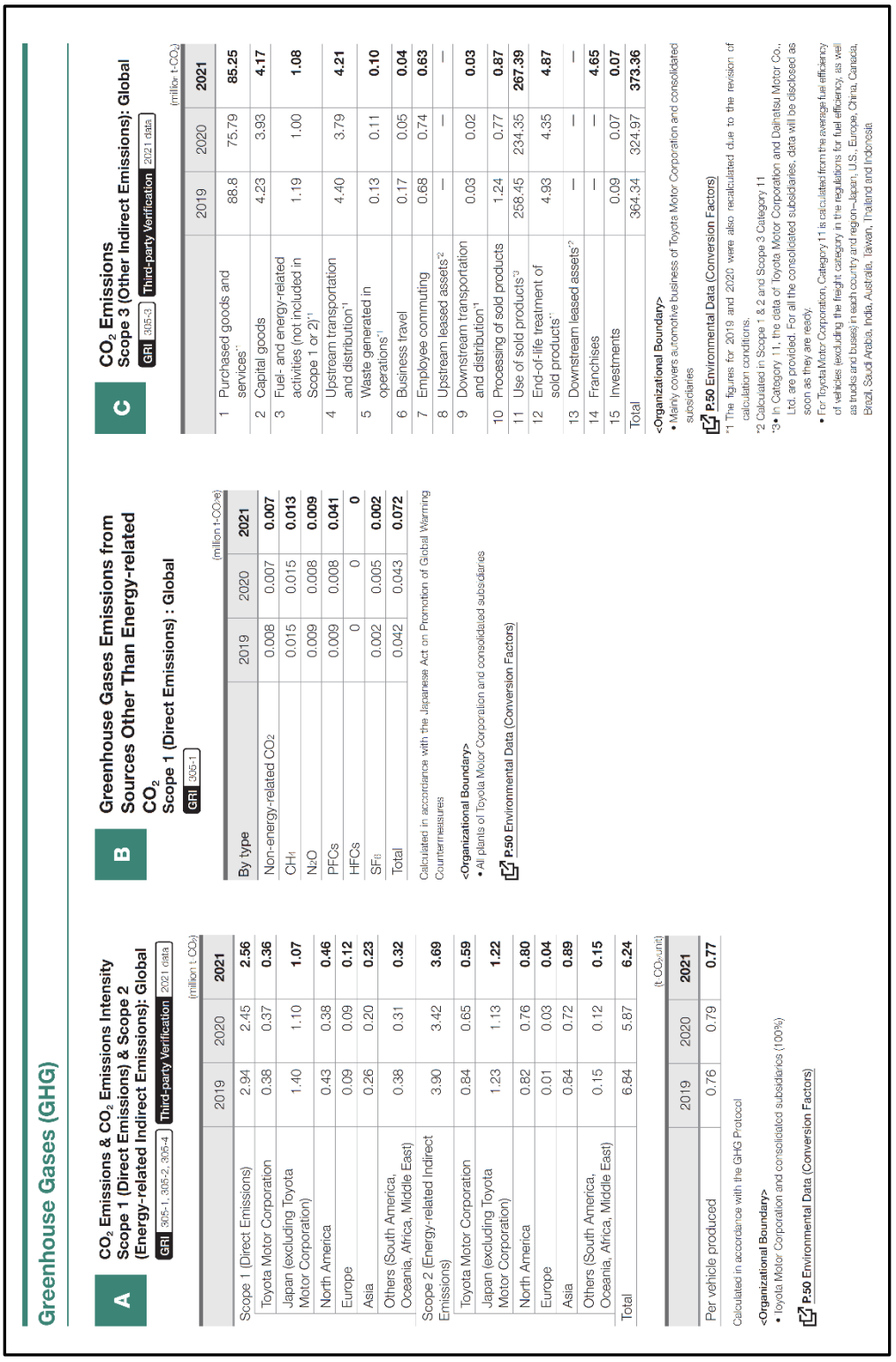
KPI		Fiscal 2030 Targets	Fiscal 2025 Targets	Fiscal 2021 results
RE100: Achieve by 2025*3		100%	100%	5.8%
Percentage of renewable energy power usage		60% or more*1	65%*2	4.0%
CO_2 emissions (compared with FY2019)				
	Scope1・2	(46.2)% (SBT certification)	Year 2023(50)%	(9.0)%
	Scope3	(46.2)% (SBT certification)	Qualitative goal : Collaborative efforts with business partners such as construction companies	(3.7)% (Calculated as of June 30, 2022)
Water usage		Reduction compared to the previous year	Reduction compared to the previous year	+7.3%
Waste volume (compared with FY2019)		(11)%	(6)%	(11.2)%
Environment certification acquisition (e.g. CASBEE, DBJ)*4		100%	70%	35.0%
Sustainable procurement (wood materials for molds)		100%	30%	0%
Midori wo Tsunagu Project (Area of Forest Protected)		3,000ha	2,400ha	2,031ha
Environmental efforts through business		100 cases or more	50 cases or more	22 cases

*1 The long-term management policy announced in 2021
*2 The mid-term management plan announced in 2022
*3 Tokyu Land Corporation
*4 Applies to large non-residential properties (with floor space of 10,000 m2 or greater) that are owned Excluding some joint projects

Source: Tokyu Fudosan Holdings website, "TCFD disclosure"
(https://tokyu-fudosan-hd-csr.disclosure.site/en/themes/57#281)

Toyota Motor Corporation

Scope 1 to Scope 3 emissions are broken down by regions (Scopes 1 and 2), GHG (Scope 1), and categories (Scope 3), along with per vehicle figure over time. From the perspective of timeliness of information disclosure, the Sustainability Data Book has been updated throughout the year since 2020.



Greenhouse Gases (GHG)

A CO_2 Emissions & CO_2 Emissions Intensity
Scope 1 (Direct Emissions) & Scope 2 (Energy-related Indirect Emissions): Global
GRI 305-1, 305-2, 305-4 | Third-party Verification | 2021 data

(million t-CO_2)

	2019	2020	2021
Scope 1 (Direct Emissions)	2.94	2.45	**2.56**
Toyota Motor Corporation	0.38	0.37	**0.36**
Japan (excluding Toyota Motor Corporation)	1.40	1.10	**1.07**
North America	0.43	0.38	**0.46**
Europe	0.09	0.09	**0.12**
Asia	0.26	0.20	**0.23**
Others (South America, Oceania, Africa, Middle East)	0.38	0.31	**0.32**
Scope 2 (Energy-related Indirect Emissions)	3.90	3.42	**3.69**
Toyota Motor Corporation	0.84	0.65	**0.59**
Japan (excluding Toyota Motor Corporation)	1.23	1.13	**1.22**
North America	0.82	0.76	**0.80**
Europe	0.01	0.03	**0.04**
Asia	0.84	0.72	**0.89**
Others (South America, Oceania, Africa, Middle East)	0.15	0.12	**0.15**
Total	6.84	5.87	**6.24**

(t-CO_2/unit)

	2019	2020	2021
Per vehicle produced	0.76	0.79	**0.77**

Calculated in accordance with the GHG Protocol

<Organizational Boundary>
• Toyota Motor Corporation and consolidated subsidiaries (100%)

P.50 Environmental Data (Conversion Factors)

B Greenhouse Gases Emissions from Sources Other Than Energy-related CO_2
Scope 1 (Direct Emissions) : Global
GRI 305-1

(million t-CO_2e)

By type	2019	2020	2021
Non-energy-related CO_2	0.008	0.007	**0.007**
CH_4	0.015	0.015	**0.013**
N_2O	0.009	0.008	**0.009**
PFCs	0.009	0.008	**0.041**
HFCs	0	0	**0**
SF_6	0.002	0.005	**0.002**
Total	0.042	0.043	**0.072**

Calculated in accordance with the Japanese Act on Promotion of Global Warming Countermeasures

<Organizational Boundary>
• All plants of Toyota Motor Corporation and consolidated subsidiaries

P.50 Environmental Data (Conversion Factors)

C CO_2 Emissions
Scope 3 (Other Indirect Emissions): Global
GRI 305-3 | Third-party Verification | 2021 data

(million t-CO_2)

		2019	2020	2021
1	Purchased goods and services*1	88.8	75.79	**85.25**
2	Capital goods	4.23	3.93	**4.17**
3	Fuel- and energy-related activities (not included in Scope 1 or 2)*1	1.19	1.00	**1.08**
4	Upstream transportation and distribution*1	4.40	3.79	**4.21**
5	Waste generated in operations*1	0.13	0.11	**0.10**
6	Business travel	0.17	0.05	**0.04**
7	Employee commuting	0.68	0.74	**0.63**
8	Upstream leased assets*2	—	—	—
9	Downstream transportation and distribution*1	0.03	0.02	**0.03**
10	Processing of sold products	1.24	0.77	**0.87**
11	Use of sold products*3	258.45	234.35	**267.39**
12	End-of-life treatment of sold products*1	4.93	4.35	**4.87**
13	Downstream leased assets*2	—	—	—
14	Franchises	—	—	**4.65**
15	Investments	0.09	0.07	**0.07**
Total		364.34	324.97	**373.36**

<Organizational Boundary>
• Mainly covers automotive business of Toyota Motor Corporation and consolidated subsidiaries

P.50 Environmental Data (Conversion Factors)

*1 The figures for 2019 and 2020 were also recalculated due to the revision of calculation conditions.
*2 Calculated in Scope 1 & 2 and Scope 3 Category 11
*3 • In Category 11, the data of Toyota Motor Corporation and Daihatsu Motor Co., Ltd. are provided. For all the consolidated subsidiaries, data will be disclosed as soon as they are ready.
• For Toyota Motor Corporation, Category 11 is calculated from the average fuel efficiency of vehicles (excluding the freight category in the regulations for fuel efficiency, as well as trucks and buses) in each country and region—Japan, U.S., Europe, China, Canada, Brazil, Saudi Arabia, India, Australia, Taiwan, Thailand and Indonesia

Source: Toyota Motor Corporation, "Sustainability Data Book 2022", p.46

A.P. Moller - Maersk

Scope 1 to Scope 3 emissions are listed, and Scope 3 emissions are shown for major categories. It is also indicated that more detailed data (emissions by category) are disclosed in the company's ESG data documents.

Source: A. P. Moller-Maersk, "Sustainability Report 2021", p.25

BHP Group

Scope 3 emissions are disclosed according to upstream / downstream sectors (the type of products sold) and according to business, over time.

Value chain emissions – performance FY2020

Table 2: Scope 3 GHG emissions by category (million tonnes CO_2-e) (1)

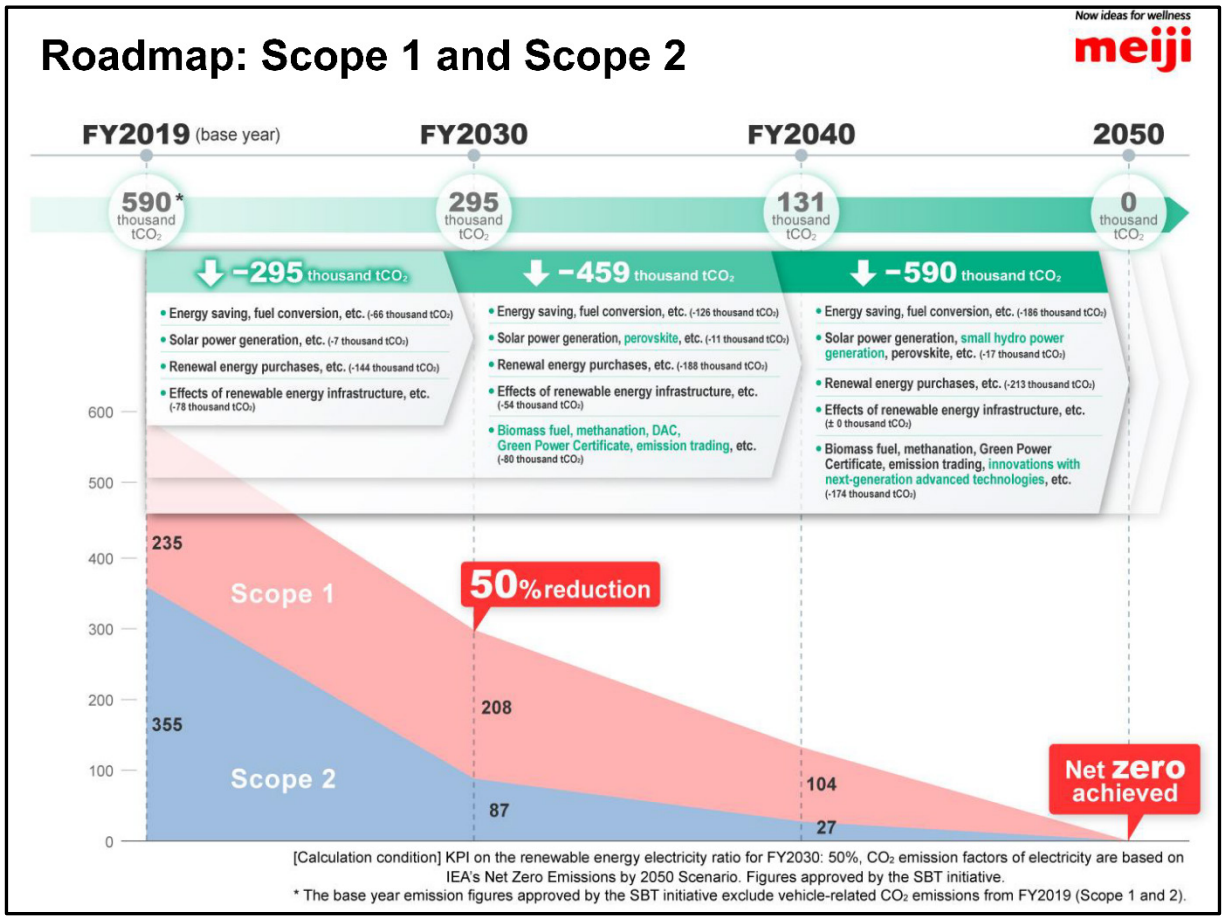
	Year ended 30 June			
	2020	2019	2018	2017
Upstream				
Purchased goods and services (including capital goods)	**16.9**	17.3	8.2	7.7
Fuel and energy related activities	**1.3**	1.3	1.4	1.4
Upstream transportation and distribution (2)	**3.8**	3.6	3.6	3.2
Business travel	**0.1**	0.1	0.1	0.1
Employee commuting	**0.2**	<0.1	<0.1	<0.1
Downstream				
Downstream transportation and distribution (3)	**4.0**	4.0	5.0	2.8
Investments (i.e. our non-operated assets) (4)	**3.9**	3.1	1.7	1.9
Processing of sold products (5)				
Iron ore processing (6)	**205.6-322.6**	197.2-299.6	201.2-317.4	194.1-309.5
Copper processing	**5.2**	5.1	5.2	4.2
Total processing of sold products	**210.8-327.8**	202.3-304.7	206.4-322.6	198.3-313.7
Use of sold products				
Metallurgical coal (6)	**33.7-108.2**	34.7-111.4	35.0-112.3	32.5-105.5
Energy coal (7)	**56.4**	67.0	71.0	72.1
Natural gas (7)	**20.6**	28.3	36.4	38.3
Crude oil and condensates (7)	**17.9**	23.3	29.6	33.1
Natural gas liquids (7)	**1.9**	2.8	4.5	5.1
Total use of sold products	**130.5-205.0**	156.0-232.7	176.5-253.8	181.1-254.1

(1) Scope 3 emissions have been calculated using methodologies consistent with the Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard. Scope 3 emissions reporting necessarily requires a degree of overlap in reporting boundaries due to our involvement at multiple points in the life cycle of the commodities we produce and consume. A significant example of this is that Scope 3 emissions reported under the 'Processing of sold products' category include the processing of our iron ore to steel. This third party activity also consumes metallurgical coal as an input, a portion of which is produced by us. For reporting purposes, we account for Scope 3 emissions from combustion of metallurgical coal with all other fossil fuels under the 'Use of sold products' category, such that a portion of metallurgical coal emissions is accounted for under two categories. This is an expected outcome of emissions reporting between the different scopes defined under standard GHG accounting practices and is not considered to detract from the overall value of our Scope 3 emissions disclosure. This double counting means that the emissions reported under each category should not be added up, as to do so would give an inflated total figure. For this reason, we do not report a total Scope 3 emissions figure. Further details of the calculation methodologies, assumptions and key references used in the preparation of our Scope 3 emissions data can be found in the associated BHP Scope 1, 2 and 3 Emissions Calculation Methodology, available online at bhp.com/climate.
(2) Includes product transport where freight costs are covered by BHP, for example under Cost and Freight (CFR) or similar terms, as well as purchased transport services for process inputs to our operations.
(3) Product transport where freight costs are not covered by BHP, for example under Free on Board (FOB) or similar terms.
(4) For BHP, this category covers the Scope 1 and Scope 2 emissions (on an equity basis) from our assets that are owned as a joint venture but not operated by BHP.
(5) All iron ore production is assumed to be processed into steel and all copper metal production is assumed to be processed into copper wire for end use. Processing of nickel, zinc, gold, silver, ethane and uranium oxide is not currently included, as production volumes are much lower than iron ore and copper and a large range of possible end uses apply. Processing/refining of petroleum products is also excluded as these emissions are considered immaterial compared to the end-use product combustion reported in the 'Use of sold products' category.
(6) Scope 3 emissions reported under the 'Processing of sold products' category include the processing of our iron ore to steel. This third party activity also consumes metallurgical coal as an input, a portion of which is produced by us. For the higher-end estimate, we account for Scope 3 emissions from combustion of metallurgical coal with all other fossil fuels under the 'Use of sold products' category, such that a portion of metallurgical coal emissions is accounted for under two categories. The low-end estimate apportions the emission factor for steel between iron ore and metallurgical coal inputs. The low-end estimate for iron ore only accounts for BHP's Scope 3 emissions from iron ore and does not account for BHP's or third party coal used in the steelmaking process. Scope 3 emissions from BHP's coal are captured in the 'Use of sold products' category under metallurgical coal.
(7) All crude oil and condensates are conservatively assumed to be refined and combusted as diesel. Energy coal, Natural gas and Natural gas liquids are assumed to be combusted.

