

# **TCFD Report 2025**

**Disclosure Based on the  
TCFD Recommendations**



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# 1. Basic Approach

With extreme weather around the world causing a rising number of major natural disasters, JSR Group sees responding to the problem of climate change currently facing society as one of the most important issues for the company, and we are therefore actively working to reduce greenhouse gas (GHG) emissions both internally and externally.

In October 2020, we announced our support for the TCFD\* recommendations and began disclosing information based on the TCFD framework, working with all stakeholders to address climate change issues.

\* TCFD (Task Force on Climate-related Financial Disclosures): Founded by the Financial Stability Board in 2015. In June of 2017, the TCFD recommended that financial institutions, companies, governments, and the like disclose their climate change impacts in their financial reports. Dissolved in October 2023, IFRS is now responsible for corporate climate change-related information.

Governance	Strategy	Risk Management	Indicators and Targets
Development of a managerial governance structure relating to climate change risks and opportunities	Analysis of impacts that climate change-related risks and opportunities will have on business, strategic and financial planning	Development of framework for assessing and managing climate change-related risks and opportunities	Establishment and progressive disclosure of metrics and targets for managing risks and opportunities

## 2. Disclosure Based on the TCFD Recommendations

### (1) Governance

JSR group utilizes a supervisory structure, overseen by the Board of Directors, to examine and carry out appropriate responses to issues that could potentially pose business risks or represent business opportunities. With the aim of strengthening supervision of risks and opportunities related to sustainability, including responses to climate change, as well as progress management and regular monitoring of KPIs and targets, the Board of Directors receives reports twice a year, shares issues, and discusses and deliberates on future action plans and business strategies for the whole Group.

Furthermore, JSR group has established the Sustainability Promotion Committee, chaired by the CEO and President, as a cross-functional meeting body to advance the implementation of sustainability activities. Under the Sustainability Promotion Committee, we established the Sustainability Planning Committee, Environment, Safety and Quality Committee, the Risk Management Committee, and the Corporate Ethics Committee (each chairperson of which concurrently serves as a member of the Sustainability Promotion Committee), with the Sustainability Promotion Committee overseeing all of these committees.

In particular, with regard to climate change response, the Sustainability Planning Committee, which is responsible for planning overall strategies on sustainability, sets the direction of company-wide activities, while the Environment, Safety and Quality Committee is responsible for approving the action plan related to climate change of the entire organization and evaluating and verifying the results of activities. The Risk Management Committee is responsible for managing the implementation of and improving response policies and response plans with regard to apparent and latent risks and opportunities identified through assessments. The Sustainability Promotion Committee supervises and guides the activities of these three committees and strives to strengthen management and advance activities through regular meetings held four times a year and extraordinary meetings.

> [Sustainability Promotion Committee](#)

#### **Board of Directors discussions that included climate change (FY2024)**

- Report on progress regarding the plan to switch to renewable energy, etc. for FY2023 and the implementation plan for FY2024 to reduce GHG emissions (April)

Reference: All capital investment projects submitted to the Company's Executive Committee and Board of Directors for investment return calculation are subject to calculation of returns using Internal Carbon Pricing (ICP).

## (2) Strategy

The vision of JSR Group's Medium-Term Management Plan is to generate value for all stakeholders and to create a resilient organization that adapts to all environmental changes with the aim of achieving sustainable growth. The entire JSR Group is working on climate change as it is considered to be one of the most important themes to be addressed. In addition, utilizing the TCFD framework, we view climate change from the two aspects of “opportunity” and “risk,” and are advancing efforts to address corporate social responsibilities and to build further competitive advantages.

JSR Group analyzed risks and opportunities based on the two scenarios announced by the Intergovernmental Panel on Climate Change (IPCC), the International Energy Agency (IEA), and other organizations: namely, a global average temperature increase by 4°C or more and a global average temperature kept below 2°C as agreed in the Paris Agreement (partly within 1.5°C). In turn, we reaffirmed the need for JSR Group as a whole to take action to solve the climate change issue. Specifically, we will focus on the following themes for each business, incorporate them into future business plans, and quantify their financial impact.

