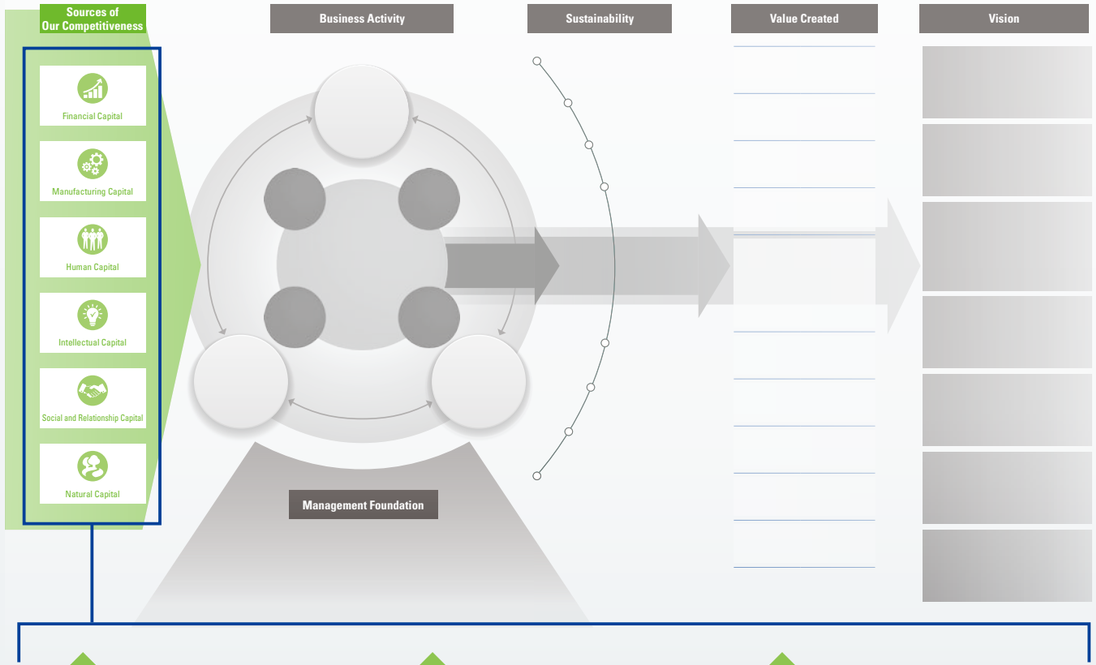
Sources of competitiveness that support the sustainable development of the Shin-Etsu Chemical Group



Financial Capital

We will promote capital investment for sustainable growth while further strengthening our financial base through earnings growth

- Equity ratio **81.8%**
- Net assets **4,026.2 billion yen**
- Capital expenditures **318.0 billion yen**

Manufacturing Capital

We aim to achieve sustainable growth by monitoring global demand trends and making timely and appropriate capital investments

- Domestic production bases: **17 companies, 40 bases**
- Overseas production bases: **17 countries, 65 bases**

Human Capital

Developing optimal staffing with T-shaped skill human resources in pursuit of a more efficient, smarter, and leaner way of working

- Operating income per employee **38.8 million yen**

Intellectual Capital

Promoting rapid, field-linked R&D and strategic IP management to protect our business

- Equity ratResearch centers located inside plants
- Selected as Clarivate Top 100 Global Innovator™ for **12 consecutive years**

Social and Relationship Capital

Respecting human rights and emphasizing the building of healthy relationships with local communities

Natural Capital

Having planned to achieving carbon neutrality by 2050, we will focus even more on efforts to reduce greenhouse gas emissions

- Greenhouse gas emissions (emission intensity index of production volume relative to FY1990) **54.2%**

Financial Capital

We will promote capital investment for sustainable growth while further strengthening our financial base through earnings growth

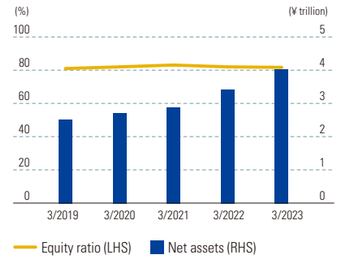
Improved profitability through full production effect and sales capabilities

For the fiscal year ended March 31, 2023 (FY2022), as in the previous fiscal year, operating income in the Infrastructure Materials business grew significantly thanks to our full production effect and sales capabilities in PVC resin, and other business segments also achieved double-digit profit growth rates. Net income attributable to owners of parent was ¥708.2 billion (up 42% year on year), a significant record high for the second consecutive fiscal year. Total net assets were ¥4,026.2 billion (up 17% from the end of the previous fiscal year), and the equity ratio remained above 80%. On these solid financial foundations, the Company further improved its capital efficiency to 33.6% ROIC and 19.7% ROE.

Equity ratio/Net assets

Equity ratio (as of March 31, 2023) **81.8%**

Net assets (as of March 31, 2023) **4,026.2** billion yen

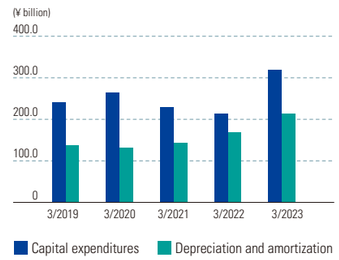


Continued capital investment for sustainable growth

To enhance competitiveness and sustain growth, we seek to enhance corporate value through the active and timely use of internal reserves. The Shin-Etsu Group's capital investment in FY2022 totaled ¥318 billion (up 48.7% year on year). We made progress as planned with investments to increase capacity in Shintech's PVC resin and high-performance silicone product lines, and promoted capital investments to ensure a stable supply and improve the quality of silicon wafers and other electronics materials. Capital investment for FY2023 is expected to be ¥380 billion.

Capital expenditures/Depreciation and amortization

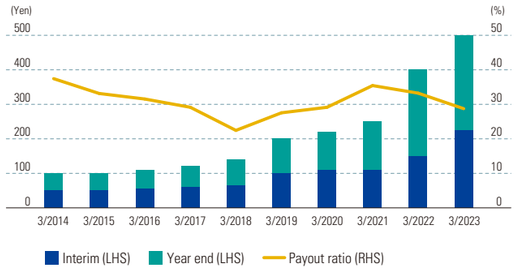
Capital expenditures (for the year ended March 31, 2023) **318.0** billion yen



Flexible share buybacks on top of eighth consecutive year of dividend hikes

Our basic policy is to focus on growing business earnings and maintaining solid financial foundations while returning the results of our management efforts to our shareholders in a long-term and stable manner, with a medium- to long-term dividend payout ratio of around 35% as a guide. Accordingly, in FY2022 we paid an annual dividend of ¥500 per share, an increase of ¥100 from the previous fiscal year and a payout ratio of 28.7%. This was the eighth consecutive year of increased dividends. Furthermore, as part of our efforts to return profits to shareholders, we repurchased and retired 11.83 million shares of treasury stock (valued at approximately ¥200 billion), representing 2.8% of the total number of issued shares. Note that on April 1, 2023, the Company executed a 5-for-1 stock split of its common stock.