Source: BHP Group, "BHP Climate Change report 2020", p.28

Meiji Holdings

In addition to the CO2 emission targets (Scope 1 and Scope 2) including the interim targets, a breakdown of the measures to achieve them are disclosed, indicating the practicability of the plan.



Source: Meiji Holdings, "Toward Carbon Neutrality", p.6

Asahi Group Holdings

Groupwide CO2 emission targets (Scope 1 - 3) is established for the mid-term (2030) and the long-term (2050), with metrics and targets set for each region.

Group-wide Target Asahi Carbon Zero and Targets at Each Regional Headquarters

Group-wide	**Asahi Carbon Zero—The Asahi Group's Medium- to Long-Term Target for Reducing CO_2 Emissions** Asahi Carbon Zero **2050** Reduce our CO_2 emissions in Scope 1, 2, and 3 to zero, thereby becoming carbon neutral*1 **2030** Reduce CO_2 emissions in Scope 1 and 2 by 70% (compared with 2019)*2 Reduce CO_2 emissions in Scope 3 by 30% (compared with 2019)*1
Japan	• Use renewable energy for 100% of electricity purchased at all production bases by 2025 • Reduce CO_2 emissions every year by 1% or more over the previous year
Europe	• Reduce CO_2 emissions in Scope 1 and 2 to zero by introducing renewable energy at plants, thereby becoming carbon neutral by 2030 • Shift to 100% renewable energy for the electricity used at plants by 2025
Oceania	• Reduce CO_2 emissions in Scope 1 and 2 by 50% by 2025 (compared with 2019) • Shift to 100% renewable energy for the electricity used in Australia and New Zealand by 2025
Southeast Asia	• Reduce CO_2 emissions in Scope 1 and 2 every year by 2% or more over the previous year

*1 Applicable companies: Asahi Breweries, Ltd., Asahi Soft Drinks Co., Ltd., Asahi Europe and International Ltd., and Asahi Holdings (Australia) Pty Ltd
*2 Applicable companies: Asahi Group Japan, Ltd., Asahi Europe and International Ltd., and Asahi Holdings (Australia) Pty Ltd

Source: Asahi Group Holdings, "Asahi Group TCFD REPORT", p.4

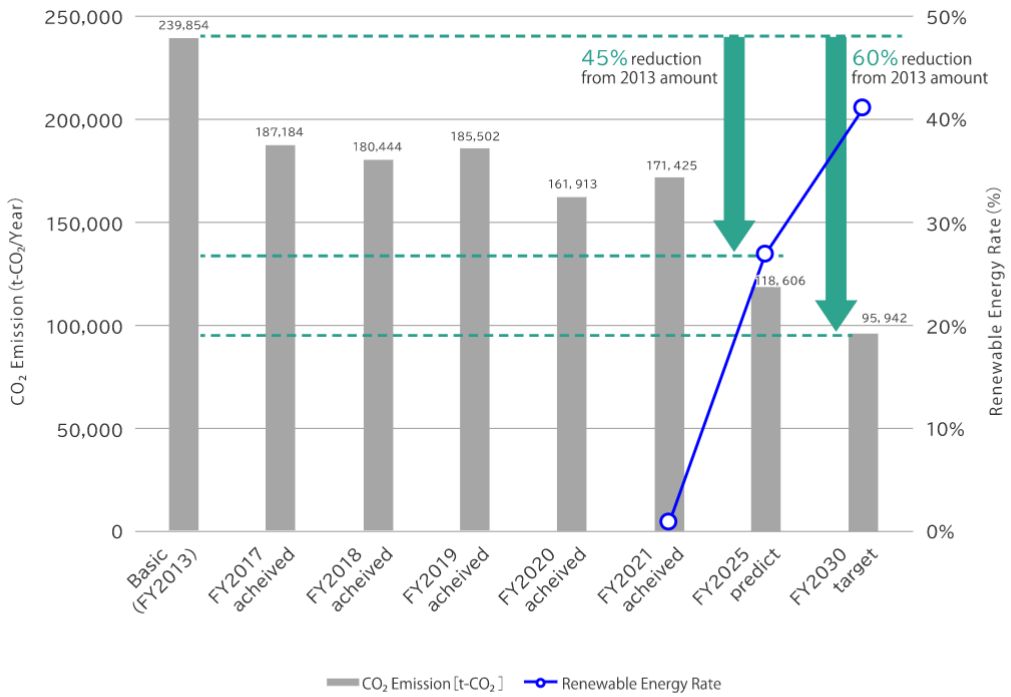
The Japan Steel Works

As a contribution toward a carbon-neutral society, the company sets and discloses not only its own CO2 emission targets (on an absolute basis) but also targets and achievements related to the introduction of renewable energy, which is a means to achieve the target.

Indicators and Goals

The "Indicators and Goals" that measure and manage risks and opportunities related to climate change have set the following goals for a carbon-neutral decarbonized society. We are continuing to develop environmentally friendly business activities, aiming for improvement activities from both aspects of "decarbonization by products" and "decarbonization of production processes". The CO_2 emission reduction target will be set from Scope1 and Scope2, and Scope3 is being calculated, and we will proceed with efforts toward publication.

Classification	Control Indication	Target (End of year)	
		2025	2030
Reduction of CO_2 emissions in production activities (Scope1, 2)	CO_2 emission reduction rate (compared to 2013)	45% Reduction	60% Reduction
Promote the introduction of renewable energy	Ratio of renewable energy to all energy used (Scope1, 2)	25% or More	40% or More



CO_2 emission (Scope1, 2) reduction and renewable energy introduction plan

※The calculation range of CO_2 emissions is the total of the Head Office and main manufacturing plants of the Group (Hiroshima Plant, Yokohama Plant, Meiki Plant, JSW M&E, JSW Actina System).

Source: The Japan Steel Works website, "Response to Climate Change" (https://www.jsw.co.jp/en/sustainability/environment/climatechange.html)

Kawasaki Heavy Industries

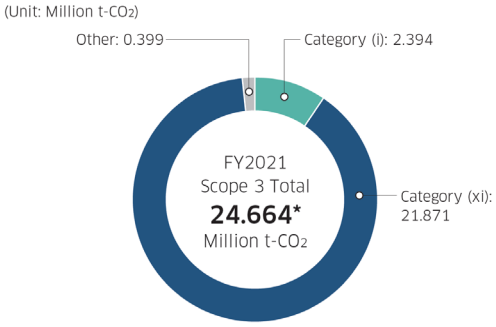
The company provides an easy-to-understand information of Scope 1 - 3 emissions, broken down by major categories and including targets.

Scope 3

/ Leading Society by Advancing Toward Zero-Carbon Ready

Scope 3 Net Zero can only be achieved when all parties in the value chain including trading partners and clients become Zero-Carbon Ready. The Company will implement the maximum possible measures concerning Scope 3 to become Zero-Carbon Ready by 2040. Specifically, for category (i), we will slash CO_2 emissions by suppliers of materials and parts by 80%, and for category (xi), we will develop a lineup of CO_2-free standard solutions in all businesses. Moreover, we will reduce CO_2 emissions by more than the Company's own Scope 3 emissions by working toward achieving a hydrogen-based society and engaging in the CCUS business, thereby contributing to the early achievement of carbon neutrality around the world.

Scope 3 Breakdown by Categories



* Kawasaki Heavy Industries (non-consolidated), Kawasaki Motors, and Kawasaki Railcar Manufacturing

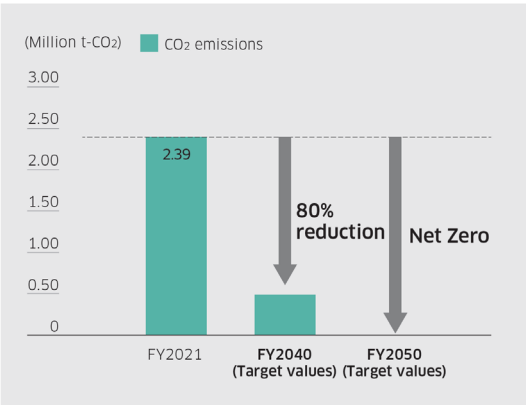
Scope 3 Category (i) Companies supplying materials and parts
About 2.4 million tons annually

Support industrial initiatives with hydrogen and CCUS solutions to further accelerate reductions

It is anticipated that many industries and companies will tackle the reduction of CO_2 emissions through various measures, including the utilization of renewables and efficient energy use.

The Company will deepen its partnerships, including sharing emissions data with business partners, offering support for CO_2 reductions and striving for early achievement of zero emissions. This will be achieved by means not limited to in-company utilization by the Group of solutions such as hydrogen power, hydrogen fuel, and other alternative fuels, as well as CCUS, but also by providing these solutions to business partners that supply materials and parts.

Scope 3 Category (i) (CO_2 reductions scenarios)



Scope 3 Category (xi) Providing customer solutions
About 20 million tons annually*

Provide CO_2-free solutions to all customers

The Group will actively further three major initiatives. The first will be the provision of CO_2-free fuels and electrical power to society, with a focus on its hydrogen business. The second will be to make a selection of choices for electrification and CO_2-free fuels available to customers utilizing our various solutions including mobility and robots. The third will be to undertake initiatives to provide carbon capture, utilization, and storage (CCUS) solutions to capture CO_2 emitted into the atmosphere, and subsequently store underground or use this CO_2.

With these three pillars, the Group will make choices available to our customers of products and services (excluding defense and related; emergency products business) that contribute to the achievement of carbon neutrality by 2040, and promote global reductions in CO_2.

* From fiscal 2021, the Group modified its calculation method to allow more accurate records of emissions levels for Scope3 category (xi). Previously, CO_2 emissions levels for products such as hydraulic machinery, manufactured as parts to be incorporated in finished products, were calculated by tallying the CO_2 emissions levels of the finished products such as construction machinery. However, from fiscal 2021, these calculations will also take into account the degree of contributions and weight ratios for final products.

Source: Kawasaki Heavy Industries, "Kawasaki Report 2022", p.29

② Metrics and targets of financial institutions

In recent years, financial institutions such as banks, asset managers, asset owners and insurance companies have shown interest in climate-related information of their portfolio, but they are also in a position to disclose their climate-related risks and opportunities. Exemplary TCFD disclosures by financial institutions are shown in this section.

Mitsubishi UFJ Financial Group

The company classifies various types of sustainable finance by category and type of finance, and discloses in chronological order along with targets.

Progress in Sustainable Finance Goals

【Unit: trillion yen】

Category		FY2019 results	FY2020 results	FY2021 results	Cumulative	FY2030 goals
Environmental	Project finances, etc. for renewable energy and environment-related businesses	0.5	0.6	0.6	5.4	18.0
	Underwriting and sales of Green Bonds.	0.5	0.5	0.5		
	Corporate loan origination for businesses contributing to climate change mitigation and adaptation, etc.	0.2	0.3	0.3		
	Financial advisory for businesses that contribute to climate change mitigation and adaptation	0.8	0.3	0.3		
	Others	0.0	0.0	0.2		
Social	Finance for social infrastructure development and regional vitalization, etc.	1.0	1.3	1.6	3.9	17.0
Others	Finance for solutions of various environmental and social issues.	0.6	1.4	3.2	5.2	
Total		3.5	4.4	6.5	14.5	35.0

(note) Totals may not add up due to rounding.

Definition of Sustainable Finance

The term "Sustainable Finance" refers to the provision of finance for the following businesses (including loans, equity investment in funds, arrangement of project finance and syndicated loans, underwriting of equities and bonds, and financial advisory services) with reference to the relevant external standards (e.g. the Green Loan Principles, Green Bond Principles, and Social Bond Principles).

Environmental Area

- Businesses contributing to the adaptation to and moderation of climate change, including renewable energy, energy efficiency improvement, and green buildings (e.g. arrangement of loans and project ¬finance for renewable energy projects, underwriting and distribution of green bonds).

Social Area

- Businesses contributing to the development of startups, job creation, and poverty alleviation
- Businesses contributing to the energizing of local communities and regional revitalization
- Fundamental service businesses, including those involved in basic infrastructure such as public transport, waterworks, and airports, and essential services such as hospitals, schools and police. (e.g. Emerging Industrial Technology Support Program, loans for regional revitalization projects such as MUFG Regional Revitalization Fund, arrangement of loans and project ¬finance for public infrastructure, underwriting and distribution of social bonds).

Source: Mitsubishi UFJ Financial Group website, “Progress in Sustainable Finance Goals” (https://www.mufg.jp/english/csr/environment/tcfd/metricsandtargets/index.html)

Citigroup

For carbon-related assets, the company discloses climate change-related risks (transition risks and physical risks) and credit exposure in four levels in the form of an easy-to-understand risk heat map.

CLIMATE RISK HEAT MAP AND CREDIT EXPOSURE

Low 1 2 3 4 High

	2020				Climate Risk[1]	
$ in Millions	Total $ Exposure	% of Total Exposure	Funded	% of Funded Exposure	Transition Risk	Physical Risk
Energy & Commodities[2]	**49,524**	**6.3%**	**15,086**	**4.4%**		
Integrated Oil & Gas	13,332	1.7%	2,844	0.8%	4	2
Oil & Gas Exploration & Production	13,316	1.7%	4,380	1.3%	4	2
Oil & Gas Storage & Transportation	7,169	0.9%	1,808	0.5%	4	2
Oil & Gas Refining & Marketing	6,976	0.9%	2,632	0.8%	4	2
Oil & Gas Equipment, Services and Drilling	4,914	0.6%	1,082	0.3%	4	2
Other	3,816	0.5%	2,340	0.7%	4	2
Power	**26,916**	**3.4%**	**6,379**	**1.9%**		
Alternative Energy	2,011	0.3%	1,015	0.3%	1	2
Electric Utilities	6,430	0.8%	2,373	0.7%	3	3
Gas Utilities	1,497	0.2%	571	0.2%	3	2
Independent Power Producers & Service Operators	2,449	0.3%	591	0.2%	3	3
Multi-Utilities	12,117	1.5%	1,343	0.4%	3	3
Water Utilities	986	0.1%	134	0.0%	2	3
Other	1,426	0.2%	353	0.1%	3	3
Transportation	**81,567**	**10.4%**	**39,417**	**11.4%**		
Autos	53,874	6.9%	25,310	7.3%	4	1
Automobile Manufacturers	16,939	2.2%	6,690	1.9%	4	1
Auto Parts & Equipment	10,476	1.3%	4,298	1.2%	4	1
Auto-Related Financing, Leasing and Rentals	23,836	3.0%	12,811	3.7%	3	1
Other	2,623	0.3%	1,511	0.4%	4	1
Aviation	10,257	1.3%	5,033	1.5%	3	3
Shipping & Maritime Logistics	9,979	1.3%	6,785	2.0%	3	2
Logistics	7,457	1.0%	2,289	0.7%	3	3
Air Freight & Logistics	1,139	0.1%	329	0.1%	3	3
Rail	1,395	0.2%	273	0.1%	1	2
Trucking	716	0.1%	427	0.1%	3	1
Other[3]	4,208	0.5%	1,260	0.4%	3	3
Industrials	**65,651**	**8.4%**	**20,705**	**6.0%**		
Building Products & Related	8,162	1.0%	2,453	0.7%	3	1
Capital Goods	42,564	5.4%	12,615	3.7%	3	3
Paper Forest Products & Packaging	7,113	0.9%	3,416	1.0%	3	1
Professional Services	7,812	1.0%	2,220	0.6%	2	1
Metals & Mining	**14,654**	**1.9%**	**6,462**	**1.9%**		
Coal[4]	592	0.1%	144	0.0%	4	4
Steel	3,526	0.4%	2,017	0.6%	3	2

Source: Citigroup, "Taskforce on Climate-Related Financial Disclosures Report 2021", p.53

$ in Millions	2020 Total $ Exposure	% of Total Exposure	Funded	% of Funded Exposure	Climate Risk[1] Transition Risk	Physical Risk
Aluminum	961	0.1%	710	0.2%	3	2
Stainless Steel	153	0.0%	116	0.0%	3	2
Nonferrous & Ferrous Minerals	2,492	0.3%	1,049	0.3%	3	2
Other[5]	6,931	0.8%	2,427	0.7%	3	2
Chemicals	**22,356**	**2.8%**	**7,969**	**2.3%**	3	2
Consumer Retail & Health	**117,633**	**15.0%**	**43,467**	**12.6%**		
Agricultural Products	6,723	0.9%	4,215	1.2%	3	3
Beverages	8,889	1.1%	3,566	1.0%	1	3
Food Products	14,373	1.8%	6,752	2.0%	3	2
Tobacco	3,176	0.4%	717	0.2%	1	3
Health Care Equipment & Services	35,504	4.5%	8,658	2.5%	1	1
Household & Personal Products	9,167	1.2%	3,617	1.1%	2	2
Retail	20,577	2.6%	7,662	2.2%	2	1
Hotels, Restaurants & Leisure	4,951	0.6%	1,997	0.6%	1	2
Other	14,273	1.8%	6,283	1.8%	3	3
Real Estate	**65,392**	**8.3%**	**43,285**	**12.6%**		
Commercial Real Estate	46,232	5.9%	30,070	8.7%	2	3
Residential Real Estate	19,160	2.4%	13,216	3.8%	2	3
Financial Institutions[6]	**86,257**	**11.0%**	**35,006**	**10.2%**	3	2
Insurance	**26,576**	**3.4%**	**1,925**	**0.6%**		
Life insurance	4,923	0.6%	659	0.2%	1	1
Property & Casualty Insurance	13,688	1.7%	1,110	0.3%	2	3
Reinsurance	6,324	0.8%	66	0.0%	2	3
Other	1,640	0.2%	91	0.0%	2	3
Private Bank	**109,397**	**13.9%**	**75,693**	**22.0%**	2	2
Public Sector[7]	**26,887**	**3.4%**	**13,599**	**3.9%**	3	3
Tech, Media & Telecom	**82,657**	**10.5%**	**30,880**	**9.0%**		
Media & Entertainment	13,119	1.7%	4,279	1.2%	1	1
Hardware	23,547	3.0%	10,836	3.1%	2	2
Software & Services	22,264	2.8%	5,647	1.6%	1	1
Telecom	21,341	2.7%	8,616	2.5%	1	2
Other	2,386	0.3%	1,503	0.4%	2	2
Other Industries	**9,307**	**1.2%**	**4,545**	**1.3%**	1	1
Total[8]	**784,774**	**100.0%**	**344,417**	**100.0%**		

[1] Over medium to long term
[2] In addition to this exposure, Citi has energy-related exposure within other sectors (for example, mainly energy-related state-owned entities within the Public Sector). Citi total exposure to these energy-related sectors is approximately $5.8 billion, of which approximately $3.3 billion consisted of direct outstanding funded loans, as of December 31, 2020.
[3] Includes Infrastructure, Logistics Not Assigned and Logistics Suppliers.
[4] Based on Citi's Risk Industry Classification, which differs from how Citi defines thermal coal mining companies under its ESRM Policy.