Furthermore, we introduced an Internal Carbon Pricing (ICP) mechanism in May 2022 for the decision-making process for new investments required to advance each business. In investment financing and business plans involving new investments, additional expenses based on ICP are included as part of the required costs, and future cash flows are calculated/discounted and reflected in the investment return calculations. In this way, we incorporate into our decision-making process for investments not only the acceleration of our strategy and the economic perspective, but also the perspective of GHG emission control as a response to climate change.

### **Climate-Related Risk Significance Assessment**

- **Socio-economic scenario assumptions**
- **Formulation of business impact scenarios and determination of degree of impact**

### **Climate Change Scenario Analysis (Qualitative Determination)**

- **Investigation of risk and opportunity impact stemming from changes in JSR's business environment (scenarios) as a result of climate change**

### **Climate Change Scenario Analysis (Quantitative Determination)**

- **Quantification of impact that JSR scenarios will have on future business strategy and financial affairs, and strategic incorporation of results**

### **Identification of Potential Implementation Measures**

- **Determination of climate change strategy implementation measures and selection of management metrics**

## Identification of Climate-Related Risks and Opportunities and Impact Assessment through Scenario Analysis

### ①Analysis and Assessment Overview

#### —Assumed period:

until FY2050

#### —Scenarios used:

1.5/2°C: IPCC\_RCP1.9/2.6, IEA\_B2DS, etc.

4°C: RCP8.5

#### —Definition of time horizon:

short term (5 years), medium term (10 years), long term (30 years)

#### —Scenario analysis:

Digital Solutions Business, Plastics Business, Life Sciences Business

#### —Definition of impacts:

Small: Somewhat affects the strategy of JSR or business divisions

Medium: Requires a major change in the strategy of a business division

Large: Requires a major change in JSR's overall business strategy

#### —Process of identification and assessment

- ( i ) Assumption scenarios: We selected scenarios that would serve as assumptions for the analysis, and comprehensively identified risks and opportunities that could affect our business in each of the 1.5/2°C and 4°C scenarios, from the perspective of both external factors such as laws and regulations and industry trends, and internal factors such as the current status and future strategies of JSR Group.
- ( ii ) Qualitative analysis: We qualitatively assessed the identified risks and opportunities through interviews with business divisions, using a time horizon (three levels: short, medium, and long term) and risk severity (five levels).
- ( iii ) Quantitative analysis: We estimate quantitative financial impact for some risks and opportunities. We expect to broaden the scope of the estimates in the future.
- ( iv ) Formulation of countermeasures: The Sustainability Planning Committee, which is in charge of overall sustainability strategy planning together with the Sustainability Promotion Department, took the lead in studying countermeasures to minimize risks and maximize opportunities, and set management indicators. The results of this analysis were reported at the Sustainability Promotion Meeting held in July 2022.

## ②Analysis and Assessment Results

### ( i ) Impact Scenarios and Degree of Business-Specific Impact

 Small ← Size of Impact → Large

High-Impact Risks / Opportunities	Risk	Opportunity	Impact on Business			Impact period
			Digital Solutions	Life Sciences	Plastics	
World of +1.5°C						
Increased opportunities for life-cycle CO <sub>2</sub> reduction (bring attention to climate change challenges)		✓				Short term
Strengthening of GHG emissions regulations	✓					Medium term
Establishment and increase of carbon costs	✓					
Emergence of customers demanding decarbonated products (e.g., RE100)	✓					
Evolution of low-carbon energy sources	✓	✓				
Increased demand for environmentally-beneficial products	✓	✓				
Fundamental lifestyle transformation		✓				
Mainstream adoption of sustainable finance	✓					
Change in how human resources are secured	✓					Long term
Popularization of advanced decarbonization technology	✓	✓				
Change in automotive industry / Increased mainstream adoption of EV	✓	✓				
Increased need for recycling / reuse of tire materials	✓	✓				
Expansion in demand for recycled and recyclable resins						
More frequent flooding and more severe storm and flooding damage in Japan	✓					
World of +4°C						
Increased opportunities for life-cycle CO <sub>2</sub> reduction (bring attention to climate change challenges)		✓				Short term
More frequent flooding and more severe storm and flooding damage	✓					Medium term
Rise in sea levels	✓					Long term
Rise in temperature	✓					
Supply chain disruption due to more severe storm and flooding damage	✓					
Fundamental lifestyle transformation		✓				

( ii ) Significant Risks and Opportunities and Direction of JSR Group's Response

Depending on the assessment results, we will proceed to address items from large to medium impacts.