Cash dividends per share/Payout ratio



Manufacturing Capital

We aim to achieve sustainable growth by monitoring global demand trends and making timely and appropriate capital investments

Basic policy on capital investment

In order to fulfill its supply responsibilities as a material manufacturer, the Shin-Etsu Group makes timely and appropriate capital investments to strengthen stable supply and improve quality based on long-term demand forecasts and requests obtained from industry-leading companies around the world. Our solid financial base and ability to generate cash flow enable us to make flexible decisions and aggressively invest even in an ever-changing business environment.

Current status of capital investment

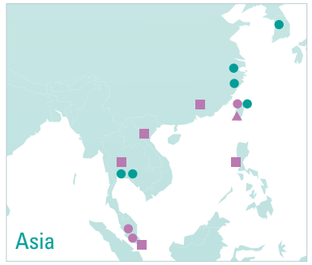
We are steadily making capital investments that support the growth of the Group, including a PVC resin facility expansion project at Shintech Inc. in the U.S., as well as production capacity enhancement, productivity improvements and streamlining, quality improvement, maintenance, upgrades, and environmental measures. The status of major capital investments is as follows.

Investments from 2019 onward (that have been announced)

●: Completion ○: Completion Schedule

Business Segment	Products	Projects	Investment Amount	2019 1H	2019 2H	2020 1H	2020 2H	2021 1H	2021 2H	2022 1H	2022 2H	2023 1H	2023 2H	2024 1H	2024 2H
Infrastructure Materials	Ethylene	New plant built (U.S.)	$1.4 billion			●									
	PVC	New facility expansion [Phase 1] (U.S.)	$1.49 billion						●						
	〃	New facility expansion [Phase 2] (U.S.)	$1.25 billion										○		
Electronics Materials	Photoresists	Production capacity enhancement (Japan, Taiwan)	¥30 billion					Taiwan ●			Naoetsu ●				
	Photomask blanks	Production capacity enhancement (two sites in Japan)	¥14 billion		Naoetsu ●			Takefu ●							
	Preform for optical fiber	Production capacity enhancement (Japan, two sites in China)	¥18 billion	Kashima, Hubei ●			Jiangsu ●								
	Low dielectric constant thermosetting resins for 5G products	Investment in mass production (Japan)	¥3 billion						●						
Functional Materials	Silicones	Production capacity enhancement for various silicone products (U.S.)	¥2.4 billion	●											
	〃	Production capacity enhancement for monomers and polymers (Japan, Thailand, etc.)	¥110 billion	Sequential start-up and completion →						●					
	〃	Investments contributing to reducing greenhouse gas emissions (Japan) (Expansion of gas turbine power generation facilities and products that contribute to the environment)	¥20 billion						Sequential start-up and completion →		●				
	〃	Production capacity enhancement for high-performance products (three sites in Japan)	¥80 billion								Sequential start-up, completion date undecided →		○		
	Cellulose derivatives	Expansion of manufacturing facilities (Japan, Germany)	¥20 billion		●										

Production bases for major products: PVC, Silicones, Cellulose derivatives, Semiconductor silicon, Rare earth magnets, Photoresists



Overseas production bases: 17 countries, 65 bases

In addition to building a local production system directly linked to local demand, the Shin-Etsu Group has 65 overseas production bases in 17 countries, mainly in regions with low country risk, to ensure that our production costs are the most competitive in the world. By establishing multiple production bases globally, we are strengthening our ability to ensure a stable supply to our overseas customers, who account for approximately 80% of our sales.

Message from our production site employee

Further boosting capacity at the world's No. 1 PVC plant

Mr. SI

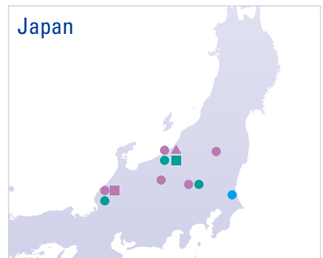
Technology Department, International Division, Shin-Etsu Chemical Co., Ltd.

I'm in charge of the expansion of the PVC manufacturing plant at Shintech's Plaquemine Plant in Louisiana. My main responsibilities are manufacturing process design, procurement of manufacturing facilities and equipment, on-site construction supervision, comprehensive construction process management, and commissioning to confirm plant performance as designed. The current expansion represents approximately 10% of Shintech's PVC production capacity (an increase of 380,000 tons/year) and is expected to further expand sales and strengthen our competitiveness worldwide.

The current global uncertainty has led to soaring material prices and delays in delivery dates, requiring us to adapt our construction work. Nevertheless, the facility expansion project team is working together to complete the construction within the specified budget and timeframe, while adhering to safety first and environmental compliance.

Domestic production bases: 17 companies, 40 bases

We have 17 companies, including Group companies such as Shin-Etsu Handotai Co., Ltd. and JAPAN VAM & POVAL Co., Ltd., as well as 40 production bases in Japan, including Shin-Etsu Chemical's four production bases in Naoetsu (Niigata Prefecture), Takefu (Fukui Prefecture), Gunma Complex (Gunma Prefecture) and Kashima (Ibaraki Prefecture). Especially in Japan, the R&D division is located on the premises of each plant, which quickly develops products that meet the needs of customers and is the starting point of cutting-edge technology as a mother plant.



Message from our production site employee

Increasing the productivity of high-value-added products and contributing to the expansion of our global market share in silicones

Mr. YN

Isobe Plant Silicone Production Dept. 2, Gunma Complex, Shin-Etsu Chemical Co., Ltd.

I've been consistently involved in the expansion of our silicone manufacturing processes from formulation study to equipment design, construction, and even trial runs. The series of expansions being carried out are for silicone products with particularly high added value, and this expansion will contribute to expanding our global market share in silicones.

Our strength lies in our advanced technological capabilities. Instead of reproducing existing facilities, we always treat building facilities as an innovative process. The process of this current facility expansion will not only increase capacity to meet the needs of our customers, but also increase productivity by up to an order of magnitude and drastically reduce the utilities and waste we use, making it friendlier to both people and the environment.

All project members are working together to boost our silicones to the world's No. 1 market share.

Human Capital

Developing optimal staffing with T-shaped skill human resources in pursuit of a more efficient, smarter, and leaner way of working

The Shin-Etsu Group, believing that human resources provide the basis for all business activities, is working to strengthen human capital with "respect for human rights, the development of human resources and promotion of diversity" and "health and safety of employees and contractors" as key issues.

Key Issues Respect for human rights, the development of human resources, and the promotion of diversity

Respect for human rights

The Shin-Etsu Group complies with international codes of conduct and always respects human rights at all its business sites around the world. The Shin-Etsu Group Human Rights Policy stipulates the prohibition of discrimination, the prohibition of damaging human dignity, the protection of privacy, the respect for basic labor rights, and the prohibition of child labor and forced labor. In order to thoroughly enforce these policies, the Human Rights Due Diligence* Subcommittee, established within the Sustainability Committee, establishes a system for investigating human rights risks and consulting and reporting on human rights and promotes human rights awareness and education in cooperation with the Shin-Etsu Chemical's Human Rights Enlightenment Promotion Committee. (See page 25.)