Source: Citi, "Taskforce on Climate-Related Financial Disclosures Report 2021", p.54

NatWest Group

As regards finance emissions of loan recipients, the actual results and targets (interim and final goals) are listed for each business category, and the progress made to date and the discrepancy with the targets are clearly shown.

Residential mortgages

Residential mortgages comprise 44% of the NatWest Group loans and investments at 31 December 2020 (31 December 2019: 44%). To estimate financed emissions, we used EPC data as an estimate of the underlying climate impact. EPC data is sourced from publicly available customer information for England and Wales for the year of inspection by qualified EPC surveyor. As EPC ratings only need to be updated every 10 years or after significant retrofits, at the point of sale or if leased, not all properties have current EPC ratings. Refer to section 5.2 for limitations related to EPC data.

For the purpose of calculating financed emissions estimates, EPC data has not been adjusted for any assumed energy efficiency changes since the date of collection. For Scope 2 financed emissions estimates, EPC data collected prior to 2020 and 2019 has been adjusted only for the decarbonisation of the UK power grid between the year of inspection and date of calculation of NatWest Group financed emissions. In line with the PCAF standard, we have used original Loan to Value (LTV) to calculate financed emissions. Original LTVs have been calculated based on outstanding loan balance as of calculation date divided by original property values at the time of mortgage origination. As noted in the PCAF UK 2020/21 Year 1 Report of the UK Partnership for Carbon Accounting Financials, in some cases, property valuation at origination is not available (for example, where a mortgage originated several decades ago), or is no longer appropriate, for example where further advances have been released for property improvements, or as a property is built. This has been recognised as a further area of work and enhancement in the current standard. NatWest Group is a member of the PCAF UK coalition and will continue to work with PCAF and other members of the coalition to enhance the standard.

Emissions intensity estimates

We used the IEA B2DS World pathway to estimate convergence points which requires an emission intensity reduction of 49% by 2030, based on a 2019 baseline. The key assumptions underlying the IEA B2DS World scenario and related on-going policy and technology development assumptions are:

- **Fossil fuels heating replacement** over time has the potential to influence emissions reduction in the residential mortgage sector. IEA estimates that low-carbon heating equipment (heat pumps, solar, thermal, biomass, etc) will make up 45% of global heating equipment by 2030 and 79% by 2050. As a result, fossil fuel energy consumption in heating will decrease by 17% by 2030 and 51% by 2050 relative to the IEA's baseline scenario. With the Clean Growth Strategy, updated in April 2018, the UK Government intends to phase out the installation of high carbon fossil fuel heating in new and existing buildings in areas off the gas grid, during the 2020s. Addressing the acceleration of heat pump deployment, the Government launched the Heat and Buildings strategy, published in October 2021, to support growth of the market. While the Heat and Buildings strategy has been announced, hydrogen-ready boiler standards have not yet been consulted on or published. The CCC BNZ scenario assumes 5.5 million households have heat pumps by 2030.
- In addition, **energy efficiency and electrification of home appliances** has the potential to impact emissions in residential mortgages. The UK Government has enacted legislation incentivising low-carbon heat and committed to a net-zero target for buildings. The UK Government has also committed to invest £450 million to support deployment of low-carbon heat in existing buildings, offering grants of up to £5,000 per home to replace gas boilers with heat pumps.
- **Decarbonised electricity generation**: Scope 2 emissions for residential mortgage customers arise from purchased electricity, as a result decarbonisation of electricity generation may be a significant driver of potential emissions reduction in the sector if mandatory building codes and voluntary certification drive the push for energy efficiency. The CCC projects that emissions intensity of electricity will fall from 220 gCO_2/kWh in 2019 to around 50 gCO_2/kWh in 2030, 10 gCO_2/kWh in 2035, and 2 gCO_2/kWh in 2050. The UK Government's policies to support this fall include Green Gas Support Scheme (GGSS) (to support the injection of biomethane into the gas grid), the Future Homes Standard, published in October 2019, and the Net Zero Strategy from October 2021, in which the Government committed to consulting on the potential for phasing in higher minimum energy efficiency standards.
- **Residential floor space** is expected to grow aligned to increase in population: IEA assumes that global floorspace increases by 2% each year until 2040, then 1.5% through 2060.

We summarise on-going NatWest Group work with residential mortgage customers to increase awareness and options available to support them to improve home energy efficiency through making home improvements e.g. green mortgage products in sections 3.4 and 3.5.

We will continue to develop green financial products to reward and incentivise the purchase of the most energy efficient properties, measured by their EPC, but also to allow customers to fund home improvements that increase the energy efficiency of existing properties. We will also take a proactive stance to sector engagement, working with government, as well as across the finance sector, NGOs etc.

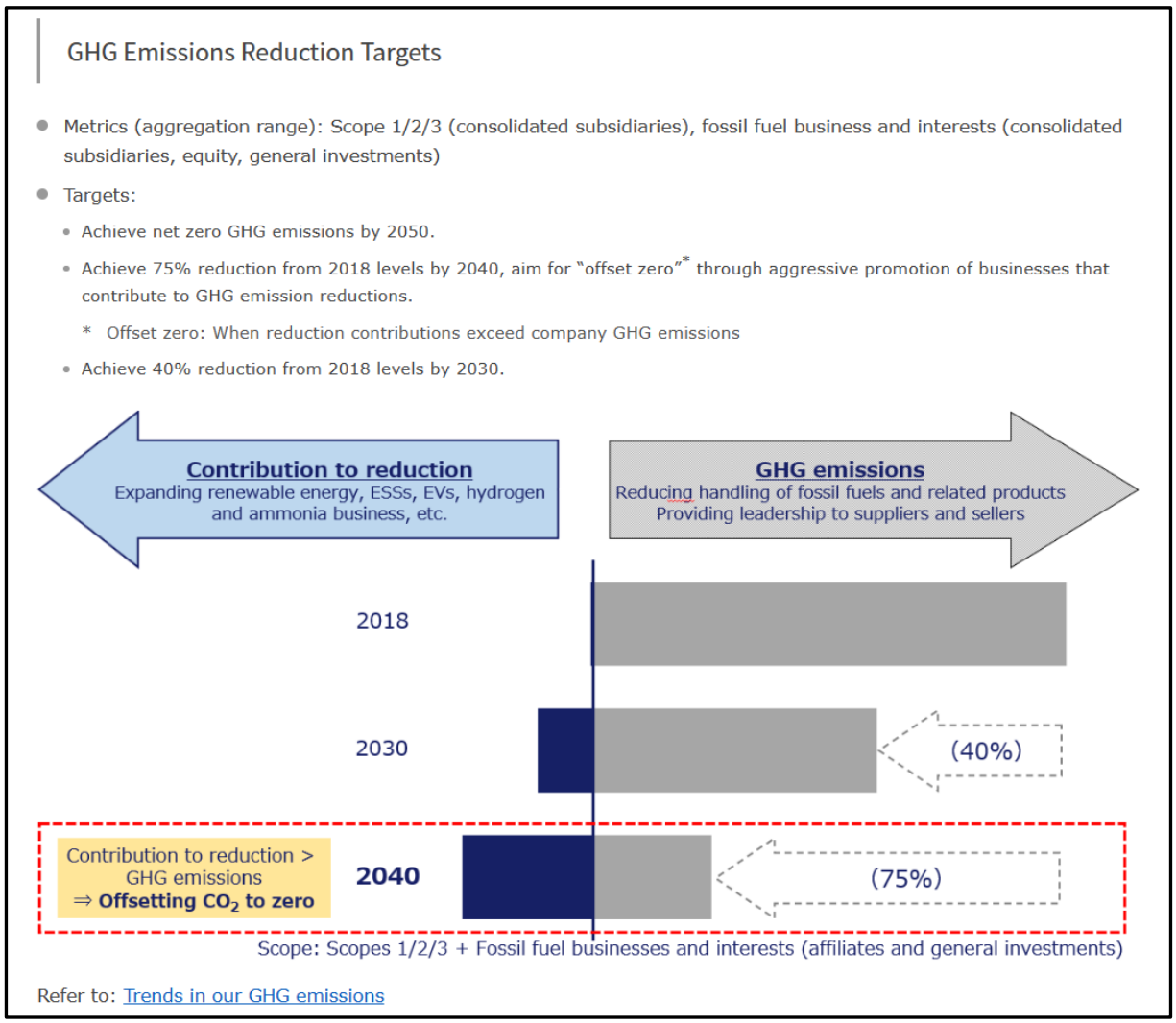
Source: NatWest Group, "2021 Climate-related Disclosures Report", p.82

③ Company-specific metrics and targets

Other exemplary disclosures of company-specific metrics and targets are shown in this section.

ITOCHU Corporation

With its diverse businesses, the company has set a GHG target of “offsetting Co2 to zero” in 2040, taking into account the contribution to reduction. In addition, major businesses related to emission reduction and contribution to reduction are listed, indicating that the target is consistent with its business strategy.



Source: ITOCHU Corporation website, "Climate Change (Information Disclosure Based on TCFD Recommendations)" (https://www.itochu.co.jp/en/csr/environment/climate_change/index.html)

Electricity Consumption Reduction Targets

	FYE 2022 Results	Single Year Target	Target for the Year Ended March 2023
Electricity Consumption of Japanese Bases of ITOCHU Corporation	Reduction of 0.8% compared with FYE 2021 levels	Reduction of at least 1% annually	Reduction of 30% compared with FYE 2011 levels
	Reduction of 48% compared with FYE 2011 levels		

Clean-tech Business Metrics and Targets (Action Plans)

We set the following metrics and targets (Action Plans) in ITOCHU Clean-tech Business as one of the main metrics (benchmarks) for climate-related risks and opportunities.

Refer to: Our clean-tech business

Source: ITOCHU Corporation website, "Climate Change (Disclosure Based on TCFD Recommendations)" (https://www.itochu.co.jp/en/csr/environment/climate_change/index.html)

Kao

Given the large share of raw material procurement in its Scope 3 emissions, the company sets its own metric of supplier activity and discloses its progress.

Decarbonization 102-12, 102-43, 308-2

Our initiatives

Efforts in raw materials procurement

Mitigation

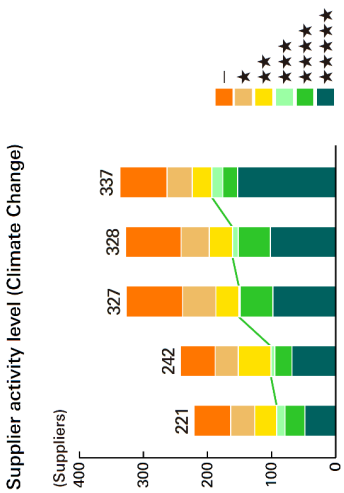
Vendor Summit

We hold the Kao Vendor Summit, which important suppliers are invited to attend, where we give presentations on our ESG-related initiatives, including decarbonization, and request suppliers' collaboration. In 2021, the Kao Vendor Summit was held remotely. The event featured presentations on the activities being implemented by Kao together with suppliers, and invitations to collaborate, with the aim of strengthening ESG-driven procurement (including joining Sedex, participation in the CDP supply chain initiative, etc.) and stable procurement (traceability of raw materials, responding to BCP requirements, etc.)

CDP Supply Chain Program (Climate Change)

In 2009, we became the first Japanese company to participate in the CDP Supply Chain Program. From 2017, in expectation that our suppliers will become more active toward promoting CO_2 reduction activities, we have been evaluating CO_2 reduction activities and have been working to provide the results of these evaluations back to our suppliers.

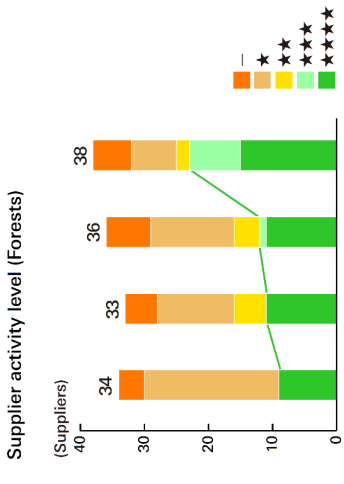
The 2021 survey results showed that the number of suppliers obtaining an evaluation of at least "three stars" had increased to 193 compared to the previous survey, indicating that the overall supplier activity level had risen. The number of suppliers who failed to respond to the survey was smaller than in the previous year. We are working on engagement to encourage a further enhancement of the level of activity implementation.



CDP Supply Chain Program (Forests)

We have participated in the CDP "Forest" Supply Chain Program since 2018. We expect suppliers providing palm oil, paper or pulp to begin sustainable and responsible procurement, which includes procurement preventing deforestation. We assess forest activity status and provide suppliers with feedback on the results of this assessment.

The 2021 survey results showed that the number of suppliers obtaining an evaluation of at least "three stars" had increased by ten compared to the previous survey, indicating that the overall supplier activity level had risen. At the same time, in regard to the roughly 15% of suppliers who failed to respond to the survey, we are continuing to work on engagement with these suppliers.



Low-carbon raw materials procurement

In collaboration with suppliers, we are working actively to adopt raw materials with lower CO_2 emissions by using plant-based and recycled plastics and thinner cardboard. This can make a substantial contribution to reducing CO_2 emissions not only in the manufacturing process but also at the time of disposal and recycling.

Furthermore, by optimizing the volume and frequency of raw materials deliveries, we are reducing CO_2 emissions in the transport of raw materials.

Source: Kao, "Sustainability Report 2022", p.104

④ Remuneration

Exemplary TCFD disclosures on remuneration, which was introduced by TCFD in 2021 as one of the cross-industry climate-related metric category to be disclosed, are shown in this section.

ENEL Group

Governance disclosures on climate change responses clearly indicate that climate-related metrics are linked to executive compensation as well as its unit (CO2 emissions per kWh of the group).

Incentives system concerning climate change

The compensation policy for 2021 provides that a significant portion of the short- and long-term variable compensation of the Chief Executive Officer/General Manager and Key management personnel will be tied to performance objectives concerning sustainability, including some specific to climate change. Specifically, with regard to:

- **the long-term variable remuneration** of the Chief Executive Officer/General Manager and executives with strategic responsibilities, for which, since 2018, a quantitative climate objective has been included, i.e. the reduction of CO_2 emissions per kWh_{eq} of the Enel Group over the next three years, with the weight of 10% of the total long-term variable remuneration. In addition, a quantitative climate target related to the percentage of consolidated net renewable installed capacity to total consolidated net installed capacity has been included since 2020, which was also confirmed in 2021 with the 10% weight of long-term variable compensation;
- **variable short-term remuneration** (MBO), the targets can include those relating to the specific company function of each manager. For example, they may include objectives related to the introduction of innovative products and services into the business for managers within Holding Functions, the development of renewable energy for managers within the Enel Green Power and Thermal Generation Global Business Line or related to energy transition solutions within the Enel X Global Retail Business Line.

Source: ENEL Group, "Sustainability report 2021", p.77,78 (Red frame is added by the TCFD Consortium)

MS & AD Insurance Group

The company discloses that climate-related initiatives are included in its executive compensation metrics, with links to relevant pages.

(6) Remuneration for Directors and Officers in Relation to Climate Issues

As part of the initiatives contributing to medium- to long-term performance, we have non-financial indicators reflected in the performance-linked remuneration for directors and officers excluding external directors. Initiatives toward climate change mitigation are included in the evaluation of these indicators.

The standard ratio of performance-linked remuneration to total remuneration is 50% for President & CEO and 30 -40% for other directors and officers.

- Policies for determining the content of individual remuneration for Directors, etc. (https://www.ms-ad-hd.com/en/group/value/corporate.html#015)

Source: MS & AD Insurance Group, "Climate-Related Financial Disclosures ～TCFD Report～", p.17

Unilever

In addition to explaining its ESG governance structure, the annual report discloses that the Sustainability Progress Index, which measures progress toward sustainability goals, including climate-related metrics, is linked to remuneration.

Performance Share Plan

Unilever's Reward Framework includes the Performance Share Plan (PSP), a long-term incentive plan that is linked to financial performance, as well as performance against sustainability targets, defined in the Sustainability Progress Index (SPI).

SPI was based on a selection of key performance indicators (KPIs) from our Unilever Sustainable Living Plan (USLP) which ran until 2020, reflected in the PSP up to and including the 2021 award.

In 2021, Unilever introduced the Compass, which includes a series of sustainability commitments for the business, and as such, we have updated the SPI incentive performance measure to reflect the Compass from the 2022 PSP award onwards.