**Risks**

Anticipated Environmental Changes	Category	Factors (qualitative analysis results)	Direction of JSR Group's Response	Remarks/Supplementary Explanation
Increased energy costs because of carbon pricing	Transition	<ul style="list-style-type: none"> <li>■ Stronger GHG emissions regulations</li> <li>■ Carbon price setting and steep price rises</li> <li>■ Emergence of customers who demand decarbonized products (RE100, etc.)</li> </ul>	<b>Drive to net zero GHG emissions</b> <ul style="list-style-type: none"> <li>■ Capital investment in measures to reduce emissions (energy conservation)</li> <li>■ Capital investment in measures to reduce emissions (fuel switching)</li> <li>■ Greater energy cost burden (switch to renewable energy electric power)</li> </ul>	<ul style="list-style-type: none"> <li>■ Assuming an increase in energy response costs due to regulatory compliance and levies (carbon tax) and a sharp rise in raw materials prices, and assuming a carbon price of 18,260 yen/CO2 ton in 2030 (based on the IEA WEO2022 NZE scenario, converted at 130 yen/USD), carbon pricing is expected to have a maximum financial impact of about 3 billion yen.</li> <li>■ Under the 1.5°C scenario, the in-house and public energy mix is expected to increase, and energy procurement costs are expected to fluctuate. Therefore, by switching to renewable energy and promoting decarbonization, we expect to realize a cost reduction of approximately 420 million yen. On the other hand, in the 4°C scenario, failure to take such measures is expected to cost about 1.0 billion yen.</li> <li>■ As measures to curb GHG emissions, we will reduce the total amount of energy used and advance energy-saving improvement activities at our sites and facilities. In particular, we plan to introduce digital technology to the temperature and humidity control systems in clean rooms, which consume a large amount of energy and pursue further efficiency improvements throughout the supply chain, including constantly monitoring operation status. We plan to gradually switch to renewable energy sources for the electricity used at each business site. Since the procurement of renewable energy is largely subject to national, regional, and facility restrictions, we will choose reasonable and</li> </ul>
Rising prices for raw material because of carbon pass-through		<ul style="list-style-type: none"> <li>■ Advance of low-carbon energy sources</li> </ul>	<ul style="list-style-type: none"> <li>■ Greater raw materials cost burden</li> </ul>	
Ensuring corporate value		<ul style="list-style-type: none"> <li>■ Mainstreaming of sustainable finance</li> <li>■ Changes in how human resources are recruited</li> </ul>	<ul style="list-style-type: none"> <li>■ Winning trust by disclosing sufficient information</li> </ul>	