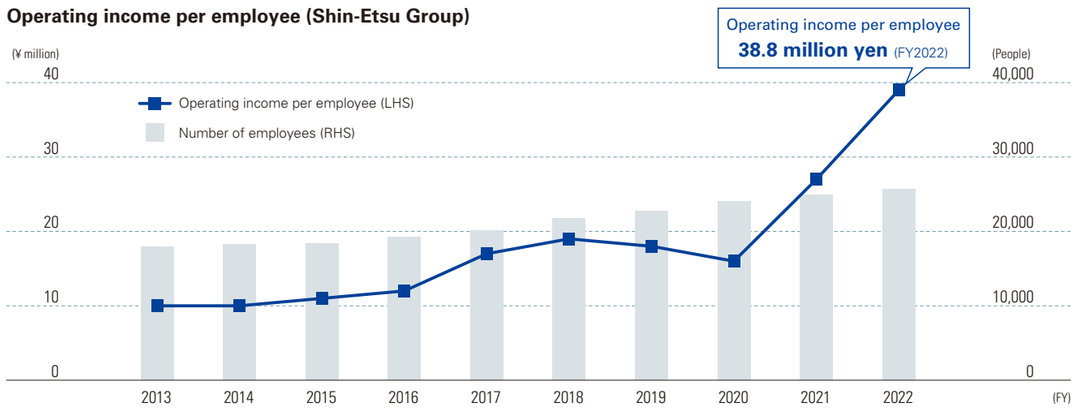
*Human rights due diligence: What companies should do to recognize, prevent and address adverse human rights-related impacts, including developing human rights policies, assessing the impact of corporate activities on human rights, and tracking and disclosing performance.

Developing optimal staffing with T-shaped human resources

One of the major factors supporting the Group's profitability is the development of "T-shaped human resources." The vertical bar of the "T" represents deep expertise in a specific department and field, while the cross bar represents the ability to perform a wide range of work while pursuing a more efficient, smarter, and leaner way of working. In order to develop such human resources, the Group does not carry out one-size-fits-all personnel transfers, but rather places the right people in the right positions over the long term, emphasizing site-driven human resource development centered on on-the-job training (OJT).

This development of T-shaped human resources is what enables our human resources strategy, which places the highest priority on respect for the individual. By accumulating highly specialized knowledge, we have been able to maximize economies of scale during periods of strong demand and maximize the capabilities of existing personnel during periods of weak demand, enabling management to overcome difficult times. In fact, the growth rate of operating income in recent years has greatly exceeded the growth rate of the number of employees, and the productivity per employee has also increased significantly. In addition, our system of allowing each individual to take on a variety of tasks as they gain experience is working to enhance employee competence and engagement.

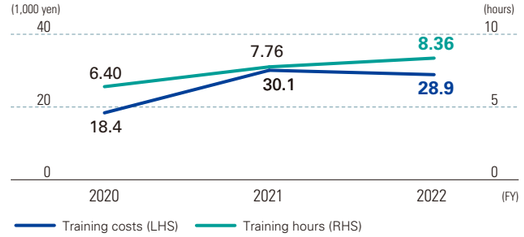
Operating income per employee (Shin-Etsu Group)



Performance-based personnel evaluation system

The Group values the ability to set high goals without fear of failure, and employees' compensation reflects both performance and attitude, with due consideration of the business environment and the difficulty of the goals. We also conduct evaluation training for all managers in charge of performance review to ensure their evaluations are fair and reasonable. Transparency is increased by informing employees about the evaluation criteria. In addition, an interview system is implemented between evaluators and direct reports to facilitate successful communication. During these interviews, each staff member and their immediate supervisor use Communication Sheets to ensure mutual awareness of expectations and set half-year goals. Furthermore, feedback on progress is given for further development of skills.

Training costs and training hours per employee (Shin-Etsu Chemical)



Scope: Employees and seconded employees of Shin-Etsu Chemical
Excludes the auditing student system that was discontinued in FY2021 due to COVID-19.

Human resource development

Recognizing that employee growth leads to company growth, the Shin-Etsu Group supports employee growth through a variety of training programs, including training for each staff level, global communication training, an auditing student system, environmental education, safety education, and mental health education. For example, to ensure smooth business operations around the world, we offer global communication training to improve communication skills in foreign languages. Furthermore, as part of our digitalization efforts, in FY2021 we started digital literacy training for new and young employees, as well as hands-on training in data analysis skills to solve practical problems and AI training for problem-solving learning, both targeted at mid-level employees.

In addition to this kind of systematic training, the Group also places great importance on individualized training that is not one-size-fits-all. On the operational front lines in particular, we believe that true growth is achieved through the accumulation of daily experience. We therefore emphasize OJT, aiming to develop human resources who can demonstrate flexible creativity and initiative.

Training system list

	Training for different staff grades	Specialized education			Environment and safety education	Quality control education	Special education	General education
			AI/MI education					
General manager level	Advanced management training S staff group/ M staff group	Patent training Training for adaptation to internationalization English language training • Meeting skills course I/ II • Presentation skills course I/II • Chinese conversation Classes • Intercultural communication training	Introduction course	DX management training AI management training • Basic training • PBL*2	MI*1 training	Specialized education in environmental control and safety • Supervisor education • ISO education New recruit education	Environmental health and safety education Hazardous materials safety education Industrial Safety and Health Act. Radiation High-pressure gas Mono-press ure, boilers, etc.	QC intermediate course QC basic course	Course for management development training (external training) Auditing student system (1 year)	Mental health seminars • Self-care • Line-care • Human rights awareness training
Section manager level	Middle management training							
Junior manager level	Line management training Staff management training							
Regular employees	Job group change training Mid-career employees Women employees Junior leader training Third-year training New employee induction/ second-phase training							

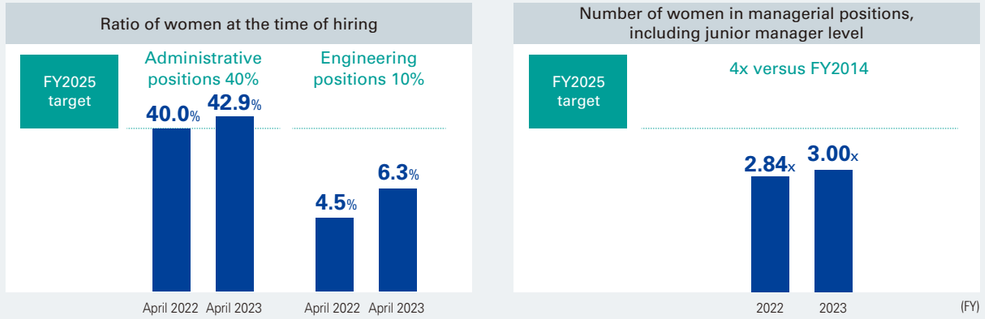
*1 Material Informatics
*2 Problem-based Learning

Human Capital

Promoting the active participation of diverse human resources

The Group is working to promote the active participation of women and create a workplace environment where employees of all walks of life can work to their full potential. So that we can expand our business globally, we are focused on local recruitment overseas as well as the hiring of foreign nationals living in Japan. In April 2019 we raised our mandatory retirement age for employees from 60 to 65 so that more seasoned workers at our production plants can pass on their skills and experience to the next generation.