The role of the Committee in 2021 with regards to SPI was therefore two-fold: 1) assessment of Unilever's 2020 SPI performance for 2021 reward, and 2) agreement of the new SPI targets based on the Unilever Compass.

To come to a view on Unilever's 2020 performance on its sustainability commitments, the Corporate Responsibility Committee and the Compensation Committee jointly evaluate performance against the SPI targets.

The SPI is a two-fold assessment that captures quantitative and qualitative elements. Firstly, the Committee considered the 2020 targets reported in the 2020 Annual Report and Accounts alongside performance evidenced in a number of sustainability ratings and indices. The second part of the assessment takes into account the overall sustainability performance across the strategic actions of the Unilever Compass strategy.

Following an in-depth discussion of the SPI, the Corporate Responsibility Committee agreed a performance rating which was endorsed by the Compensation Committee. This joint assessment forms part of the Compensation Committee's overall recommendation on the SPI outcome (see pages 91 to 93 for the SPI outcome for the 2021 PSP award).

In addition to the performance assessment, the Committee, also jointly with the Compensation Committee, agreed a new set of KPI, which reflect the three overarching strategic actions under the Unilever Compass: to improve the health of the planet; improve people's health, confidence and wellbeing; and to contribute to a fairer, more socially inclusive world.

These three strategic actions are underpinned by eight key pillars, all of which are represented in new SPI KPIs. Each of the eight equally weighted SPI KPIs has specific annual KPIs that are fixed for the next three years. These enable the meaningful evaluation of progress against the overarching mid- to long-term Unilever Compass target.

See page 88 for the SPI KPIs for the 2022 PSP award as agreed between the Corporate Responsibility Committee and the Compensation Committee.

Source: UNILEVER PLC, "Annual Report and Accounts 2021", p.81
(Red frame is added by the TCFD Consortium)

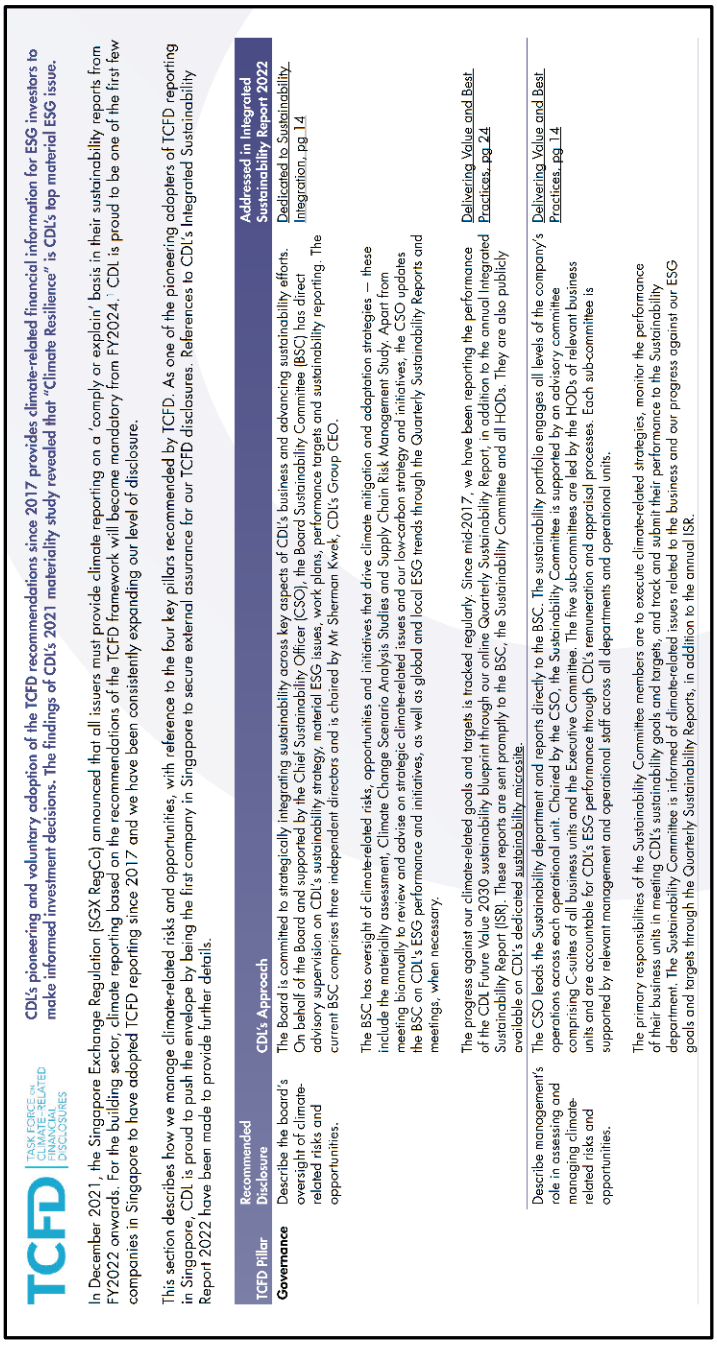
(5) Other

① Disclosure on alignment with TCFD Recommendations

Exemplary disclosures of companies' climate change responses in line with TCFD recommendations are shown in this section.

City Developments

The integrated report qualitatively discloses the four TCFD Recommendations in the form of a seven-page table. Each item also provides a link to the corresponding page in the sustainability report on quantitative information that backs up the qualitative disclosure.



TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

CDL's pioneering and voluntary adoption of the TCFD recommendations since 2017 provides climate-related financial information for ESG investors to make informed investment decisions. The findings of CDL's 2021 materiality study revealed that "Climate Resilience" is CDL's top material ESG issue.

In December 2021, the Singapore Exchange Regulation (SGX RegCo) announced that all issuers must provide climate reporting on a 'comply or explain' basis in their sustainability reports from FY2022 onwards. For the building sector, climate reporting based on the recommendations of the TCFD framework will become mandatory from FY2024. CDL is proud to be one of the first few companies in Singapore to have adopted TCFD reporting since 2017 and we have been consistently expanding our level of disclosure.

This section describes how we manage climate-related risks and opportunities, with reference to the four key pillars recommended by TCFD. As one of the pioneering adopters of TCFD reporting in Singapore, CDL is proud to push the envelope by being the first company in Singapore to secure external assurance for our TCFD disclosures. References to CDL's Integrated Sustainability Report 2022 have been made to provide further details.

TCFD Pillar	Recommended Disclosure	CDL's Approach	Addressed in Integrated Sustainability Report 2022
Governance	Describe the board's oversight of climate-related risks and opportunities.	The Board is committed to strategically integrating sustainability across key aspects of CDL's business and advancing sustainability efforts. On behalf of the Board and supported by the Chief Sustainability Officer (CSO), the Board Sustainability Committee (BSC) has direct advisory supervision on CDL's sustainability strategy, material ESG issues, work plans, performance targets and sustainability reporting. The current BSC comprises three independent directors and is chaired by Mr Sherman Kwek, CDL's Group CEO. The BSC has oversight of climate-related risks, opportunities and initiatives that drive climate mitigation and adaptation strategies – these include the materiality assessment, Climate Change Scenario Analysis Studies and Supply Chain Risk Management Study. Apart from meeting biannually to review and advise on strategic climate-related issues and our low-carbon strategy and initiatives, the CSO updates the BSC on CDL's ESG performance and initiatives, as well as global and local ESG trends through the Quarterly Sustainability Reports and meetings, when necessary. The progress against our climate-related goals and targets is tracked regularly. Since mid-2017, we have been reporting the performance of the CDL Future Value 2030 sustainability blueprint through our online Quarterly Sustainability Report, in addition to the annual Integrated Sustainability Report (ISR). These reports are sent promptly to the BSC, the Sustainability Committee and all HODs. They are also publicly available on CDL's dedicated sustainability microsite.	Dedicated to Sustainability Integration, pg 14 Delivering Value and Best Practices, pg 24
	Describe management's role in assessing and managing climate-related risks and opportunities.	The CSO leads the Sustainability department and reports directly to the BSC. The sustainability portfolio engages all levels of the company's operations across each operational unit. Chaired by the CSO, the Sustainability Committee is supported by an advisory committee comprising C-suites of all business units and the Executive Committee. The five sub-committees are led by the HODs of relevant business units and are accountable for CDL's ESG performance through CDL's remuneration and appraisal processes. Each sub-committee is supported by relevant management and operational staff across all departments and operational units. The primary responsibilities of the Sustainability Committee members are to execute climate-related strategies, monitor the performance of their business units in meeting CDL's sustainability goals and targets, and track and submit their performance to the Sustainability department. The Sustainability Committee is informed of climate-related issues related to the business and our progress against our ESG goals and targets through the Quarterly Sustainability Reports, in addition to the annual ISR.	Delivering Value and Best Practices, pg 14

Source: City Developments, "INTEGRATED SUSTAINABILITY REPORT 2022", p.114

J - Oil Mills

The company became a TCFD supporter in November 2020 and has been disclosing climate-related information in line with TCFD recommendations since 2021. The integrated report describes the roles and structure of top management, risks and opportunities from a company-wide perspective, and provides concise and comprehensive disclosure of four items. For more information, including scenario analysis results, a link to the website is provided.

Value Creation Platform > Reducing Environmental Impact

Response to the Task Force on Climate-related Financial Disclosures (TCFD)

In November 2020, we expressed our support for the Task Force on Climate-related Financial Disclosures' (TFCD's) recommendations and joined the TCFD consortium. We established a cross-company project team to promote information disclosure in line with the disclosure items proposed by the TCFD's recommendations.

Governance

The Sustainability Committee works on reducing environmental impacts and addressing sustainability issues, including making efforts to achieve decarbonization. It has launched a cross-company TCFD project with a director as the project owner, and is promoting information disclosure based on the TCFD's recommendations. Under the aforementioned sustainability promotion system, we are working on specific initiatives to reduce our environmental impact across the entire company, from procurement to production, logistics, and sales, mainly through the Sustainable Procurement and Environment Subcommittee, which is under the Sustainability Committee.

Sustainability Promotion System

Board of Directors
Report / Supervision/Instruction
Management Committee
Coordinate
Management Risk Committee
• Compliance Subcommittee
• Risk Management Subcommittee
Sustainability Committee
• Sustainable Procurement and Environment Subcommittee
• Human Rights Subcommittee
• Sustainable R&D Subcommittee
TCFD Project
Business activities

Risk management

We have established a Management Risk Committee, chaired by the president and CEO, which reports to the Board of Directors and the Management Committee twice a year. The Management Risk Committee manages key company-wide risks, including climate change, from a short- to medium-term perspective, and works to prevent and mitigate them.

The risks and opportunities that our business is exposed to due to climate change are managed by the Sustainability Committee and the TCFD project team from a medium- to long-term perspective as part of our Sustainability Promotion System. In FY2021, we conducted a scenario analysis using existing documents and other publicly available information as information sources, conducted a financial impact assessment of the identified risks and opportunities, and examined measures to address these challenges. The TCFD Project team provides a quarterly report of the discussions to the Board of Directors and the Management Committee. The Board of Directors provides instructions or advice as needed and monitors any developments.

Going forward, we will continue to expand and deepen the scope of our analysis to minimize risks and maximize opportunities to bolster our resilience.

Strategy

Climate change risks and opportunities identified

We see climate change as a key business risk in terms of business continuity and have analyzed the risks and opportunities for the below 2°C and 4°C scenarios. In addition to climate change, we also see the increasing severity of typhoon damage resulting from global warming as a risk factor.

Assumptions

Scenario	The below 2°C and 4°C scenarios are projections of how much average temperatures will increase from before the industrial revolution to the end of the 21st century, according to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), which is influential in international negotiations and provides the scientific basis for global warming response measures. The scenario with the lowest temperature increase (SSP1-1.9 scenario) projects an approximate increase of around 1.4°C, while the scenario with the highest temperature increase (SSP5-8.5 scenario) projects an increase of around 4.4°C.
Applicable period	Present - 2050
Scope of coverage	All J-Oil Mills Group businesses

Scenario analysis results

We assessed the key climate change risks and opportunities along two axes: the impact on business performance and the level of urgency. Looking ahead, we will continue to expand and deepen the financial impact assessment from the highest priority items, and will continue to examine measures to address issues.

Please visit our website to see the results of the scenario analysis and our response measures. (in Japanese only)
https://www.j-oil.com/sustainability/environment/climate_change/tcfd.html

Risk map

Risk analysis

2°C/1.5°C	❶	Increase in production costs due to stricter CO_2 emission regulations
	❷	Failure to respond to the needs of sustainability-focused consumers
	❸	Loss of reputation from failure to implement environmental measures
4°C	❹	Suspension of operations and disruption of distribution networks due to increase in natural disasters
	❺	Difficulty in securing stable supply of raw materials due to decrease in harvest volume and change in quality caused by rising temperatures and abnormal weather conditions

Opportunity map

Opportunity analysis

2°C/1.5°C	❶	Reduction of production and logistics-related costs
	❷	Lower costs and CO_2 emissions resulting from the introduction of renewable energy sources
	❸	Rise in environmental awareness and ethical consumption (response to food crisis)
	❹	Gained trust by achieving an optimal business portfolio that meets society's sustainability demands
	❺	Reinforcement of business continuity measures

Definition of impact and urgency

Impact: Large: Those that could have a significant impact on business performance (10 billion yen or more)
Medium: Those that could have a significant impact on business performance (between 1 billion yen and 10 billion yen)
Small: Those with small impact on business performance (less than 1 billion yen)

Urgency: High: within 1 year
Medium: within 5 years
Low: Over 5 years

Indicators and Targets

We are targeting a 50% reduction in CO_2 emissions compared to FY2013 by FY2030 (Scope 1 and 2). We also intend to become carbon neutral, eliminating CO_2 emissions by FY2050. In addition, we also aim to reduce CO_2 emissions throughout our supply chain (Scope 3) in cooperation with our suppliers, including CO_2 emissions generated from the raw materials we purchase and the products we manufacture. With respect to Scope 3 emissions, we plan to examine ways to reduce emissions by improving our calculation accuracy for Category 1 and Category 4, which generate the most emissions.

Starting in FY2022, we incorporated ESG indicators into the performance targets for individual directors and officers. One of the ESG indicators we incorporated addresses climate change, such as reducing CO_2 emissions. We aim to promote ESG management by introducing incentives that tie executive compensation to ESG indicators to bolster executive focus toward climate change initiatives.

As for introducing an Internal Carbon Pricing (ICP) program, we are gathering information and exploring ways to promote environmental investment through the ICP program.

Source: J-Oil Mills, "J-Oil Mills Report 2022," p.62-63

Tokyu Fudosan Holdings

The company posts a TCFD comparison chart on the ESG investor page of its website and discloses an overview of its initiatives for each item. At the same time, the summary of each item includes a link to the relative section of its TCFD disclosure website which provides details, making it easy to grasp necessary and sufficient information.

TCFD Index

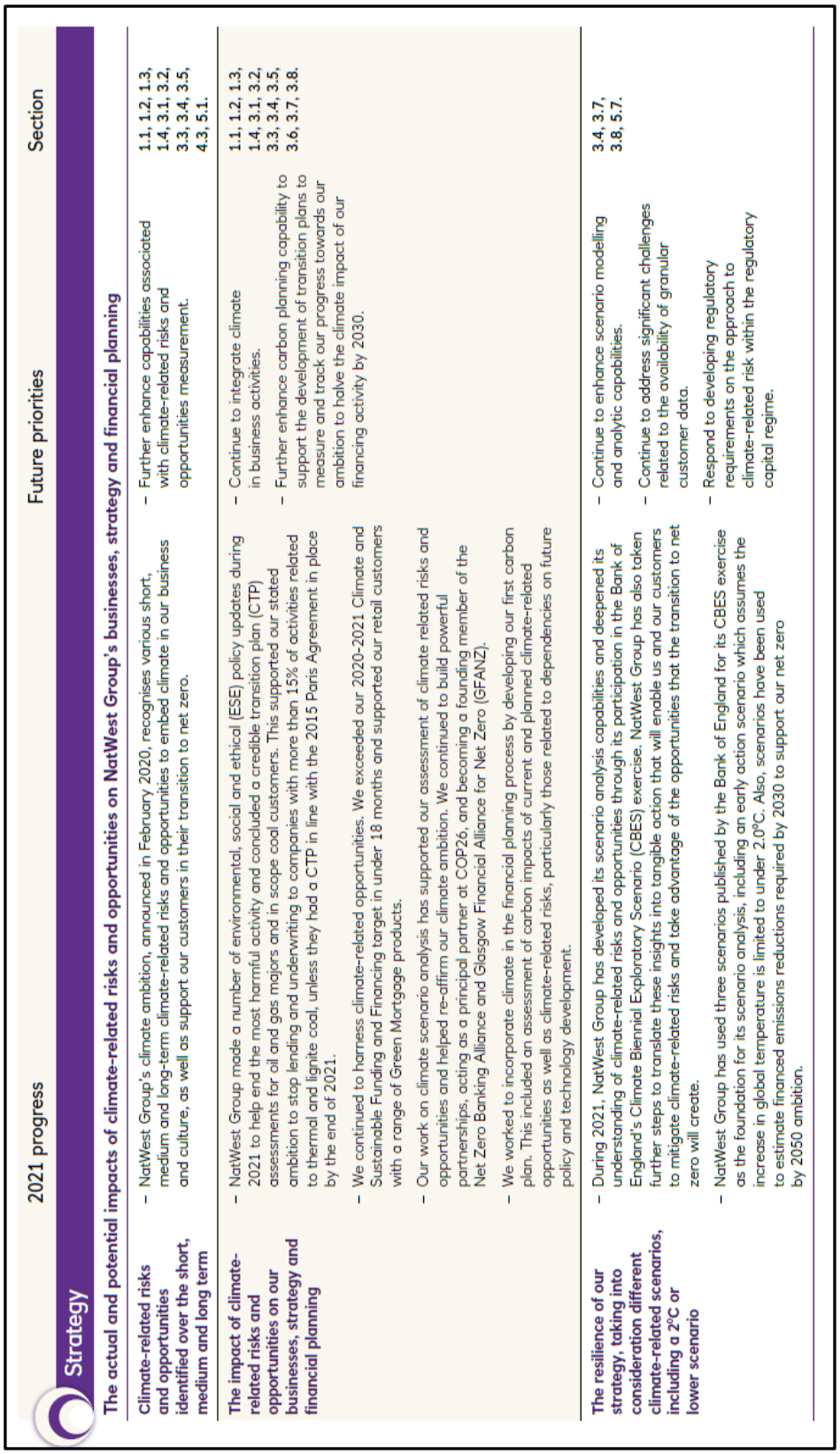
TCFD Index | SASB Index | UNGC Index | ISO26000 Index