				<p>sustainable means that match the actual conditions at each site, aiming for a 30% reduction in GHG emissions by 2030, compared to 2020, and a net-zero GHG emissions by 2050. JSR Group published a SBT Commitment Letter in December 2023. We plan to raise our GHG reduction target to the level required by SBT and develop further initiatives, including in the supply chain.</p>
Damage caused by disaster	Physical (acute)	<p>■ More frequent flooding and more severe storm and flooding damage in Japan</p>	<p>■ Sufficient preparation in advance of disasters</p> <p>■ BCM/BCP formulation in preparation for disasters</p>	<p>■ Regarding physical risks, we are currently conducting risk assessment by location and will continue to quantify these risks in the future. Specifically, based on the 4°C scenario, we are identifying areas that may be affected by storm surge, flooding, etc., and using the World Resources Institute (WRI) Aqueduct Water Risk Atlas* to identify water risk/stress at all JSR Group manufacturing sites and upstream suppliers' manufacturing sites. We plan to share the results of the survey with some of our sites in China, Europe, and North America, where water risk and stress are high, and conduct interviews to understand the actual situation. This will be followed by consideration given to various forms of collaboration through supplier engagement.</p>
Maintenance of work and social environment	Physical (chronic)	<p>■ Air temperature rise</p>	<p>■ Preservation of the business environment</p> <p>■ Environmental conservation in the supply chain and response to changes</p>	<p>■ With regard to physical preparedness for natural disasters, etc., and BCM/BCP in the event of such occurrences, each business site has taken appropriate measures according to the environmental conditions unique to each region. We will continue our efforts to ensure sustainable business operations.</p> <p>&gt; <a href="#">Risk Management</a></p> <p>* Aqueduct Water Risk Atlas: A database platform provided by the World Resources Institute (WRI), a non-profit organization. The database aggregates risk factors from various perspectives related to water.</p>

## Opportunities

Anticipated Environmental Changes	Factors (qualitative analysis results)	Direction of JSR Group's Response	Remarks/Supplementary Explanation
Industry growth resulting from responding to environmental changes	<ul style="list-style-type: none"> <li>■ Increasing momentum to reduce life cycle CO2 (closer scrutiny of climate change problem)</li> <li>■ Spread of advanced decarbonization technologies</li> <li>■ Increasing demand for products that benefit the environment</li> <li>■ Changes in how lifestyles are structured</li> <li>■ Impact of changes in automobile industry / EVs becoming mainstream</li> <li>■ Increased demand for recycled &amp; recyclable plastics</li> </ul>	<p><b>Digital Solutions Business</b></p> <ul style="list-style-type: none"> <li>■ Business response to conserve energy in IT equipment and advance IoT built to respond to climate change</li> </ul> <p><b>Life Sciences Business</b></p> <ul style="list-style-type: none"> <li>■ Business response to accelerating drug development, advancement of personalized medicine</li> </ul> <p><b>Plastics Business</b></p> <ul style="list-style-type: none"> <li>■ Business response to diversification (lighter,</li> </ul>	<p>For JSR Group's three main businesses, we see opportunities as follows. We will continue to look at market trends and prepare for them from a long-term perspective, while taking timely and prompt action, including modifying our strategy (response).</p> <p><b>Digital Solutions Business</b></p> <p>Through our miniaturization technology, we will improve the processing capacity and data volume of semiconductors and contribute to the overall reduction of energy consumption by making them smaller, lighter, and more energy efficient. In addition, we will continue to address climate change issues by supporting the evolution of new materials, heat dissipation, and packaging technologies required for power semiconductors, and by steadily supporting the increasing demand for semiconductors used in EVs. Since semiconductors are also indispensable in responding to the digitalization and various IoT demands for the realization of a smart society, we will continue to collaborate with all stakeholders and contribute to solving social issues as a company that underpins the changes and evolution of life structures.</p> <p>In order to steadily advance these efforts, it is necessary not only for us to help ourselves, but also for the semiconductor industry as a whole to join forces and develop these efforts into a comprehensive effort. JSR Group is a</p>

		quieter) resulting from transition to EVs and evolution of circular economy	<p>founding member of the Semiconductor Climate Consortium (SCC) (November 2022).</p> <p><b>Life Sciences Business</b></p> <p>We expect that changes in our living environment due to climate change will increase the importance of health management and prevention of infectious diseases and other illnesses and diseases, and that business opportunities will expand and increase. Based on the expectation that accelerated development of pharmaceuticals, including in vitro diagnostics, and personalized medicine will be required in the future, we will respond to climate change issues by promoting the use of non-petroleum packaging materials, in addition to direct GHG emission reductions throughout the Group.</p> <p><b>Plastics Business</b></p> <p>We will continue to develop next-generation products by actively applying and introducing sustainable raw materials, including obtaining ISCC PLUS certification. From a medium- to long-term perspective, we will also create and study resource-recycling business models and contribute to the realization of a sustainable society by providing environmentally friendly materials and eco-systems. In terms of applications, we will continue to specialize in high-performance, high-value-added products for EVs and expand our customer portfolio. By cultivating new markets, we will continue to contribute to society through the development and sale of high-performance plastics.</p>
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### (3) Risk Management

JSR Group believes that preventing major crises and minimizing their effects on business activities should they occur are important management issues. Given this, we have formulated Risk Management Policies and empowered the Risk Management Committee to lead our risk management efforts.