Five-year targets and progress (starting in FY2021) in the action plan based on the Act on Promotion of Women's Participation and Advancement in the Workplace



Scope: Employees and seconded employees of Shin-Etsu Chemical

Work-life balance

Childcare support system

Employees can take childcare leave up until their children turn three. They can also choose to work shorter hours using our short-time work system as long as their children are still attending elementary school. We also encourage employees to make use of our teleworking system. In FY2022, 151 female employees and 156 male employees utilized our childcare leave system.*

*The length of childcare leave differs depending on the laws of each country or region.

Nursing care support system

We have established a nursing care support system for employees who care for their families and other important individuals as part of our efforts to create an environment in which employees can balance their work duties with nursing care obligations. In FY2014 we started providing a "Health Management and Nursing Care Support" service and set up a consultation hotline through which employees can seek the advice of external experts. In FY2022, three employees (from all consolidated companies in Japan) utilized our nursing care leave system.

Employee message

As a manager, I work with the whole organization in mind

Ms. SF
HR Manager
Shintech Inc.

I work in Shintech's HR department in the Texas area, where my work includes improvements to organizational capabilities, HR development, workplace development, pay and benefits, employee health and safety, and employee risk management.

Shintech complies with regulations – federal, state and local – including equal employment opportunity, discrimination and harassment related to race / religion / sex / national origin, etc. Our employee handbook is one of our initial points of contact in our employer / employee relationship, supported by HR policies in which we communicate our commitment to ensuring a fair and equitable work environment. In addition, Shintech aligns our initiatives with Shin-Etsu's Sustainability Key Issues and Management Objectives.

The HR department aims to be a strategic business partner to the management team. Going forward, we will continue to analyze our position and implement various measures necessary for the development of the Company.

Key Issues Health and safety of employees and contractors

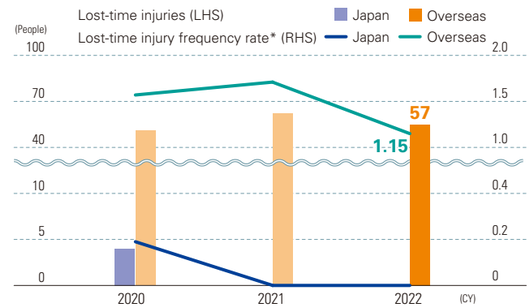
Creating safe and secure workplaces

In aiming to prevent all serious and lost-time accidents, the Group conducts risk assessments to comprehensively identify risks that could lead to injury or illness and is working to create safe and comfortable workplaces by eliminating or minimizing risks.

Participants of safety education programs

(FY)	2018	2019	2020	2021	2022
Shin-Etsu Chemical	11,774	19,411	32,527	39,348	59,343
Consolidated companies	28,013	39,328	46,998	56,236	75,406

Lost-time injuries and changes in frequency rate

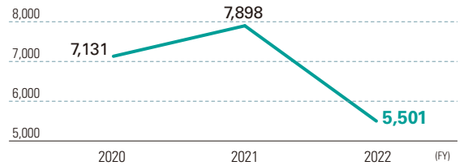


*Rate of recordable injuries per million hours worked

Accident prevention initiatives

As a bottom-up initiative implemented at each worksite, the Group accepts suggestions from and listens to the concerns of workers who have experienced close-call incidents themselves and employs measures to address even the slightest of concerns. At the same time, by sharing the information within and outside of the Group, we strive to roll out safety measures as well as preventive measures for similar incidents.

Suggestions regarding close-call incidents or other concerns



Please visit the following website page for the suggestions disclosed thus far.
https://www.shinetsu.co.jp/en/sustainability/esg_safety/management/

Physical and mental health of employees

We actively provide health guidance on lifestyle-related diseases, mental health measures, and hold events to improve physical fitness so that our employees can lively work. We've also prepared countermeasure manuals against COVID-19 and other important infectious diseases so we can prevent their spread. In addition, we've set up health and safety committees at the head office and branch offices, as well as health and safety committees at each plant site. These committees get information and guidance from industrial physicians and are working to improve the work environment and promote health.

Employee message

The safety of all employees is our top priority

Ms. SS
PVC Plant Manager
Shin-Etsu PVC (Netherlands)

I have worked for the Shin-Etsu Group as the plant manager for the PVC plant in Pernis in the Netherlands. As a plant manager I am responsible for the operation of the plant. This also includes the health and safety of the people working on site. In the Pernis plant the safety of all employees is our top priority. Plant safety is addressed at all levels in the organization by using well defined procedures and working processes.

HR department reports monthly on the trends of our employee's health to the plant management team.We also conduct regular health checks on all our employees.

To further enhance our focus on working safely in the plant a new safety program was started in January 2023. Working together with an experienced safety consultant the whole organization is involved in this program. Collaboration between own employees and subcontractors is included in this program.

Intellectual Capital

Promoting rapid, field-linked R&D and strategic IP management to protect our business

The Shin-Etsu Group considers R&D to be an important "asset" as well as a "challenge" to pioneer the future, and we are promoting R&D to meet the needs of the times while asking ourselves what the future world will need. We are also strategically managing the valuable intellectual property (IP) obtained through R&D in order to make effective use of it.

The "triangular link" system for rapid response to customer needs

The Shin-Etsu Group's R&D department rapidly develops products tailored to customer needs while keeping an eye on mass production after product development. This is made possible by our unique R&D system that integrates sales, development, and production in a triangular link, with an R&D center located on the production sites. We also promote R&D projects under the direct control of the President in order to meet customer needs and generate new solution ideas. In addition, we are focusing on recruiting and developing human resources who are familiar with digital technology such as AI and are working to improve development efficiency and shorten development time by utilizing materials informatics.

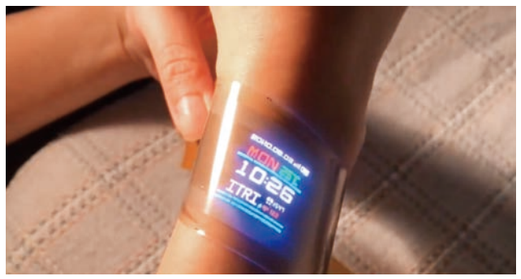
As examples of R&D in existing businesses, we lead the PVC industry in the development of polymerization technology using our proprietary large-scale polymerization reactor and non-scale technology, and in silicon wafers, we are advancing crystal growth technology and solidifying our competitive advantage through R&D that is one step ahead of the competition.

Aggressive product development in new areas with growth potential

In terms of new business areas, we are focusing our R&D efforts on five major priority areas in growth markets where we can leverage our strengths: energy, semiconductor-related materials, high-speed communications at 5G and beyond, healthcare, and materials that contribute to achieving SDGs and carbon neutrality.

In FY2022, we developed a new process technology to realize mass production of micro-LED displays and developed an encapsulant material for mini-LED displays in collaboration with Taiwan's Industrial Technology Research Institute (ITRI). In addition, for electric and hybrid vehicles, where voltages are becoming increasingly high, we developed a new silicone rubber for molding product, the KE-5641-U, which is an ideal sheathing material to improve the flexibility and reduce the weight of high-voltage cables, as well as the TC-BGI series of thermal interface silicone rubber sheets. We also developed the industry's first silicone film-forming emulsion for fiber-treatment applications. Furthermore, we developed a new coating material Sicle™ (pronounced "Cycle") that adds a water-resistance property to paper products such as cardboard and dramatically facilitates their recyclability, and Tersus™ RN, an inorganic thin-film coating liquid which possesses antibacterial/antivirus functions for use in building materials for housing and buildings.