Theme	Recommended Disclosure	Approach
Governance	a) The board's oversight of climate related risks and opportunities	• Tokyu Fudosan Holdings Sustainability Committee chaired by the company president discusses significant climate-related issues, whose outcome to be brought to attention at the board of directors.
	b) Management's role in assessing/managing climate related risks and opportunities	
Strategy	a) Climate related risks and opportunities the organization has identified over the short, medium and long-term	• Assessed risks and opportunities for each of urban development, resort, residential and renewable energy businesses over mid-term (- 2030) and long-term(- 2050) for 1.5°C, 3°C and 4°C scenarios. • Promote ZEB/ZEH, expand renewable energy businesses and green financing at each business level
	b) Impact of climate-related risks and opportunities on the organization's businesses, strategy and financial planning	
	c) Resilience of organization's strategy, taking into consideration different climate-related scenarios including a 2°C or lower scenario.	
Risk Management	a) Processes for identifying / assessing climate-related risks	• Addressed climate change as an issue of high significance in the long-term management strategy, set KPI targets for 2030 accordingly and the Sustainability Committee has been monitoring progress. • Sustainability Committee and Risk Management Committee meet together to discuss the issues.
	b) Processes for managing climate-related risks	
	c) Integrate processes for identifying, assessing, and managing climate-related risks into the organization's overall risk management	
Metrics and Targets	a) The metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	• Our GHG emission target for 2030 was approved as SBT aligned with 1.5°C. Pledged to achieve net zero CO_2 emissions by 2050 across our operations and supply chain. • Tokyu Land Co. joined RE100 with the target year as early as 2025. • Set KPI targets to reduce water consumption and waste, obtain environmental performance certificates for buildings, and contribute to forest conservation area
	b) Scope1, 2 and 3 GHG emissions and the related risks	
	c) Targets used by the organization to manage climate related risks and opportunities and performance against those targets	

Source: Tokyu Fudosan Holdings website, "TCFD Index"
(https://tokyu-fudosan-hd-csr.disclosure.site/en/themes/54)

NatWest Group

In the company's TCFD report, an overview of the four themes of TCFD is concisely summarized on one page for each item, with detailed information on each item, including quantitative data.



Strategy

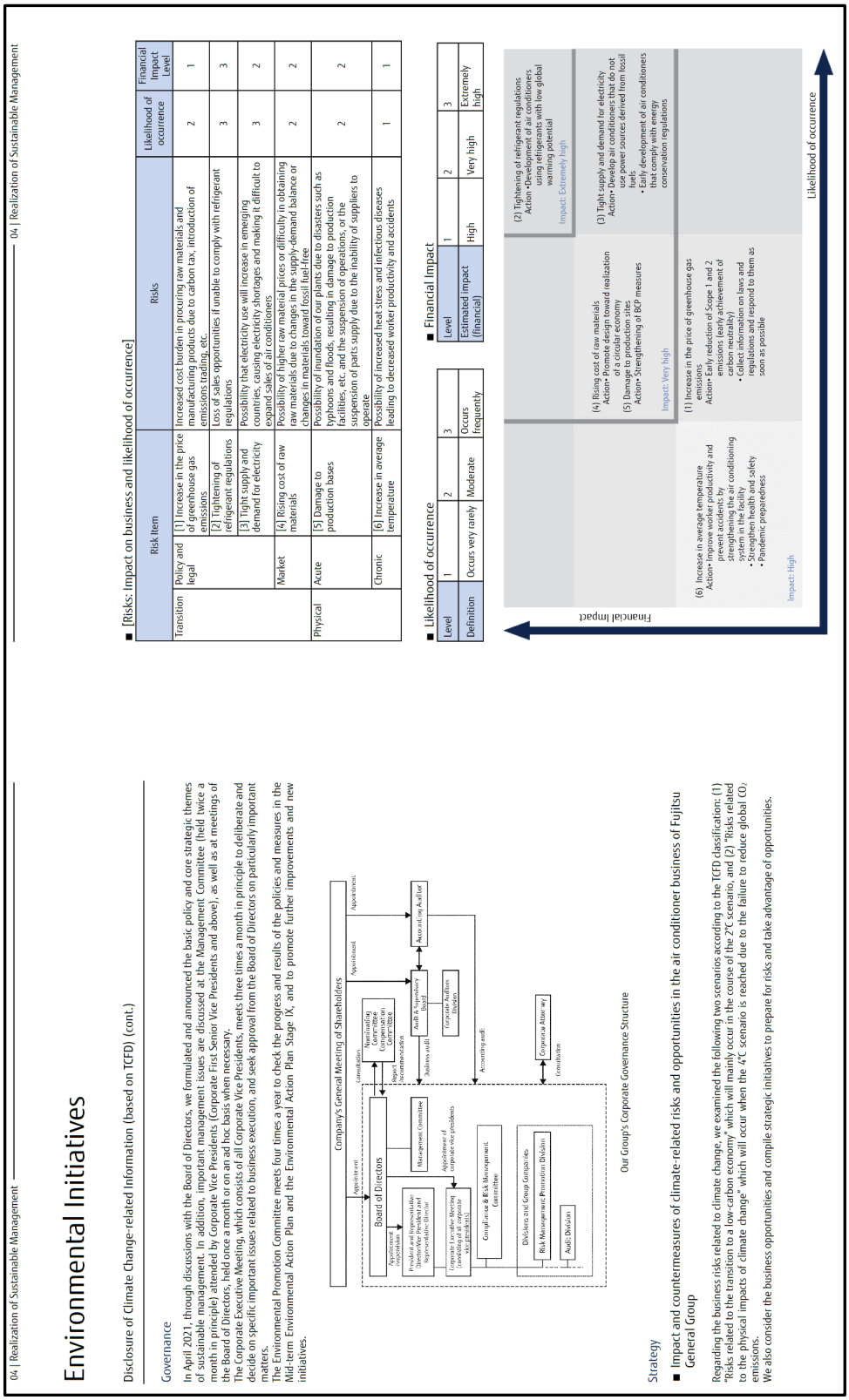
The actual and potential impacts of climate-related risks and opportunities on NatWest Group's businesses, strategy and financial planning

	2021 progress	Future priorities	Section
Climate-related risks and opportunities identified over the short, medium and long term	– NatWest Group's climate ambition, announced in February 2020, recognises various short, medium and long-term climate-related risks and opportunities to embed climate in our business and culture, as well as support our customers in their transition to net zero.	– Further enhance capabilities associated with climate-related risks and opportunities measurement.	1.1, 1.2, 1.3, 1.4, 3.1, 3.2, 3.3, 3.4, 3.5, 4.3, 5.1.
The impact of climate-related risks and opportunities on our businesses, strategy and financial planning	– NatWest Group made a number of environmental, social and ethical (ESE) policy updates during 2021 to help end the most harmful activity and concluded a credible transition plan (CTP) assessments for oil and gas majors and in scope coal customers. This supported our stated ambition to stop lending and underwriting to companies with more than 15% of activities related to thermal and lignite coal, unless they had a CTP in line with the 2015 Paris Agreement in place by the end of 2021. – We continued to harness climate-related opportunities. We exceeded our 2020-2021 Climate and Sustainable Funding and Financing target in under 18 months and supported our retail customers with a range of Green Mortgage products. – Our work on climate scenario analysis has supported our assessment of climate related risks and opportunities and helped re-affirm our climate ambition. We continued to build powerful partnerships, acting as a principal partner at COP26, and becoming a founding member of the Net Zero Banking Alliance and Glasgow Financial Alliance for Net Zero (GFANZ). – We worked to incorporate climate in the financial planning process by developing our first carbon plan. This included an assessment of carbon impacts of current and planned climate-related opportunities as well as climate-related risks, particularly those related to dependencies on future policy and technology development.	– Continue to integrate climate in business activities. – Further enhance carbon planning capability to support the development of transition plans to measure and track our progress towards our ambition to halve the climate impact of our financing activity by 2030.	1.1, 1.2, 1.3, 1.4, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8.
The resilience of our strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario	– During 2021, NatWest Group has developed its scenario analysis capabilities and deepened its understanding of climate-related risks and opportunities through its participation in the Bank of England's Climate Biennial Exploratory Scenario (CBES) exercise. NatWest Group has also taken further steps to translate these insights into tangible action that will enable us and our customers to mitigate climate-related risks and take advantage of the opportunities that the transition to net zero will create. – NatWest Group has used three scenarios published by the Bank of England for its CBES exercise as the foundation for its scenario analysis, including an early action scenario which assumes the increase in global temperature is limited to under 2.0°C. Also, scenarios have been used to estimate financed emissions reductions required by 2030 to support our net zero by 2050 ambition.	– Continue to enhance scenario modelling and analytic capabilities. – Continue to address significant challenges related to the availability of granular customer data. – Respond to developing regulatory requirements on the approach to climate-related risk within the regulatory capital regime.	3.4, 3.7, 3.8, 5.7.

Source: NatWest Group, "2021 Climate-related Disclosures Report", p.9

Fujitsu General

In the integrated report, an overall information is provided according to the relevant sections of the TCFD recommendations, and detailed information on organizational structure etc. are provided.



04 | Realization of Sustainable Management

Environmental Initiatives

Disclosure of Climate Change-related Information (based on TCFD) (cont.)

Governance

In April 2021, through discussions with the Board of Directors, we formulated and announced the basic policy and core strategic themes of sustainable management. In addition, important management issues are discussed at the Management Committee (held twice a month in principle) attended by Corporate Vice Presidents (Corporate First Senior Vice Presidents and above), as well as at meetings of the Board of Directors, held once a month or on an ad hoc basis when necessary.
The Corporate Executive Meeting, which consists of all Corporate Vice Presidents, meets three times a month in principle to deliberate and decide on specific important issues related to business execution, and seek approval from the Board of Directors on particularly important matters.
The Environmental Promotion Committee meets four times a year to check the progress and results of the policies and measures in the Mid-term Environmental Action Plan and the Environmental Action Plan Stage IX, and to promote further improvements and new initiatives.

Our Group's Corporate Governance Structure

Strategy

■ Impact and countermeasures of climate-related risks and opportunities in the air conditioner business of Fujitsu General Group

Regarding the business risks related to climate change, we examined the following two scenarios according to the TCFD classification: (1) "Risks related to the transition to a low-carbon economy" which will mainly occur in the course of the 2°C scenario, and (2) "Risks related to the physical impacts of climate change" which will occur when the 4°C scenario is reached due to the failure to reduce global CO_2 emissions.
We also consider the business opportunities and compile strategic initiatives to prepare for risks and take advantage of opportunities.

■ [Risks: Impact on business and likelihood of occurrence]

Risk Item			Risks	Likelihood of occurrence	Financial Impact Level
Transition	Policy and legal	(1) Increase in the price of greenhouse gas emissions	Increased cost burden in procuring raw materials and manufacturing products due to carbon tax, introduction of emissions trading, etc.	2	1
		(2) Tightening of refrigerant regulations	Loss of sales opportunities if unable to comply with refrigerant regulations	3	3
		(3) Tight supply and demand for electricity	Possibility that electricity use will increase in emerging countries, causing electricity shortages and making it difficult to expand sales of air conditioners	3	2
	Market	(4) Rising cost of raw materials	Possibility of higher raw material prices or difficulty in obtaining raw materials due to changes in the supply-demand balance or changes in materials toward fossil fuel-free	2	2
Physical	Acute	(5) Damage to production bases	Possibility of inundation of our plants due to disasters such as typhoons and floods, resulting in damage to production facilities, etc. and the suspension of operations, or the suspension of parts supply due to the inability of suppliers to operate	2	2
	Chronic	(6) Increase in average temperature	Possibility of increased heat stress and infectious diseases leading to decreased worker productivity and accidents	1	1

■ Likelihood of occurrence

Level	1	2	3
Definition	Occurs very rarely	Moderate	Occurs frequently

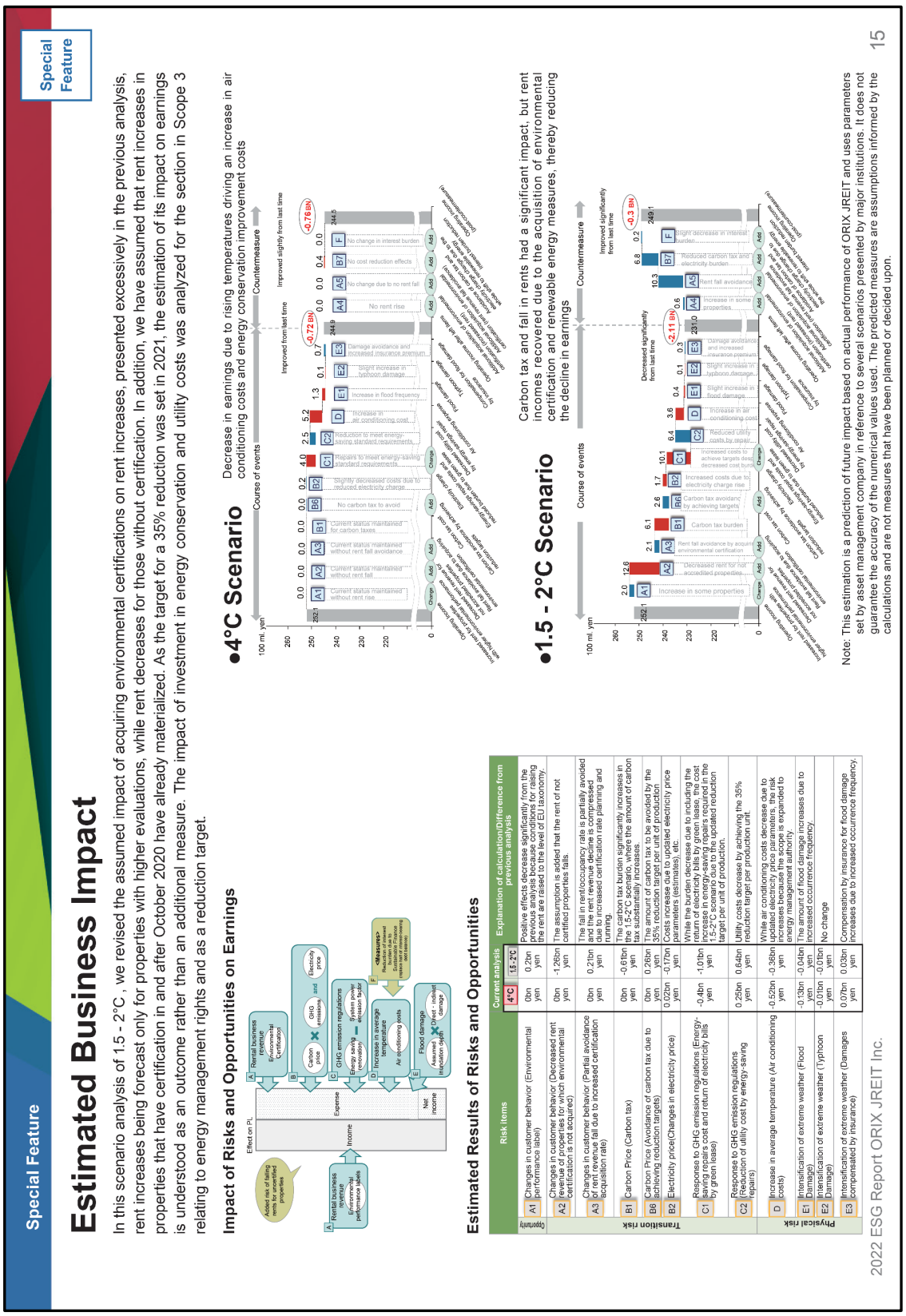
■ Financial Impact

Level	1	2	3
Estimated impact (financial)	High	Very high	Extremely high

Source: Fujitsu General, "Integrated Report 2022", p.59-60

ORIX Real Estate Investment Corporation

In the ESG report, the outline of the four themes of TCFD is shown, and the scenario analysis results are also explained clearly using charts and figures.



Source: ORIX Real Estate Investment Corporation, "2022 ESG Report", p.15

② Disclosure methods for companies with diverse business models

Exemplary TCFD disclosures of companies with diverse business models with a variety of risks and opportunities for climate change are shown in this section. (See TCFD Guidance 3.0, page 36)

Hitachi

In the scenario analysis, the business environment is analyzed for each business and scenario, and future actions are described, which is useful for the evaluation of business units. At the same time, factors other than the environment are considered, and information useful for comprehensive judgment is disclosed. The contents are distinguished by providing relatively brief descriptions in the integrated report and the background of the scenarios in the sustainability report.