We have been operating our own risk management system since FY2009, and under the leadership of the Risk Management Committee, we regularly identify risks in all units in Japan and abroad, including Group companies. With regard to climate change, risks, such as carbon pricing and growing regulations worldwide, which are particularly urgent and very important, are also regarded and discussed as management-level risks. We organize and assess transition risks as risks related to business strategies and physical risks as risks associated with business operations.

The identified risks are mapped based on the degree of impact on management and the frequency of occurrence. Risks that may have a significant impact on business continuity are positioned as JSR Group Risk Factors and are addressed based on priority. By monitoring and periodically reviewing risks identified by management, we are working to build and maintain a system to prevent risks and prepare for crises.

Please refer to "[Risk Management](#)" for more details.

## (4) Indicators and Targets

### ①GHG Emissions Reduction Targets Toward Net Zero GHG Emissions in 2050

JSR Group announced in March 2021 that it aims to achieve net zero GHG emissions in 2050. In December 2021, we set a milestone for achieving this target: reducing GHG emissions by 30% for the entire JSR Group by FY2030 (base year: compared to FY2020).

Target 1	Reduce greenhouse gas emissions (Scope 1 + Scope 2) by 30% by FY2030 (compared to FY2020)
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Metrics	Boundary	Unit	Base Year	Result			
			FY2020 <sup>*1</sup>	FY2021 <sup>*1</sup>	FY2022	FY2023	FY2024
Scope 1	JSR Group	1,000 tons-CO <sub>2</sub> e	35	35	34	34	34
Scope 2			205	195	180	186	169
Scope 1 + Scope 2 total			240	230	214	220	202
Progress (base year: compared to FY2020)		%	—	-4	-11	-8	-16

\*1 Numerical values exclude the Elastomers Business, which was business transferred in April 2022.

### Scope3

Metrics	Boundary	Unit	FY2020	FY2021	FY2022	FY2023	FY2024
Scope3	JSR Group	1,000 tons-CO <sub>2</sub> e	870	1,067	437	741	776

### Breakdown of Scope 3

Category		Boundary	Unit	FY2020	FY2021	FY2022	FY2023	FY2024
1	Purchased goods and services	JSR Group	1,000 tons-CO <sub>2</sub> e	762	968	241	614 <sup>*3</sup>	629
2	Capital goods			61	46	130 <sup>*2</sup>	69	61
3	Fuel and energy related activities not included in Scope 1 or 2			7	6	48 <sup>*2</sup>	41	47
4	Transportation and delivery (upstream)			8	9	< 1	< 1	25 <sup>*4</sup>
5	Waste from business operations			20	24	14	13	11
6	Business travel			1	1	1	1	1
7	Employee commuting			3	3	2	2	2
8	Leased assets (upstream)			1	1	1	1	< 1
9	Transportation and delivery (downstream)			8	9	< 1	< 1	< 1 <sup>*4</sup>
10	Processing of sold products			N/A	N/A	N/A	N/A	N/A
11	Use of sold products			N/A	N/A	N/A	N/A	N/A
12	Disposal of sold products			N/A	N/A	N/A	N/A	N/A
13	Leased assets (downstream)			< 1	< 1	< 1	< 1	< 1
14	Franchises			N/A	N/A	N/A	N/A	N/A
15	Investments			N/A	N/A	N/A	N/A	N/A

\*1 Numerical values exclude the Elastomers Business, which was business transferred in April 2022.

\*2 For Categories 2 and 3, the boundary has been set to JSR Group based on the FY2022 results.

\*3 The calculation method for Category 1 has been changed from FY2023 results.