High-voltage cables used in electric vehicles



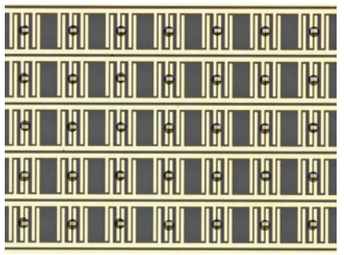
Flexible mini-LED display using materials from Shin-Etsu Chemical

Development of new process technology and transfer parts for micro-LED displays

To achieve mass production of micro-LED displays, which are the most promising candidates for next-generation displays, the key challenge is to improve the complexity and low yield of the microchip transfer process. In response, we have developed, in collaboration with Dexerials Corporation, an innovative technology that can transfer singulated anisotropic conductive film (ACF) with a diameter of 80 μm or less onto the targeted location by laser equipment. Employing this technology, it becomes possible to transfer the singulated ACF only to the designated plate and mount the micro-LED chip on it, facilitating the repair process to remove and compensate for defective chips, which has been a major challenge in the past.

In addition, in collaboration with Group companies Shin-Etsu Engineering and Shin-Etsu Polymer, we developed new transfer parts and transfer equipment. By combining these, it is possible to provide optimal processes to customers. As a one-stop solution provider in the manufacture of micro LEDs, Shin-Etsu Chemical is working to promote and expand the market for micro-LED displays by proposing solutions to customers' problems.

Excimer laser mass transfer equipment



Micro LED chips (34×58 μm) connected by anisotropic conductive film transferred to target location by laser

Strategically protect IP and promote research with acquiring rights in mind

The Shin-Etsu Group protects its IP gained through R&D from infringement by third parties by securing intellectual property rights both in Japan and overseas. At the same time, we search patent publications related to existing and new businesses to avoid infringement of rights. We also strategically manage our intellectual assets by, for example, keeping information that should not be disclosed as confidential knowledge. At present, there are no cases where business operations are hindered by IP.

In addition, we encourage researchers to conduct research with patent rights and other IP rights in mind, and educate them so that they can prepare documents for rights acquisition. We also have a system in place to reward and recognize personnel who have made significant contributions to the Company in the form of patents and other inventions and ideas. As a result of these and other efforts, Clarivate, a global information services company, has recognized Shin-Etsu Chemical as a Clarivate Top 100 Global Innovator™ for 12 consecutive years. The award recognizes companies and institutions that protect original invention ideas with IP rights and successfully commercialize them. We are one of only three companies in the chemical field to have received the award for 12 consecutive years.

Top 100 Global Innovator 2023 Clarivate

From left: Mr. Takashi Kojima, Vice President of Clarivate Analytics (Japan) Co., Ltd., Mr. Matsui, Managing Corporate Officer of Shin-Etsu Chemical, and Mr. Kubota, General Manager, Patent Department

Intellectual Capital

Message from an employee of the R&D Department

Transcending the boundaries of research fields and departments to develop materials for carbon neutrality

Mr. AE

2nd Development Office
Silicone-Electronic Materials Research Center
Shin-Etsu Chemical Co., Ltd.

In recent years, electronic components have become ever more sophisticated and smaller, leading to new amenities that enhance our daily lives across a wide range of domains. At the same time, this evolution of electronic component technology has led to a dramatic increase in the amount of heat generated by the components, requiring new thermal countermeasures to protect the electronic components from heat.

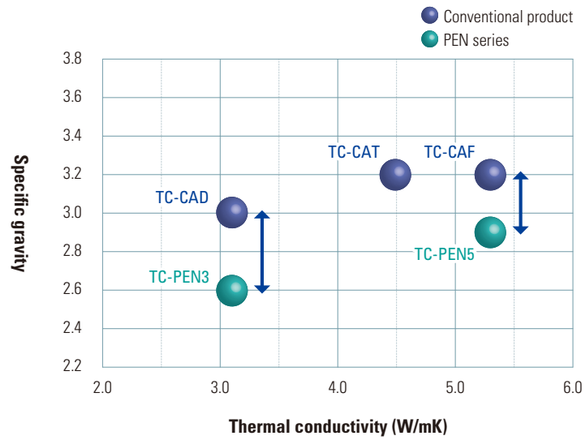
Thermal interface materials we are researching and developing conduct the heat generated by the components to a cooling structure, such as a heat sink, to quickly cool the components. Thermal interface materials have become an indispensable part of our smartphones, computers, cars, trains, LED lighting, and other devices that are essential to everyday life and therefore play a very important role in the development of science and technology.

Thermal interface materials require not only high thermal conductivity, but also long-term durability, strength, and sometimes electrical insulation and flame resistance. We also aim to develop materials that are more efficient and eco-friendlier. Our goal is to develop materials that make effective use of the world's resources and are carbon neutral. Satisfying these requirements and goals requires a thorough knowledge of the properties of materials and their optimal combination. The discovery and synthesis of new materials is very important too. We also need to focus on reducing energy consumption and waste in the production process.

R&D involves many difficulties, but Shin-Etsu Chemical is staffed with professionals from every field. Our day-to-day discussions bring new insights, and the manufacturing and sales departments provide strong support. It's no exaggeration to say that these cross-boundary cooperative relationships are what make Shin-Etsu Chemical a top manufacturer.

If we're able create new high-performance thermal interface materials, we can expect applications in a variety of fields. I hope our R&D will give new perspectives to those who are tackling heat issues and contribute to the development of society as a whole.

Low specific gravity of the TC-PEN series of thermal conductive pads



The TC-PEN series achieves low specific gravity with the same thermal conductivity as conventional products, contributing to weight reduction and fuel efficiency in automotive batteries and other applications that use thermal interface materials over a large area.

Social and Relationship Capital

Respecting human rights and emphasizing the building of healthy relationships with local communities

We are strongly committed to respecting human rights, not only within the Shin-Etsu Group, but across the entire supply chain, to guarantee the stable supply of high-quality products to our customers. We are also endeavoring to build healthy relationships with local communities to ensure smooth business operations in each region.

Respect for human rights

The Shin-Etsu Group respects basic human rights in accordance with the core labor standards established by the International Labour Organization (ILO). In May 2019 we formulated the Shin-Etsu Group Human Rights Policy. In order to confirm the status of compliance with our Human Rights Policy, we conduct an annual survey of our consolidated companies regarding items related to respecting human rights*, labor management, and whether employment is properly implemented in accordance with the laws and regulations of each country and region. Furthermore, we consider human rights impacts on local communities when building new plants.

*Items related to respecting human rights: the prohibition of forced labor and child labor; appropriate working hours and fair wages; fair employment contracts in written form; prohibition of inhumane treatment and discrimination; and freedom of association and the right to collective bargaining.