The Business Environment and Responses under the 1.5°C and 4°C Scenarios (excerpts)

Target businesses	Railway systems	Power generation and power grids	IT systems	Industrial equipment	Automotive systems
The business environment under the 1.5°C scenario	**Business environment** Global demand for transport systems that emit less CO_2 per distance covered will grow with tighter CO_2 emission regulations in each country and region.	**Business environment** Global demand for electricity generated from renewable energy, nuclear power, and other non-fossil sources will grow with tighter CO_2 emission regulations in each country and region. Power networks will increasingly accommodate natural energy produced through distributed generation.	**Business environment** Demand for energy-saving, high-efficiency IT solutions will grow with tighter CO_2 emission regulations in each country and region. There will also be increased demand for data centers and data analysis systems to accommodate the expansion of financial services such as investments and loans for decarbonization businesses, green bond issues, and data utilization businesses.	**Business environment** Global demand for energy-saving industrial equipment will grow with tighter CO_2 emission regulations in each country and region.	**Business environment** Electric vehicles will rapidly spread with tighter laws and regulations on fuel efficiency and environmental standards, and increases in fossil fuel prices. Markets for alternative non-fossil technologies like hydrogen and biofuel vehicles will expand. The number of countries and regions with near zero sales of internal combustion engine vehicles will increase.
The business environment under the 4°C scenario	**Business environment** Demand for electric-powered transport will gradually increase even without tighter energy regulations. Damage from typhoons, floods, and other natural disasters caused by climate change will rise sharply.	**Business environment** The cost competitiveness of non-fossil energy will increase, and demand for renewable, nuclear, and other non-fossil energy will increase as the expansion of energy consumption pushes up the price of fossil fuels. Natural disasters caused by climate change will rise sharply.	**Business environment** Demand for new, high-efficiency technology will expand as multiplex IT systems in response to natural disaster BCPs will result in increased energy consumption. Demand will also grow for social and public systems to reduce damage from natural disasters.	**Business environment** Typhoons, floods, and other natural disasters caused by climate change will rise sharply.	**Business environment** Fuel efficiency laws and regulations will remain lax globally, and internal combustion engine vehicles will remain a major mode of transport. The modal shift will be slow, as conventional automobiles and motorcycles will remain predominant. Typhoons, floods, and other natural disasters caused by climate change will rise sharply.
Responses to future business risks (Business opportunities)	**Responses to business risks under the 1.5°C and 4°C scenarios** Continue to strengthen the railway business as global demand for railways will increase under either scenario.	**Responses to business risks under the 1.5°C and 4°C scenarios** Continue to enhance the response to relevant markets in view of expected higher demand for non-fossil energy under either scenario.	**Responses to business risks under the 1.5°C and 4°C scenarios** Continue to develop innovative digital technologies, nurture necessary human capital, and enhance digital service solutions that generate new value in view of the expected growth in demand for digital services and the subsequent market expansion under either scenario.	**Responses to business risks under the 1.5°C and 4°C scenarios** Under either scenario, continue developing energy-saving, high-efficiency products that use IoT technology. Focus particularly on connected products with communication features. Miniaturized, high-efficiency, low-loss products can also help reduce CO_2 emissions.	**Responses to business risks under the 1.5°C scenario** Promote R&D of electrification technology and other alternative technologies to enhance the response to new markets such as electric vehicles.

Notes:
1 This table is a partial extract. Please check the Hitachi Sustainability Report 2022 for more details including risks and opportunities under each scenario and financial information.
2 These scenario analyses are not future projections, but an approach used to consider Hitachi's climate change resilience. Future outcomes may differ from each scenario.

Source: Hitachi, "Hitachi Integrated Report 2022", p.79

Responding to Climate Scenario Risks and Opportunities for Each Business

Hitachi operates a broad array of businesses with each business having its own set of risks and opportunities. We therefore selected businesses that have a relatively high likelihood of being affected by climate change and conducted scenario analyses on them. In selecting the businesses, we took into account the factors of, high sales volume within the Group, and relatively high need for fossil fuels when products and services are used, as well as high CO_2 emissions.

The businesses we selected using these criteria were railway systems, power generation and power grids, IT systems, industrial equipment, automotive systems, and construction machinery. For each of these businesses, we considered the business environment under the 1.5°C and 4°C scenarios and how we would respond.

- 1.5°C scenario As projected by the IPCC's RCP 2.6 climate model, the IEA 450 Scenario, and other scenarios, we are anticipating a world where stringent measures and regulations will be implemented to help realize a decarbonized society. Therefore, we investigated risks and opportunities on the premise of carbon neutrality by fiscal 2050.
- 4°C scenario We focused on there being increased climate-induced natural disasters as a result of lax regulations as projected by the IPCC's RCP8.5 scenario and other scenarios.

Our assessment of the major risks and opportunities for the selected businesses are outlined in the following table.

The Business Environment, Major Risks and Opportunities, and Strategies under the 1.5°C and 4°C Scenarios

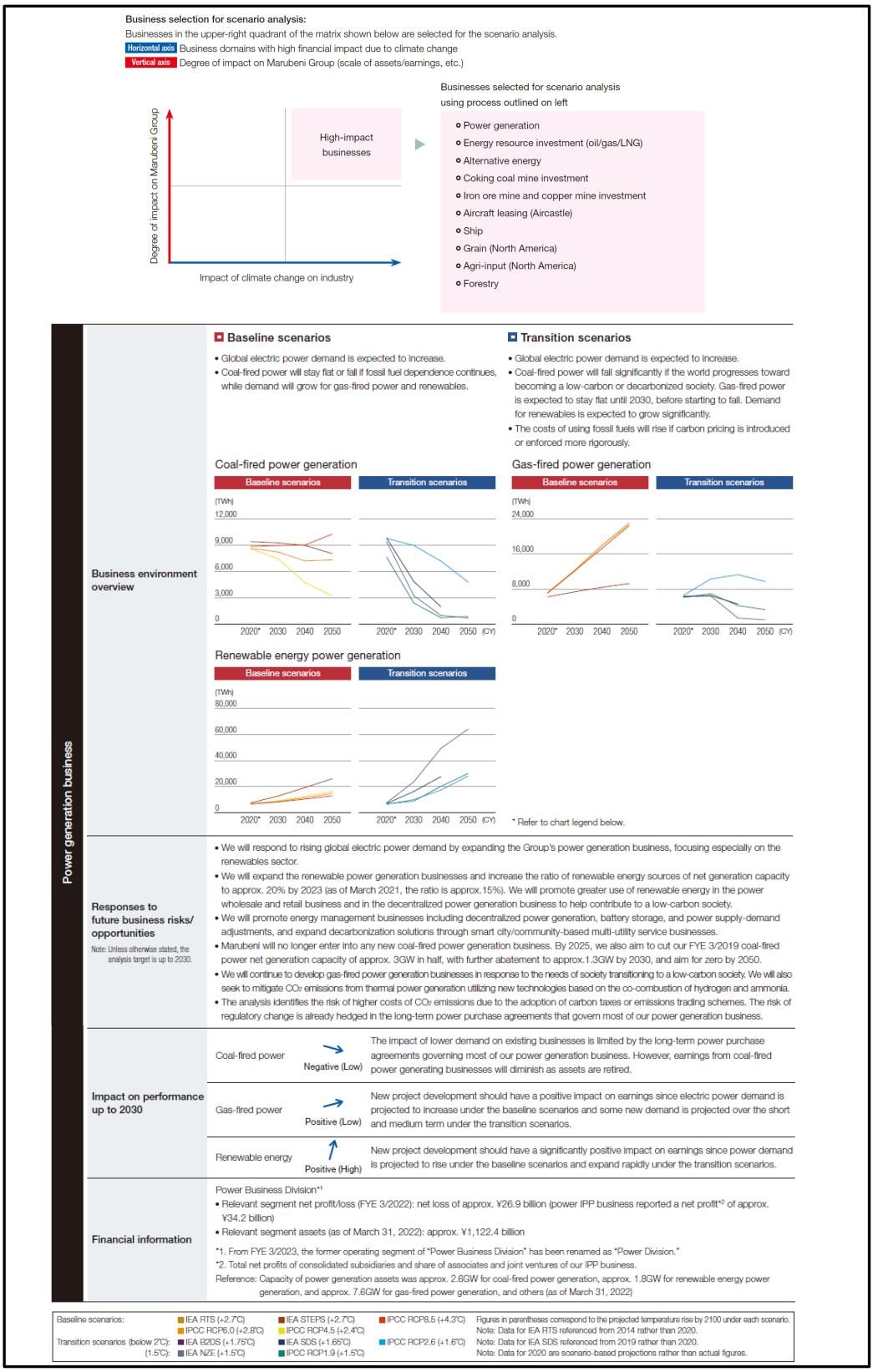
Note: This table is divided into the following three pages.

Target businesses	Railway systems	Power generation and power grids	IT systems	Industrial equipment	Automotive systems
The business environment and major risks and opportunities under the 1.5°C scenario	**Business environment** Global demand for transport systems that emit less CO_2 per distance covered will grow with tighter CO_2 emission regulations in each country and region.	**Business environment** Global demand for electricity generated from renewable energy, nuclear power, and other non-fossil sources will grow with tighter CO_2 emission regulations in each country and region. Power networks will increasingly accommodate natural energy produced through distributed generation.	**Business environment** Demand for energy-saving, high-efficiency IT solutions will grow with tighter CO_2 emission regulations in each country and region. There will also be increased demand for data centers and data analysis systems to accommodate the expansion of financial services such as investments and loans for decarbonization businesses, green bond issues, and data utilization businesses.	**Business environment** Global demand for energy-saving industrial equipment will grow with tighter CO_2 emission regulations in each country and region.	**Business environment** Electric vehicles will rapidly spread with tighter laws and regulations on fuel efficiency and environmental standards, and increases in fossil fuel prices. Markets for alternative non-fossil technologies like hydrogen and biofuel vehicles will expand. The number of countries and regions with near zero sales of internal combustion engine vehicles will increase.
	Risks Competitiveness will decline if there are delays in the development of innovative emission-reducing technologies including those to improve the efficiency of railway services through digital utilization such as dynamic headway (flexible operations in response to passenger demand) and new mobility services like MaaS.	**Risks** Delays in the construction of power networks that would enable the mass introduction of renewable energy with large output fluctuations.	**Risks** Competitiveness will decline if there is a lack of technological and human resource development to provide energy-saving and highly efficient IT solutions and also if decarbonized measures for energy-intensive data centers are delayed.	**Risks** Competitiveness will decline if there are delays in the development of high-efficiency, low-loss products.	**Risks** Delay transition to a new business environment caused by rapidly development of internal combustion engine vehicles will potentially decline sales.
	Opportunities Demand will grow for railways, which emit less CO_2 per distance covered. There will be a shift to energy-saving railcars from conventional models, and the efficiency of railway services will be improved through digital utilization. Data usage will also boost demand for new mobility services.	**Opportunities** Business opportunities will grow with rising demand for renewable energy—the key to a decarbonized future—and with the provision of grid solutions, digital service solutions, and energy platforms that can accommodate the diversification of energy suppliers.	**Opportunities** Demand will grow for energy-saving and high-efficiency information systems that contribute to zero-emissions. There will also be increased demand for environment-related financial services as investments and loans for decarbonization businesses and green bond issues.	**Opportunities** Utilization of IoT, digitalization, and connected systems to develop innovative products and solutions that contribute to CO_2 emission reductions without relying on the energy-saving features of individual products.	**Opportunities** Expanding market for electric, hydrogen, and biofuel vehicles including motorcycles to replace internal combustion engine vehicles.

Source: Hitachi, "Sustainability Report 2022", p.50

Marubeni Corporation

Disclosure is made in line with the four themes of the TCFD recommendations (Governance, Strategy, Risk Management, Metrics and Targets), and the impact on each business is also individually analyzed.



Source: Marubeni Corporation, "Disclosure in Line with the Recommendations of the TCFD", p.5-6

③ Disclosure of objectives for responding to climate change

In TCFD disclosure, in addition the 11 items on the four themes recommended by TCFD, disclosure of the company's views on responding to climate change will lead to better understanding of investors. Exemplary disclosures of objectives for responding to climate change are shown in this section.

Asahi Group Holdings

At the beginning of the TCFD report, the company explicitly explains the position of climate change in its environmental strategy.

Introduction

The Reasons Why the Asahi Group Is Working to Respond to Climate Change

Global warming has caused abnormal weather conditions all over the world, greatly ruining lives and damaging properties. Phenomena include unprecedented changes to the climate, drought caused by heat waves, and flooding caused by typhoons and torrential rain. Climate change is an important social issue for the Asahi Group, which operates businesses using the blessings of nature, and is a significant threat to business continuity.

To fulfill our mission of "Deliver on our great taste promise and bring more fun to life," which we declared in the Asahi Group Philosophy (AGP), we aim to pass on a sustainable global environment to future generations, nurturing the blessings of nature.

Under Asahi Group Environmental Vision 2050, we have declared our commitment to helping to realize a sustainable society alongside the growth of our businesses. This will be accomplished by pursuing the two goals of "achieving zero environmental impact in the business activities (neutral)" by 2050 and "utilizing the Group's proprietary technologies to create more environmental value (plus)."

With a view to realizing carbon neutrality by 2050, we formulated Asahi Carbon Zero, a medium- to long-term target for reducing CO_2 emissions, and acquired 1.5ºC certification from the Science Based Targets (SBT) initiative for the Scope 1 and 2 target by 2030. Furthermore, in October 2020 we became the first company in the Japanese beverage industry to join RE100 and have since been promoting a broad range of initiatives including the utilization of renewable energy.

In addition, we aim to create even more environmental value for society ("plus") by leveraging our proprietary technologies to help promote the transition to a low-carbon society and resolve other social issues. Through this aim, we believe we can create various business opportunities.

To pass on the blessings of nature to future generations based on the "neutral" and "plus" concept, we will appropriately respond to the risks and opportunities presented by climate change while comprehensively examining matters on which climate change will likely have an impact, such as raw material procurement, containers and packaging, and water resources.

Asahi Group Environmental Vision 2050: Overview

Source: Asahi Group Holdings, "Asahi Group TCFD Report", p.2

Tokio Marine Holdings

In addition to its basic approach to climate change, the company's positioning of climate change in its diverse operations, such as insurance underwriting, investments and financing, and fund formation, as well as its approach as a global company are shown, leading to a better understanding of its disclosure.

Implementation of Climate Change Strategy

①The Company's Basic Approach to Climate Change

At the end of September 2020, we published our thoughts on climate change in "Tokio Marine: Our Climate Strategy," which we revised at the end of September 2021. In this statement, we commit ourselves to supporting our clients and investees in the transition to a decarbonized society. We will not underwrite new insurance policies for coal-fired thermal power plants and coal mine development projects for fuel coal, regardless of whether they are new or already existing. In our financing and investment operations, we will not extend new financing to coal-fired thermal power plants and coal mine development projects for fuel coal, regardless of whether they are new or already existing, in order to contribute to the transition to a decarbonized society. However, toward achieving the Paris Agreement targets, we might carefully consider and handle projects that incorporate innovative technologies and techniques, such as carbon dioxide capture and storage (CCS); carbon dioxide capture, utilization, and storage (CCUS); and mixed combustion technologies. As of July 31, 2022, we had not underwritten any new insurance policies or provided financing since announcing "Tokio Marine: Our Climate Strategy" at the end of September 2020.

In addition, we are supporting initiatives to lower CO_2 emissions by engaging with power plants for which we have already underwritten insurance to consider the environment through adoption of innovative high-efficiency power generation technologies and CCUS (carbon recycling) technologies that reduce or stop GHG emissions. Indeed, we are engaging with customers involved in the corresponding power plants to support their transition through product provision and/or consulting. Furthermore, after announcing "Tokio Marine: Our Climate Strategy," we have created and begun using an engagement sheet to confirm and record plans aimed at realization of a decarbonized society. If it is determined that a customer is not considering its response to decarbonization, we can decline the renewal of the customer's insurance policy.

Furthermore, in December 2021, we identified environmental and social risks in our insurance underwriting and investment activities and identified sectors where such risks are likely to occur. Specifically, the Company will prohibit transactions involving inhumane weapons and will exercise caution when dealing with oil sands and Arctic oil and gas exploration.

②Investment and Financing (Initiatives as an Institutional Investor)

As a signatory to the United Nations Principles for Responsible Investment (PRI) through Group companies TMNF and Tokio Marine Asset Management, we have established a policy concerning ESG investment and financing, considering not only financial information but also ESG elements. By incorporating climate-related elements into the investment decision-making process, we are supporting the transition to a decarbonized society. Specifically, we are undertaking ESG engagement to support increased corporate value and the sustainable growth of investee companies through constructive and purposeful dialogue that considers non-financial factors including ESG elements in addition to their financial data as well as ESG integration where both financial data and non-financial data are used in the investment decision-making process. Through these efforts, we are promoting investments in ESG-themed green bonds and sustainability bonds. The total balance of such themed investments totaled about 65.0 billion yen as of March 31, 2022, for TMNF, TMNL, and Nisshin Fire. We have also begun using data providers to conduct quantitative analyses of the greenhouse gas emissions of our portfolio companies.

③Fund Formation (Initiatives as an Asset Manager)

Tokio Marine Asset Management has been operating a renewable energy fund targeting investments in solar power plants since 2012, effectively backing initiatives aimed at the transition to a decarbonized society.

Performance of renewable energy funds*9 (Total as of March 31, 2022)

Amount committed	Approximately 62 billion yen
Units installed	45

*9: TM Nippon Solar Energy Fund 2012, 2013, and 2014
TM Nippon Renewable Energy Fund 2017 and 2021
TM Nippon Long-Term Natural Energy Fund 2020

④Leading Discussions at International Climate Change Conferences (Initiatives as a Global Company)

As climate change is an important social issue that needs to be addressed by the entire world, Tokio Marine Group actively engages in dialogue with international organizations, governments, industries, academic communities, NPOs, and NGOs.

We have also led discussions at international conferences, which includes co-chairing a climate change–related working group for the Geneva Association since 2008. We have also joined the Association's climate change task force and have been engaging in the formulation of scenario analysis and stress test guidelines to perform forward-looking impact assessment of climate change.

We are the only Asian company to be a member of the Sustainable Markets Initiative, an insurance industry task force envisioned by Prince Charles of England established in June 2021.