\*4 For Categories 4 and 9, the boundary has been set to JSR Group based on the FY2024 results.

In FY2024, our GHG emissions decreased by 8% from the previous year to 202,000 t- CO<sub>2</sub>e, and by 16% from FY2020, the base year, as a result of continued implementation of energy conservation advancement activities and switching to renewable energy for purchased electricity.

Our energy consumption in FY2024 was 85,000 kL, 8% decrease from the previous fiscal year.

## ②GHG Emissions Reduction Targets Consistent With the 1.5°C Target

In FY2025, JSR Group reviewed its GHG emissions reduction targets to align them with the 1.5°C target of the Paris Agreement, and obtained certification under the Science Based Targets initiative (SBTi).

Category		Target2
Scope1	Direct GHG emissions from the company	JSR Corporation commits to reduce absolute Scope1 and 2 GHG emissions 42% by 2030 from a FY2023 base year.
Scope2	Indirect emissions resulting from the use of electric power , heat , and steam supplied by other companies	
Scope3	Indirect emissions other than Scope1 and Scope2(emissions from other companies relating to business operators' activities)	JSR Corporation also commits that 85% of its suppliers by emissions covering purchased goods and services, capital goods and upstream transportation and distribution, will have science-based targets by FY2029.

\*1 Science-based targets align with the goals of the Paris Agreement, which aim to keep the global temperature rise well below 2°C above pre-industrial levels and to pursue efforts to limit it to 1.5°C.

\*2 The Science Based Targets initiative (SBTi) is a joint international initiative by CDP, the United Nations Global Compact, the World Resources Institute (WRI), and the World Wide Fund for Nature (WWF).

We will continue to advance the reduction of the environmental impact of our business activities by setting these goals as the new GHG emissions reduction target for JSR Group.

> [JSR Corporation's greenhouse gas emissions reduction targets have been approved by Science Based Targets initiative \(SBTi\) | 2025 | News | JSR Corporation](#)

Scope 1 and Scope 2 GHG emissions in FY2024 were 220,000 t- CO<sub>2</sub>e, 7% decrease from the base year of FY2023.

			base year	Result
Metrics	Boundary <sup>*5</sup>	Unit	FY2023	FY2024
Scope1	JSR Group	1,000 tons-CO <sub>2</sub> e	37	37
Scope2			200	183
Scope1 + Scope2 total			237	220
Progress (base year: compared to FY2023)		%	—	-7

### Scope3

Metrics	Boundary <sup>*5</sup>	Unit	FY2023	FY2024
Scope3	JSR Group	1,000 tons-CO <sub>2</sub> e	953	891

## Breakdown of Scope 3

Category		Boundary <sup>*5</sup>	Unit	FY2023	FY2024
1	Purchased goods and services	JSR Group	1,000 tons-CO <sub>2</sub> e	678	630
2	Capital goods			86	77
3	Fuel and energy related activities not included in Scope 1 or 2			47	42
4	Transportation and delivery (upstream)			35	36
5	Waste from business operations			12	11
6	Business travel			1	1
7	Employee commuting			4	4
8	Leased assets (upstream)			1	< 1
9	Transportation and delivery (downstream)			< 1	< 1
10	Processing of sold products			76	71
11	Use of sold products			N/A	N/A
12	Disposal of sold products			13	19
13	Leased assets (downstream)			< 1	< 1
14	Franchises			N/A	N/A
15	Investments			1	2

\*5 In accordance with the acquisition of SBTi certification, the boundary for FY2023 and FY2024 has been changed from the calculation of Target 1, and Group companies over which JSR Corporation has financial control are included in the scope of calculation.

To ensure transparency and accuracy of some of the GHG emissions data (Scope 1 and 2) that we publish, we undergo third-party verification by a third-party organization.

> [Verification Opinion \(FY2023\)](#)

> [Verification Opinion \(FY2022\)](#)

## —FY2050 Targets

JSR Group will continue to aggressively take on the challenge of achieving “net zero” GHG emissions in 2050 in our own categories (Scope 1 and Scope 2).