Strengthening efforts to respect human rights in the supply chain

In 2022 we started providing our major suppliers with a copy of the Shin-Etsu Group Human Rights Policy, our Basic Procurement Policy, and our CSR Procurement Guidelines in an effort to raise awareness about the Group's policies concerning sustainability activities, including respect for human rights. In addition, we asked for cooperation in responding to a questionnaire regarding sustainability initiatives, including human rights, and confirmed the status of sustainability initiatives at our suppliers.

Human rights awareness training

In FY2022 we organized 40 training sessions on the topic of respecting human rights, which were attended by 988 employees overall. In the training, basic knowledge and countermeasures regarding power harassment, sexual harassment, LGBTQ, etc. were explained, and efforts were made to raise employee awareness of human rights.

Training participants learning about harassment

Building healthy relationships with local communities

We are also making an effort to build healthy relationships with nearby local communities to ensure smooth business operations in each region worldwide. As part of this process, employees at each site actively participate in local events so as to interact with members of the local community. We also invite local residents to put forward their views and take part in our plant tours. Also, we provide information about our environmental conservation efforts, how we prioritize safety in our operations, and our contributions to employment and the local economy. And we hope to facilitate positive communication mainly by listening to the opinions and requests of our stakeholders.

Briefing visitors about our initiatives

Natural Capital

Having planned to achieving carbon neutrality by 2050, we will focus even more on efforts to reduce greenhouse gas emissions

The Shin-Etsu Group's efforts to contribute to the value of natural capital focus on addressing climate change, conserving water resources, and reducing waste. In the case of climate change in particular, the issue is increasingly serious and responding has becomes a global challenge. In this context, in May 2019, we announced our support for the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). Furthermore, at the end of May 2023, we planned to becoming carbon neutral by 2050 and formulated a plan to reduce greenhouse gas emissions (Scope 1 and 2) to net zero. Meanwhile, we will continue to focus on developing and expanding sales of our own products that contribute to the reduction of greenhouse gas emissions.

Results that exceed the targets set by japan's energy conservation law

The Group established the medium-term goal in FY2010, which is to "reduce greenhouse gas emissions in terms of intensity to 50% of the FY1990 level by FY2015." Furthermore, the Group established the new medium-term goal in FY2016, which is to "reduce greenhouse gas emissions in terms of intensity to 45% (i.e., down 55%) of the FY1990 level by FY2025," and has strived to attain this objective through energy conservation and the introduction of a cogeneration system. Against this backdrop, the actual results for FY2022 are 54.2% (i.e., down 45.8%) from the FY1990 level for the Group, and 46.8% (i.e., down 53.2%) for Shin-Etsu Chemical from the same level.

Energy usage accounts for 94% of the Group's greenhouse gas emissions. Japan's Act on Rationalizing Energy Use (Energy Conservation Law) sets a target of attempting to reduce energy consumption by at least 1% per year in terms of intensity. If the annual reduction is 1% from FY1990, the "to-date" reduction rate in FY2022 would be approximately 28% compared to the FY1990 level. Our track record of reducing greenhouse gas emissions, however, significantly exceeds the target set by the Energy Conservation Law.

Measures to achieve carbon neutrality by 2050

To date, the Group has been working to reduce greenhouse gas emissions per unit of production volume (i.e., emission intensity). However, we have also developed a plan to achieve carbon neutrality by cutting greenhouse gas emissions in absolute terms.

As part of our commitment to reducing greenhouse gas emissions, we are undertaking the reduction measures shown in Table 1) on the right. Furthermore, since we are studying how to strengthen our efforts to achieve carbon neutrality by 2050, we also anticipate undertaking the reduction measures as shown in Table 2) on the previous page.

As our US subsidiary Shintech Inc. plans to increase its production capacity in the years ahead, the Group's greenhouse gas emissions are expected to increase around 2025, but then fall as these carbon neutrality measures take effect.

Plan for realizing carbon neutrality

Reduction measures	Details
1) Current reduction measures	
(1) Power-related	Reduce CO_2 emission factor Purchase of renewable energy Installation of solar power generation equipment
(2) Improvement and innovation of manufacturing technologies, etc.	Improvement of heat recovery capacity Introduction of energy-efficient equipment Switching from boilers to heat pumps Expansion in order to increase the production of charcoal reducing agents
(3) Utilization of carbon-neutral natural gas (natural gas with emission credits), hydrogen, etc.	Co-firing in cogeneration systems
(4) Promotion of recycling	Further promotion of recycling of PVC products and rare-earth contained in rare-earth magnets that has already been implemented
2) Anticipated reduction measures for carbon neutrality by 2050	
(1) Power-related	Carbon neutralization of electricity
(2) Utilization of green and blue hydrogen	Single fuel firing in cogeneration systems Use as boiler fuel
(3) Continued improvement of manufacturing technologies, etc.	Continuous thorough rationalization and efficiency improvement
(4) Separation, recovery, and utilization of CO_2	Full-scale introduction of separation and recovery equipment, and utilization of methanation technology
(5) Utilization of biomass fuel	Power and steam supply through introducing biomass cogeneration systems, etc.
(6) Promotion of recycling	Establishment of a recycling system for products other than PVC and rare-earth magnets that have already been implemented
(7) Carbon offset	Examination of a wide range of carbon offsets, including those from tree planting

Other initiatives to help realize a carbon-neutral society

1) Initiatives for carrying out Life Cycle Assessment

By conducting life cycle assessment, the Group will contribute to the reduction of greenhouse gases throughout the supply chain.

2) Reduction of greenhouse gas emissions in logistics

We are working to reduce greenhouse gas emissions during product transportation. This will contribute to the reduction of scope 3 greenhouse gas emissions.

Reduction in logistics

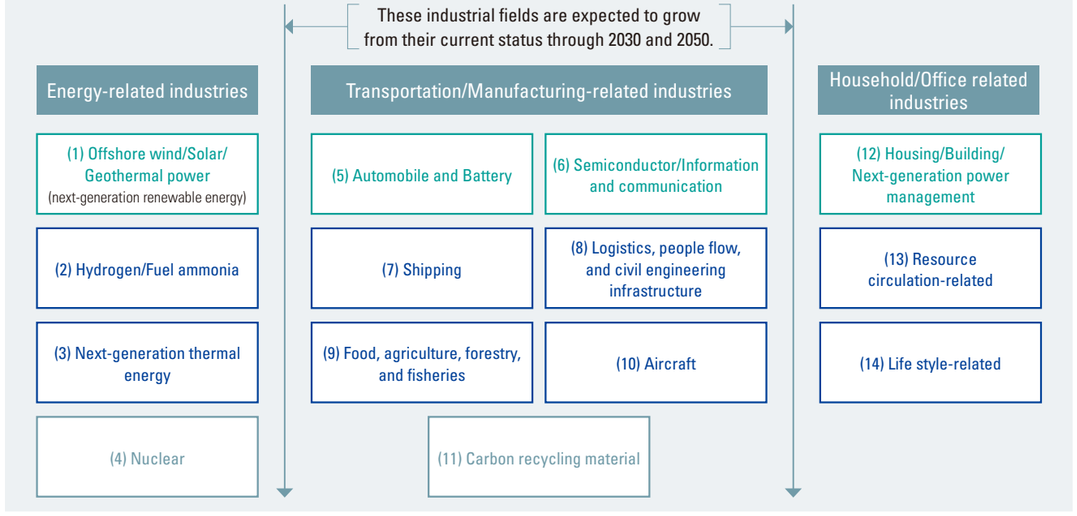
Examples	Scope 3 emissions categories contributing to reductions
Modal shift* in methanol transport (switched from tank truck to railcar)	Category 4: "Emissions from product transport"
Modal shift in silicon wafer transport (switched from aircraft to ocean vessel)	
Modal shift in silicone products transport (switched from truck to railcar)	

*Modal shift: Shifting from trucks and other freight transports to railways or ships with less environmental impact.