In January 2022, we became the first Japanese insurance company to join the Net-Zero Insurance Alliance (NZIA), which promotes the social transition of insurance underwriting portfolios toward net zero greenhouse gas emissions by 2050. The NZIA measures the greenhouse gas emissions of underwriting portfolios, is developing a target-setting methodology consistent with the Paris Agreement, and is examining methods to support corporate decarbonization. We are actively participating in these discussions and contributing to international rulemaking.

Source: Tokio Marine Holdings, "2022 Integrated Annual Report", p.79

④ Diverse disclosure media

The media of TCFD disclosure is diversifying. Exemplary disclosures in various media are shown in this section. (See TCFD Guidance 3.0, page 9)

i) Disclosure in securities reports

An increasing number of companies are disclosing climate-related information in line with TCFD recommendations in their securities reports. In addition, consideration is being given to adding a new section to the securities reports that will include the section titled "Views and Initiatives on Sustainability" which is expected to attract even greater interest.

Examples of disclosure are shown.

J Front Retailing

In its multiple media (integrated reports, websites and securities reports), the company discloses climate-related information in accordance with 11 items in the TCFD recommendations.

The company's securities report provides a quantitative risk and opportunity impact assessment based on 2 climate scenarios, and also includes plans for a 2050 net-zero transition.

(c) Risks, opportunities and financial impacts based on relevant scenarios, and strategies and resilience against it

The JFR Group exhaustively extracted climate risks and opportunities and assessed their importance based on two assessment criteria including the "degree of impact on the Group and the probability of occurrence" and the "degree of impact on stakeholders."

Furthermore, the Group has conducted both quantitative and qualitative analyses of the financial impacts in FY2030 assuming the below 1.5°C/2°C scenario and the 4°C scenario with regard to the climate related risks and opportunities that it has evaluated as being of particularly high importance. (Table 8)

The qualitative financial impacts are presented in three levels by the direction of the arrow symbols.

Table 8: Climate change risks and opportunities of particular importance to the JFR Group and their financial impacts

↑	: The impact on the Group's business and finance is expected to be very large.
↗	: The impact on the Group's business and finance is expected to be slightly large.
→	: The impact on the Group's business and finance is expected to be negligible.

Source: J. Front Retailing, "Annual Securities Report, the 15th fiscal year", p.48

Climate-related risks and opportunities of particular importance to the JFR Group		Financial impacts		Measures
		Below 1.5°C/2°C scenario	4°C scenario	
Risk	・ Increase in energy costs associated with the introduction of policies to control GHG emissions, such as carbon taxes and the strengthening of regulations	Cost increase of approximately ¥1.1 billion*1	Cost increase of approximately ¥0.6 billion*1	・ Reduction in Scope 1 and 2 GHG emissions due to switching to energy-saving and renewable energy at stores and business sites
	・ Increase in cost of reducing GHG emissions by purchasing green electricity certificates and so forth	↗	→	・ Reduction in energy usage due to introduction of latest high energy-efficiency equipment at stores and business sites
	・ Increase in renewable energy procurement cost due to increase in use of electricity from renewable energy sources	Cost increase of approximately ¥0.7 billion*2	Cost increase of approximately ¥0.2 billion*2	・ In-house generation and consumption of renewable energy through introduction of energy creation system, such capital investment in renewable energy at in-house facilities
	・ Reduction in profits due to damage to stores and business sites and suspension of operations because of natural disasters caused by climate change	Sales decrease of approximately ¥5.2 billion*3	Sales decrease of approximately ¥10.3 billion*3	・ Increased resilience of stores and business sites through BCP preparation
	・ Loss of sales opportunities in stores due to increased risk of infectious diseases (COVID-19, etc.) caused by climate change	↗	↑	・ Diversification of sales channels through promotion of Real × Digital Strategy formulated in the Medium-Term Business Plan.
Opportunity	・ Decrease in energy procurement cost due to introduction of the latest high energy-efficiency equipment	↗	→	・ Reduction in energy usage due to introduction of latest high energy-efficiency equipment at stores and business sites
	・ Expansion of earnings due to opening of environmentally conscious tenant stores following conversion to stores and business sites with high environmental value	Sales increase of approximately ¥1.0 billion*4	—	・ Acquisition of environmental certification for stores and business sites through switching to energy-saving and renewable energy
	・ Expansion of earnings due to response to an increase of demand for sharing and upcycled products due to collaboration with suppliers	↑	↗	・ Conversion to a circular business model, including sharing and upcycling through collaboration with suppliers
	・ Expansion in earnings due to response to an increase of customer demand for environmental products and services, such as re-used products and recycled products	↑	↗	・ Increase in the level of 3R through collaboration with customers and suppliers and expansion in handling of environmental products and services
	・ Capture of new growth opportunities by response to increased infectious disease risk (such as COVID-19) caused by climate change	↑	↗	・ Diversification of sales channels through promotion of Real × Digital Strategy formulated in the Medium-Term Business Plan.

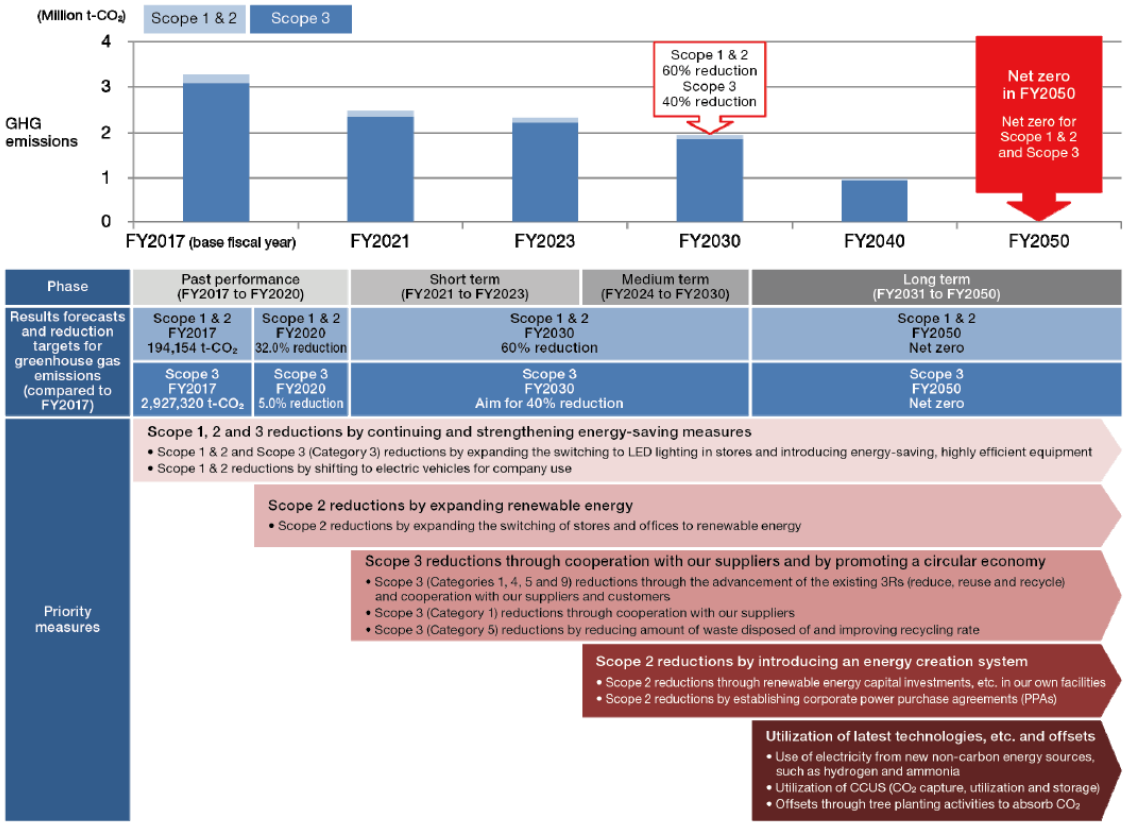
Source: J. Front Retailing, "Annual Securities Report, the 15th fiscal year", p.49

- JFR Group's FY2050 Net Zero Transition Plan

The JFR Group believes it necessary to strengthen its highly strategic resilience from a medium- to long-term perspective under both the below 1.5˚C/2˚C scenario and the 4˚C scenario towards realizing net zero in FY2050.

Therefore, the Group has formulated a transition plan for realizing net zero in FY2050. (Figure 4) Under this plan, in our business strategy, we have formulated appropriate strategies to avoid negative risks, while for positive opportunities we have clarified specific initiatives from short-, medium- and long-term perspectives aimed at capturing new growth opportunities, such as responding proactively to market changes.

Figure 4: FY2050 Net Zero Transition Plan*



* The plan is current as of the end of May 2022, and may be revised depending on business strategies going forward.

Source: J. Front Retailing, "Annual Securities Report, the 15th fiscal year", p.50-51

Marui Group

The company started to include TCFD disclosure in its securities reports since the fiscal year ending in March 2019 and is a pioneering company on to disclosure in securities reports. In particular, the company quantitatively discloses its impact on profits in the analysis of risks and opportunities.

<Business strategies>
(Business risks and opportunities)
Recognizing that a 4°C rise in the global temperature resulting from climate change would have an enormous impact on society, we believe it is important to work together to contribute to the movement seeking to limit global warming to below 1.5°C above pre-industrial levels. In order to strengthen our ability to respond to scenarios below 2°C (with a target of 1.5°C), we will identify the impact of climate-related risks and opportunities on our business, and proceed to formulate relevant strategies.
The Group aims to create a business model integrating Retailing and FinTech with "investing for the future" that leads to mutual development, by investing in start-ups, etc., with which we can share our corporate philosophy or visions. Climate change would pose such risks as damages to stores, facilities, etc., from floods caused by typhoons and torrential rains, and an increase in costs due to the introduction of carbon taxes along with tightened regulations. On the other hand, we view the provision of goods and services responding to increased consumer environmental awareness and investing in eco-friendly companies as the Group's business opportunities.

(Analysis and calculation of financial impacts)
Financial impacts on businesses are analyzed based on our climate change scenario, etc., and calculated by item as the amount of impact on income anticipated within the period through 2050. As physical risks, even if a rise in temperature is held below 1.5°C, we anticipate that flood damage will abruptly occur due to typhoons, torrential rains, etc. These risks are expected to affect rent revenues, etc., due to suspension of store operations (approx. ¥1.9 billion) and cause building damages (approx. ¥3.0 billion). We assessed the transition risks by estimating increases in future energy-related costs, which are expected to be renewable power procurement costs (approx. ¥0.8 billion) and the introduction of carbon taxes (approx. ¥2.2 billion). The relevant opportunities are expected to have an impact on store revenue as a result of proposing lifestyles to highly environmentally conscious consumers (approx. ¥1.9 billion), long-term revenue due to an increase in cardholders (approx. ¥2.6 billion), and returns from investment in environmentally friendly companies (approx. ¥0.9 billion). We project long-term revenue owing to an increase in recurring payments due to cardholders using electrical power from renewable energy, leading to the conversion of regular cardholders to Gold cardholders (approx. ¥2.0 billion), a reduction of procurement costs resulting from entering the power retailing business (approx. ¥0.3 billion), and exemption from carbon taxes (approx. ¥2.2 billion). We will conduct analysis regularly based on various future trends and continue to review our evaluations and disclose relevant information.

(Assumptions)

Target period	2020 to 2050
Scope	All businesses of MARUI GROUP
Calculation requirements	Analyses based on climate change scenarios (IPCC, IEA, etc.)
	Calculation of financial impacts assumed during the period by item
	Calculation of risks in the amount of impact if an event occurs
	Calculation of opportunities for lifetime value (LTV), in principle
	Not considering infrastructure enhancements such as public works and technology advancements, etc.

Source: Marui Group, "Annual Securities Report, the 86th term", p.25

(Risks and opportunities associated with climate change)

	Changes in society	Risks faced by MARUI GROUP	Description of risks	Financial impacts
Physical risks	Flood damage due to typhoons, torrential rains, etc.*1	Suspension of store operations	Impact on rent revenues, etc., due to business suspension	Approx. ¥1.9 billion
			Building damages due to flooding (recovery of power supply facilities, etc.)	Approx. ¥3.0 billion
		Stop of system centers	Groupwide suspension of business activities due to system outage	Response completed *2
Transition risks	Increase in demand for renewable energy	Rise in renewable energy prices	Increase in energy costs due to renewable energy procurement	Approx. ¥0.8 billion (Annual)
	Tightening of government's environmental regulations	Introduction of carbon taxes	Tax increase due to carbon taxes	Approx. ¥2.2 billion (Annual)

	Changes in society	MARUI GROUP's opportunities	Description of opportunities	Financial impacts
Opportunities	Enhanced environmental consciousness and change in lifestyles	Propose sustainable lifestyles	Revenue from bringing in eco-friendly tenants, or other efforts	Approx. ¥1.9 billion *3
			Increase in sustainability-minded credit cardholders	Approx. ¥2.6 billion *4
			Returns from investments in eco-friendly companies	Approx. ¥0.9 billion
		Response to demand from general households for renewable energy	Revenue from cardholders using electrical power from renewable energy	Approx. ¥2.0 billion *5
	Diversification of electricity procurement	Entry into the power retailing business	Reduction in intermediary costs due to direct procurement of electricity	Approx. ¥0.3 billion (Annual)
	Tightening of government's environmental regulations	Introduction of carbon taxes	Exemption from carbon taxes from achieving zero greenhouse gas emissions	Approx. ¥2.2 billion (Annual)

*1. Assuming flooding of a river that will have the most significant effects based on hazard maps (Arakawa River) (three-month effect on two stores in the watershed areas)
*2. Assuming no financial impacts as a backup center has been established
*3. Increased rent revenues and credit card usage
*4. Calculated revenue from credit card admission and usage
*5. Estimated revenue from an increase in the number of Gold card holders after making recurring payments, etc.

Source: Marui Group, "Annual Securities Report, the 86th term", p.26

Mitsui & Co.

The company discloses climate-related information in accordance with TCFD recommendations through its multiple media (securities report, integrated report and website).

The summary of disclosure and transition plan based on TCFD recommendations are presented in the securities report and integrated report, and links to the company's website are provided for details. The roadmap for net zero is also explained on ESG Day, an event for investors.

3) Information Disclosure Based on Recommendations of TCFD

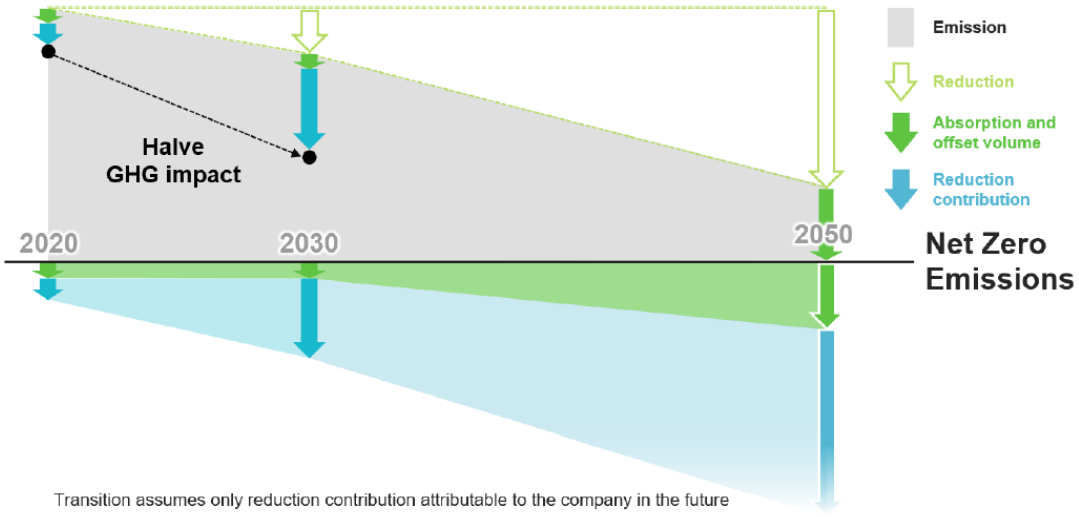
In December 2018, Mitsui declared its support for the Task Force on Climate-related Financial Disclosures (TCFD). We will respond to climate change by continuing to seek ways to actively disclose information in accordance with TCFD's recommendations. As a responsible company operating globally, we support the global targets represented by the Paris Agreement, as well as Japan's medium- to long-term targets for reducing GHG emissions. By working towards achieving our reduction targets that contribute to these global goals and targets, we will continue to make efforts to mitigate risk related to climate change.

For more information, please see "Information Disclosure Based on Recommendations of TCFD" on Mitsui's sustainability webpage (https://www.mitsui.com/jp/en/sustainability/environment/climate_change/index.html#tcfd) in addition to the below.