3) Expand manufacturing and sales of products that contribute to reducing greenhouse gas emissions

Our group's products are used in a wide range of fields, including housing, infrastructure, electric vehicles, digital transformation (DX), and green transformation (GX), and support the foundations of people's lives and industries. Many of these products also help reduce greenhouse gases. In June 2021, the Japanese government identified 14 essential areas to aim for carbon neutrality in 2050. The ratio of sales in these 14 areas to the Group's consolidated sales in FY2022 is approximately 70%. We will continue to contribute to the carbon neutrality of society as a whole by focusing on developing, manufacturing, and expanding sales of these products.

14 growth sectors



Source: Green Growth Strategy Through Achieving Carbon Neutrality in 2050 (announced in June 2021 by the Japanese government)
https://www.meti.go.jp/english/policy/energy_environment/global_warming/ggs2050/pdf/ggs_full_en1013.pdf

Natural Capital

Disclosure under the TCFD

Based on the recommendations of the TCFD, we are working to enhance disclosure in four areas: Governance, Strategy, Risk Management, and Metrics and Targets.

Governance

The Sustainability Committee, which is one of the committees for each material management task in the Group's corporate governance system, is working with each of our business units to address climate change. The Committee is chaired by the President and consists of approximately 60 members, including our directors, corporate officers, department managers, and sustainability officers from Group companies, and promotes activities that integrate business activities and sustainability initiatives.

In FY2021, we established a Carbon Neutral Task Force within the Committee to examine each issue related to climate change. The Task Force holds a general meeting every three months and reports the latest information to the president, who receives this report and decides on policy. Based on this policy, the Task Force conducts investigations and deliberations, and reports on climate change-related initiatives at meetings of the Managing Directors' Meeting and the Board of Directors attended by all Directors, Audit & Supervisory Board Members, and Corporate Officers. After this process, in FY2022 we formulated a plan to achieve carbon neutrality in 2050 and announced it at the end of May 2023.

Strategy

The Group considers the promotion of plans to achieve carbon neutrality by 2050 as an important management issue, and is therefore promoting information disclosure based on the TCFD recommendations, including scenario analysis. At the same time, through this analysis, we identify important risks and opportunities that affect our business through these analyses, and reflect them in our management.

Scenario analysis of our business in 2050

Business Opportunities Stemming from Climate Change: A scenario for a 1.5°C rise

Application	Details	Revenue Impact
PVC-framed windows	Polyvinyl chloride resin is used for resin windows because of its excellent heat insulation properties. Demand for resin windows is expected to increase along with the spread of energy-saving homes.	Large
Electric, hybrid, and fuel-cell vehicles	Semiconductor silicon is used in power semiconductor devices such as inverters to control the number of rotations of motors, logic semiconductor devices for automatic driving system and AI. High-performance and compact rare-earth magnets can reduce the overall weight of a vehicle and improve its fuel efficiency, which will expand their use in the drive motors of electric, hybrid, and fuel cell vehicles, as well as in a variety of other motors in vehicles. Silicone heat-dissipating materials are used in lithium-ion batteries and various electronic control devices. Demand is expected to grow as it helps prevent malfunctions and failures caused by heat.	Large
Wind power generators	Demand for rare earth magnets is expected to grow as they contribute to higher efficiency in offshore wind turbines and lower maintenance costs for generators. Demand for vinyl chloride used for wire sheathing is also expected to increase due to the development and expansion of the power grid.	Large
Air conditioners	Demand for semiconductor silicon is expanding as it is used in inverter control devices for compressor motors and contributes to power saving by adjusting the rotation speed of the motor to an appropriate level. Demand for rare earth magnets is expected to grow as they improve the energy efficiency of air conditioner compressor motors and reduce energy consumption.	Medium
Aircraft	Rare earth magnets are indispensable for the electrification and hybridization of small aircraft and for the electrification of hydraulic drive units in large aircraft. Demand for rare earth magnets is expected to increase as their small size and high power will help reduce the weight of the aircraft and improve fuel efficiency.	Medium
Industrial motors	Demand for rare earth magnets is expected to grow as they increase the efficiency of industrial motors and reduce the amount of electricity consumed.	Medium
Service robots	Semiconductor silicon is increasingly being used in semiconductors for energy-saving robot control motors for manufacturing, logistics, agriculture, and other applications, as well as in medical and disaster response robots.	Medium
Binding agent for plant-based meat substitutes	A diet centered on plant-based foods may reduce CO_2 emissions by 1.6 gigatons per year*. Cellulose derivatives are used as a binding agent for plant-based meat substitutes. The global market for plant-based meat is expected to grow at a double-digit rate annually, and further market expansion is expected.	Medium

*Source: "DRAWDOWN–The Most Comprehensive Plan Ever Proposed to Reverse Global Warming," written and edited by Paul Hawken.

Business risks due to climate change and countermeasures: A scenario for a 1.5°C rise (transition risk)

Events	Risks to the Company	Revenue Impact	Countermeasures
Introduction of carbon taxes and establishment of carbon emission quotas around the world	• Payment of carbon tax • Incurring costs of purchasing emission credits to meet carbon emission quotas • Increase in cost of measures to reduce greenhouse gas emissions	Large	• Reduce scope 1 emissions (e.g., further promotion of more efficient production processes and introduction of highly efficient equipment; use of energy sources that do not emit CO_2, such as hydrogen and ammonia; use of CCUS) • Use of hydrogen-reduced iron materials as raw material • Achievement of reduction targets in the absolute amount of greenhouse gas emissions • Collection of information on environmental regulations such as carbon taxes in each country and implementation of countermeasures
Widespread use of electricity derived from renewable energy sources and rising electricity prices resulting from tightening regulations on greenhouse gas emissions	• Increase in electricity costs	Large	• Reduce Scope 2 emissions (further promotion of production processes that use less electricity, introduction of high-efficiency equipment, etc.)

Business risks due to climate change and countermeasures: A scenario for a 4°C rise (physical risk)

Events	Risks to the Company	Revenue Impact	Countermeasures
Increase in the frequency of extreme weather events Increased frequency of flooding caused by changes in precipitation patterns, etc.	• Flooding of production sites • Disruption of the supply chain	Large	• Raising the ground level of production sites, installation of watertight walls around critical facilities • Installation of instrument rooms in areas with low risk of flooding • Installation of seawalls at production sites close to ports • Multiple production sites • Diversification of raw material procurement sources • Securing product inventory • Enrollment in insurance
Introduction of carbon taxes and establishment of carbon emission quotas in some countries		Small	• Reduce scope 1 emissions (e.g., further promotion of more efficient production processes and introduction of highly efficient equipment; use of energy sources that do not emit CO_2, such as hydrogen and ammonia; use of CCUS) • Use of hydrogen-reduced iron materials as raw material • Achievement of reduction targets in the absolute amount of greenhouse gas emissions • Collection of information on environmental regulations such as carbon taxes in each country and implementation of countermeasures
Electricity prices	According to a scenario analysis by IEA* (a scenario with current measures), electricity prices will not rise. Therefore, there is no risk to us.	—	—

*International Energy Agency

Risk management

The Risk Management Committee works to prepare for and eliminate the various risks surrounding our business, including risks posed by climate change. The Committee is chaired by a managing corporate officer and consists of approximately 20 members, including our directors, corporate officers, and department managers.

Our Group has established Risk Management Regulations to identify potential risks associated with our business activities and address these risks appropriately. The Risk Management Regulations clearly state specific risks, risk management systems, and responses to risks that materialize. The Risk Management Committee reports to the Board of Directors, Managing Directors' Meeting, Audit & Supervisory Board, and relevant parties in a timely manner on important risk management issues, and works to address them appropriately. With regard to the risks related to climate change, which have become increasingly important in recent years, the Sustainability Committee works with the Risk Management Committee to ascertain risks through scenario analysis.

Climate-related physical risks include increased spending due to CO_2 emissions trading and carbon taxes, transition risks such as rising manufacturing costs due to rising energy prices, damage to equipment due to the wind disaster, and damage to electrical equipment due to flooding, or plant shutdown resulting from such cases. Among these risks, we defined serious risks such as accidents, explosions, fires, and other major disasters that cause operations to be stopped for one day or more, and environmental pollution incidents that exceed legal standards values or regulation values.

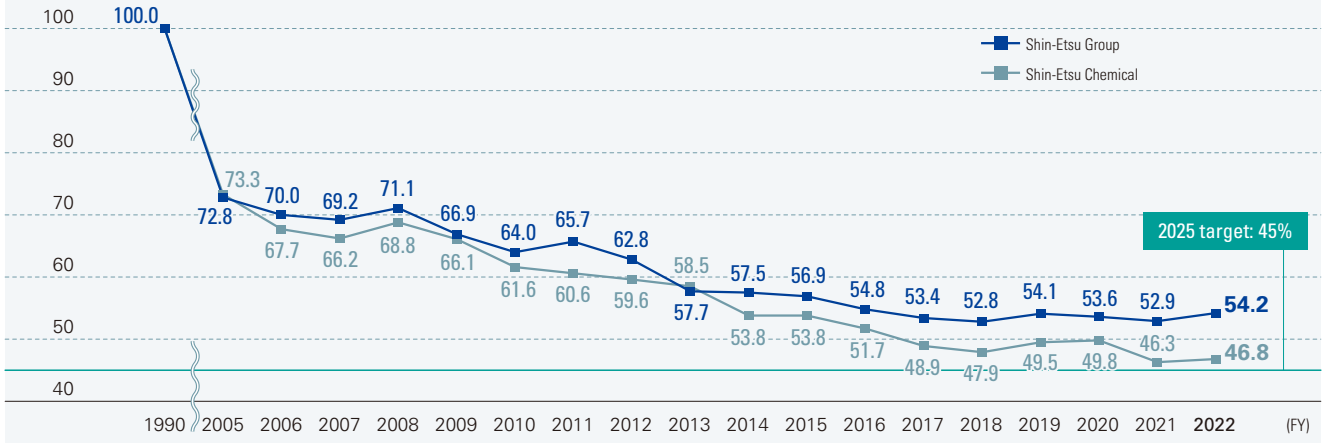
Metrics and targets

The Shin-Etsu Group aims to achieve net zero greenhouse gas emissions (Scope 1 and 2) by 2050. Furthermore, in order to achieve our medium-term target of "Reduce greenhouse gas emissions in terms of intensity to 45% of the FY1990 level by FY2025," we will continue to promote the reduction of greenhouse gas emissions in terms of intensity.

Natural Capital

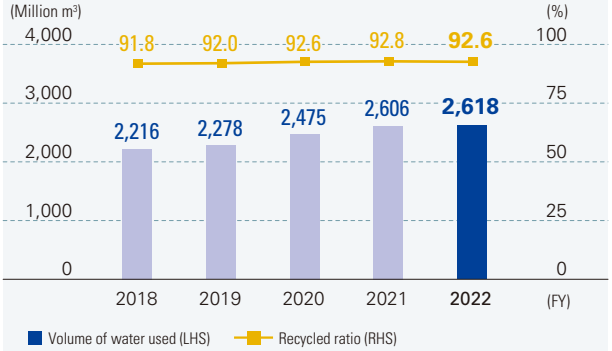
Indicators about energy-saving, resource-saving, and the reduction of the environmental impact

Changes in greenhouse gas emissions (emission intensity index of production volume relative to FY1990*)



*Greenhouse gas emission intensity index (FY1990 = 100)

Water usage*/Recycled ratio

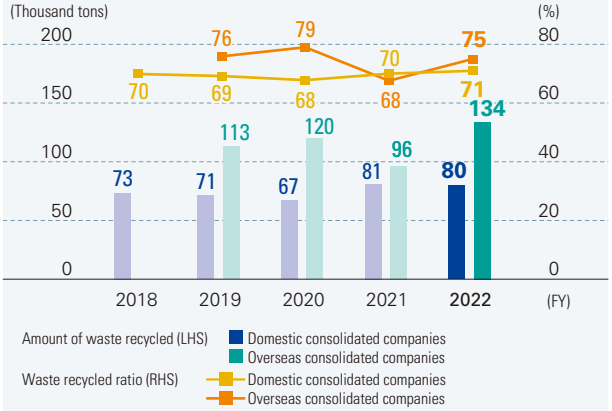


*Total quantity of water withdrawal and recycled water

Amount of waste generated

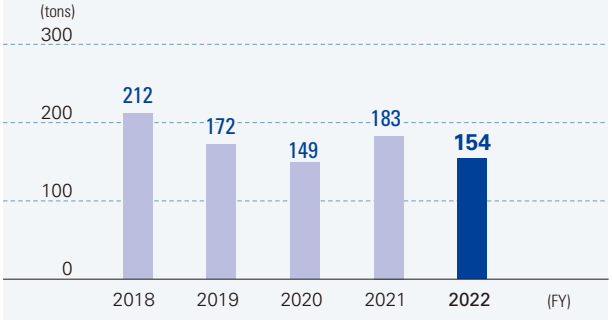
*FY2018 figures for overseas consolidated companies not shown as they have not yet been calculated.

Amount of waste recycled/Waste recycled ratio



*FY2018 figures for overseas consolidated companies not shown as they have not yet been calculated.

Gross discharge of substances designated under the pollutant release and transfer register (PRTR) system



*Figures are totals for Shin-Etsu Chemical and domestic consolidated companies based on the PRTR system in the Law for Promotion of Chemical Management.