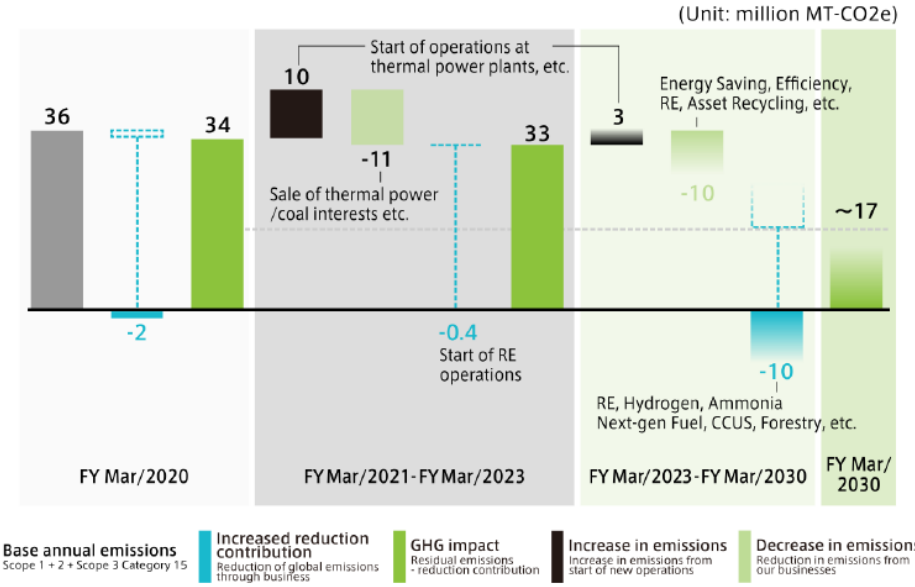
Item	Summary of our policy and initiatives
Governance	- Responding to climate change is one of our most important management challenges. Basic policy and important matters concerning climate change are deliberated upon by the Sustainability Committee, an organization under the control of the Corporate Management Committee, and then regulatory discussed and reported on by the Corporate Management Committee and Board of Directors. - We have established a Sustainability Advisory Board (formerly the Environmental and Societal Advisory Committee), a group comprising external experts, and utilize information and advice provided by its members in deliberations by the Sustainability Committee.
Strategy	- We are conducting scenario analysis in short-, mid-, and long-term timeframes up to the year 2050. We conduct scenario analysis of transition risks and opportunities with reference to the scenarios set out in the World Energy Outlook (WEO) published by the IEA (International Energy Agency). - In consideration of scale of business operations and climate change impact (GHG emission amount or reduction contribution amount), we have selected the following as high priority areas for scenario analysis: upstream oil and gas business and LNG business, metallurgical coal business, iron ore business, offshore oil and gas production facilities business, gas distribution business, LNG shipping business, renewable energy business, next-generation energy business, and forest resources business. - We conduct scenario analysis during the business planning process, including the formulation of the consolidated financial result forecast for FY Mar/2023. Results of the analysis are also reflected in the business portfolio strategy. - In addition, with reference to the RCP (Representative Concentration Pathway) used by the IPCC (Intergovernmental Panel on Climate Change), Mitsui has conducted analysis of investment assets above a certain value by surveying the impact of physical risks based on natural disasters that have occurred over the last five years.
Risk Management	- Mitsui has established an integrated risk management system that centrally manages company-wide risks. Under the integrated risk management system, the Corporate Staff Divisions, which act as the secretariat, manage risks from a company-wide perspective. We position risks from climate change (physical and transition) to be third in importance only to risks related to business investments and country risks and are taking measures to address them. For more information, please see "2. Risk Factors, 2. Operating and Financial Review and Prospects."
Indicators and Targets	- We have established and continue to monitor the various environmental indicators and targets listed below: (1) Scope 1 and 2, and Scope 3 Category 15 (Investments) for the Company and its consolidated subsidiaries (including un-incorporated joint ventures): Formulating Mitsui's goal of achieving net-zero emissions as our Vision for 2050 and aiming to reduce GHG impact by 2030 to half of what it was in the fiscal year ended March 2020, as the path to achieve the above goal. (2) Scope 1 and 2 GHG emissions of the Company and its consolidated subsidiaries (except for Un-incorporated Joint Venture): Halving GHG emissions by 2030compared to the fiscal year ended March 2020. (3) Ratio of renewable energy in power generation business: increasing to over 30% by 2030.

Source: Mitsui & Co., “Annual Securities Report for the fiscal ended March 31, 2022”, p.31

(Path to achieving GHG reduction targets)



(Path to halving GHG impact by 2030)



(Changes in GHG emission amounts*) Unit: Kt-CO2e

	FYE Mar/2019	FYE Mar/2020	FYE Mar/2021
Scope 1 + 2	3,776	3,868	4,336
Scope 3 (Investments)	-	32,000	35,000

* Independent Practitioner's Assurance has been obtained in the Sustainability Report for Scopes 1 and 2, and some Scope 3 GHG emissions for fiscal year ended March 2021. For more information on the scope of the assurance, please see "Environmental performance Data" in Mitsui & Co.'s Sustainability Report 2021 (https://www.mitsui.com/jp/en/sustainability/sustainabilityreport/2021/pdf/en_sustainability_2021.pdf#page=131).
Data for fiscal year ended March 31, 2022 is scheduled to be disclosed in August 2022.

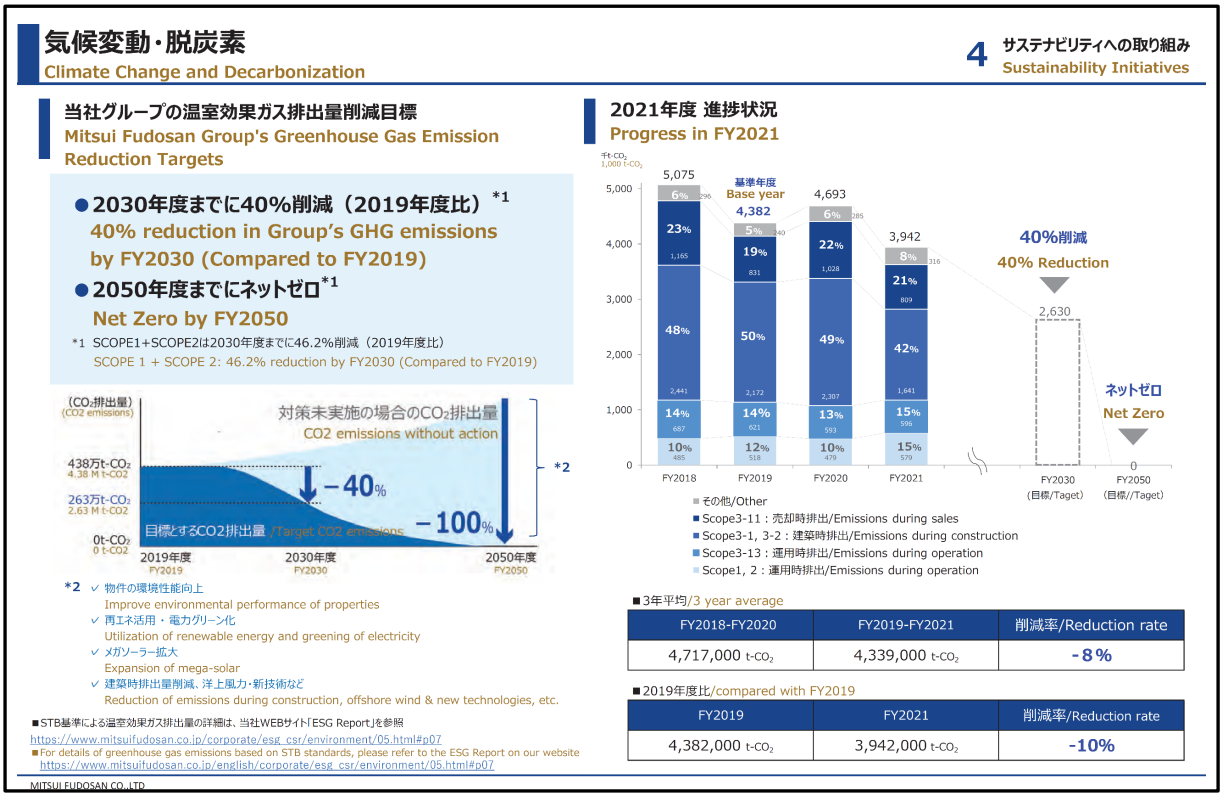
Source: Mitsui & Co., “Annual Securities Report for the fiscal ended March 31, 2022”, p.29-30

ii) Disclosure in investor briefing materials

Exemplary disclosures in presentations at financial results briefings and ESG briefings, with descriptions in an easy-to-understand format, are shown.

Mitsui Fudosan

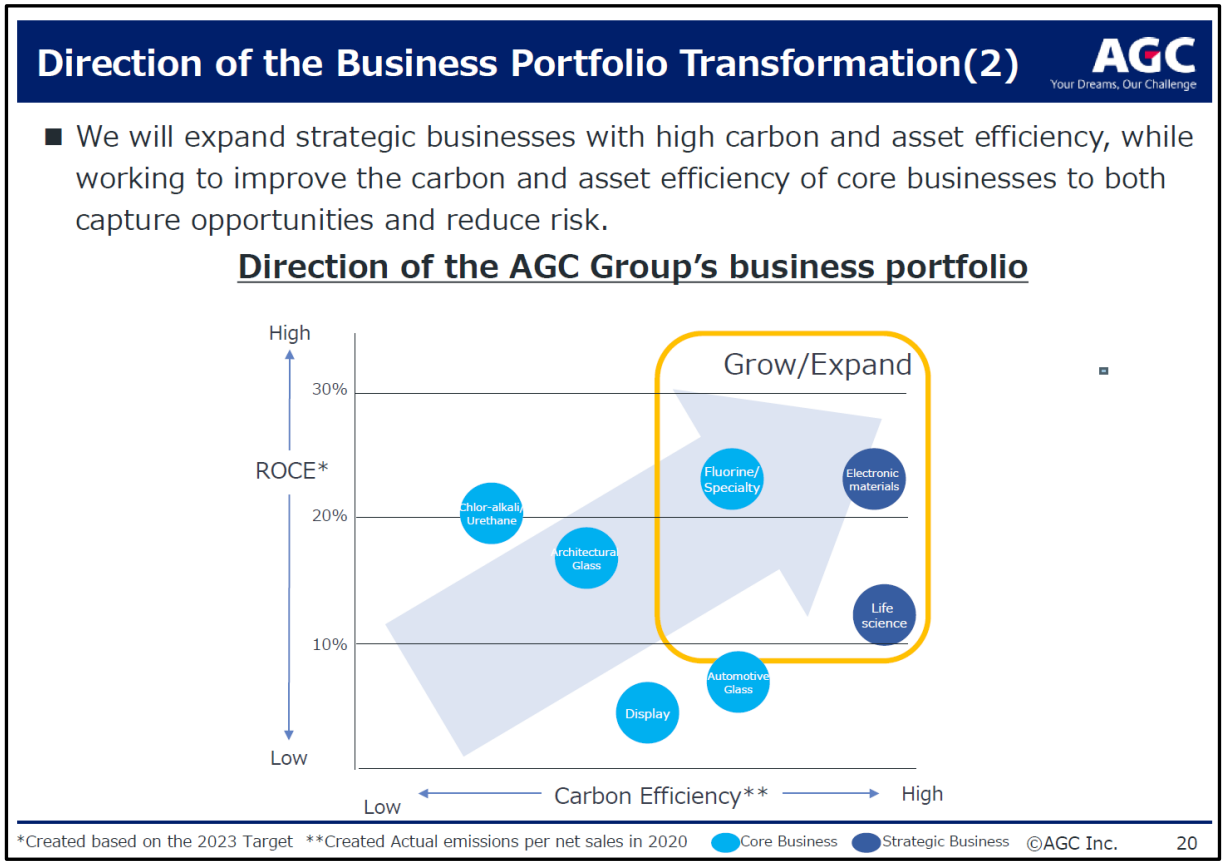
In its financial results presentation materials, the company describes its goals and progress on "climate change and decarbonization" as part of its non-financial data disclosure.



Source: Mitsui Fudosan, "Financial Results and Business Highlights for Summary of 1Q, FY 2022", p.45

AGC

At ESG briefings, the company charts its business portfolio in terms of the relationship between the carbon efficiency of its products and asset efficiency, and visualizes businesses expected to grow and expand through decarbonization.



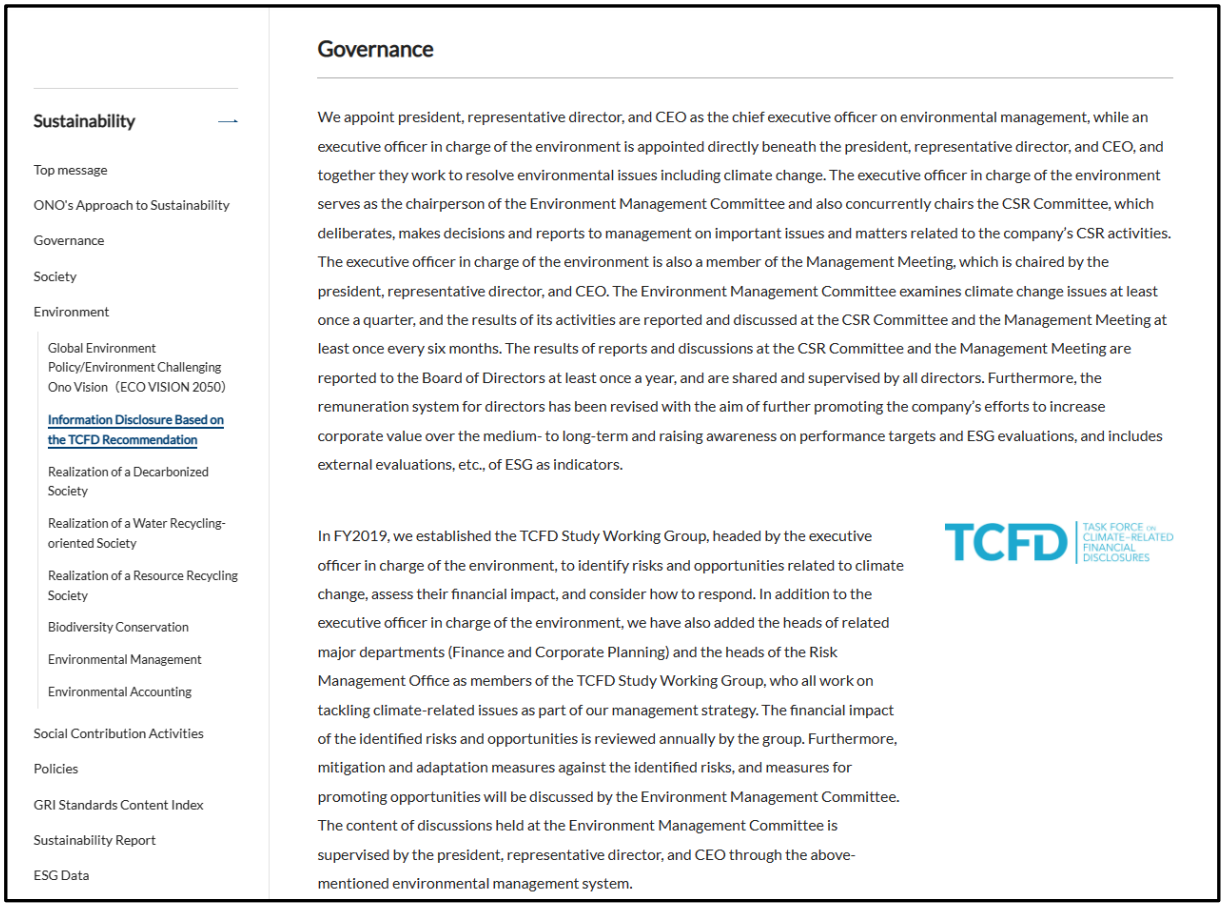
Source: AGC, "ESG Briefing: 'AGC's Sustainability Management -Addressing Climate Change Issues-'", p.20

iii) Disclosure on corporate websites

Corporate websites are useful media, especially for companies that have begun to make disclosure efforts, in that it enables them to systematically browse and obtain information on a wide variety of information and to update it as needed. Exemplary TCFD disclosures on corporate websites are shown.

Ono Pharmaceutical

A separate disclosure page based on TCFD recommendations has been set up on the sustainability environment page to facilitate access to information for investors and others.



Sustainability

Top message
ONO's Approach to Sustainability
Governance
Society
Environment
Global Environment Policy/Environment Challenging Ono Vision（ECO VISION 2050）
Information Disclosure Based on the TCFD Recommendation
Realization of a Decarbonized Society
Realization of a Water Recycling-oriented Society
Realization of a Resource Recycling Society
Biodiversity Conservation
Environmental Management
Environmental Accounting
Social Contribution Activities
Policies
GRI Standards Content Index
Sustainability Report
ESG Data

Governance

We appoint president, representative director, and CEO as the chief executive officer on environmental management, while an executive officer in charge of the environment is appointed directly beneath the president, representative director, and CEO, and together they work to resolve environmental issues including climate change. The executive officer in charge of the environment serves as the chairperson of the Environment Management Committee and also concurrently chairs the CSR Committee, which deliberates, makes decisions and reports to management on important issues and matters related to the company's CSR activities. The executive officer in charge of the environment is also a member of the Management Meeting, which is chaired by the president, representative director, and CEO. The Environment Management Committee examines climate change issues at least once a quarter, and the results of its activities are reported and discussed at the CSR Committee and the Management Meeting at least once every six months. The results of reports and discussions at the CSR Committee and the Management Meeting are reported to the Board of Directors at least once a year, and are shared and supervised by all directors. Furthermore, the remuneration system for directors has been revised with the aim of further promoting the company's efforts to increase corporate value over the medium- to long-term and raising awareness on performance targets and ESG evaluations, and includes external evaluations, etc., of ESG as indicators.

In FY2019, we established the TCFD Study Working Group, headed by the executive officer in charge of the environment, to identify risks and opportunities related to climate change, assess their financial impact, and consider how to respond. In addition to the executive officer in charge of the environment, we have also added the heads of related major departments (Finance and Corporate Planning) and the heads of the Risk Management Office as members of the TCFD Study Working Group, who all work on tackling climate-related issues as part of our management strategy. The financial impact of the identified risks and opportunities is reviewed annually by the group. Furthermore, mitigation and adaptation measures against the identified risks, and measures for promoting opportunities will be discussed by the Environment Management Committee. The content of discussions held at the Environment Management Committee is supervised by the president, representative director, and CEO through the above-mentioned environmental management system.

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

Source: Ono Pharmaceutical website, "Information Disclosure Based on the TCFD Recommendation" (https://sustainability.ono-pharma.com/en/themes/121)

In some cases, the layout has been altered with the permission of the disclosing company. Furthermore, the publication of case examples does not guarantee its full compliance with TCFD's recommendations.