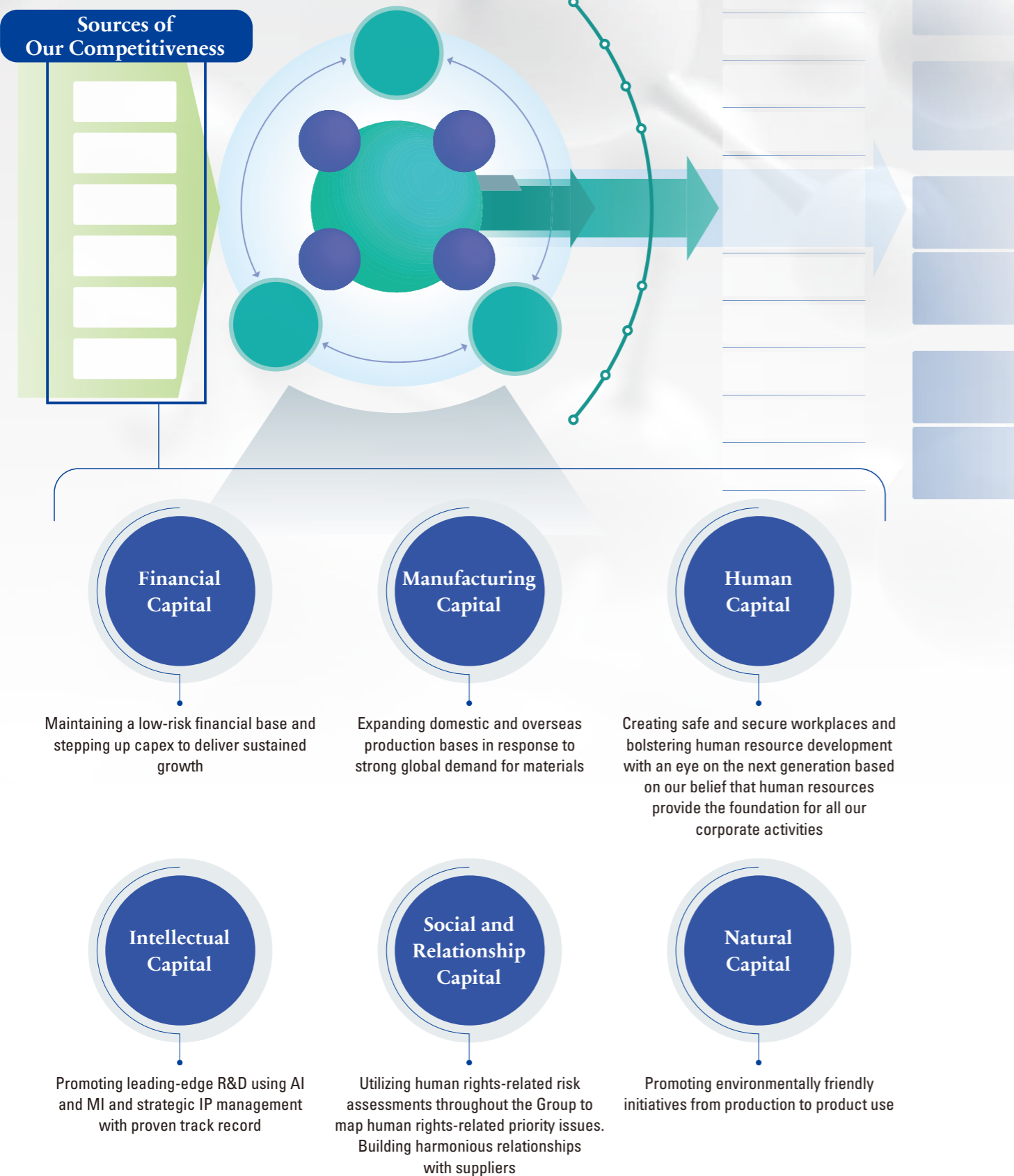
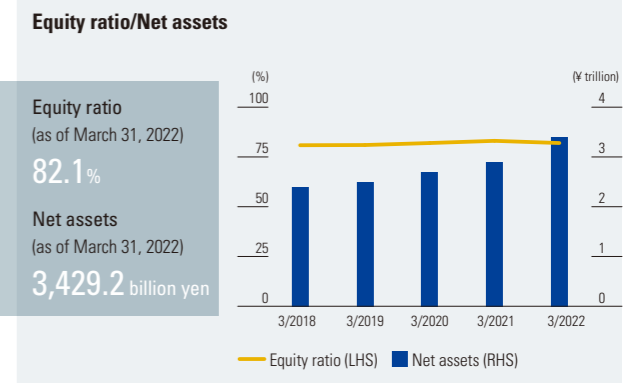


Sources of competitiveness that support the sustainable development of the Shin-Etsu Chemical Group



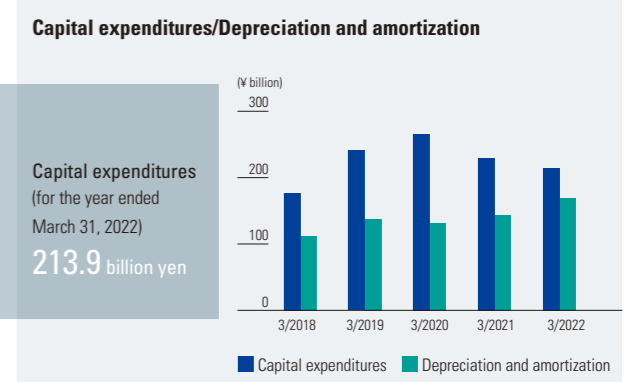
Achieving high profitability with a solid financial base

Operating income in the Infrastructure Materials business increased 320% year on year in FY2021, while all other business segments posted double-digit profit growth. Net income attributable to owners of parent rose sharply to a record-high ¥500.1 billion (+70% year on year). Total net assets came to ¥3,429.2 billion (+19% vs. end-FY2020), the equity ratio on a consolidated basis topped 80%, and we achieved ROIC of 27.2% and ROE of 16.3% whilst maintaining a low-risk financial base from which we can cope with economic fluctuations despite the increasingly uncertain future outlook.



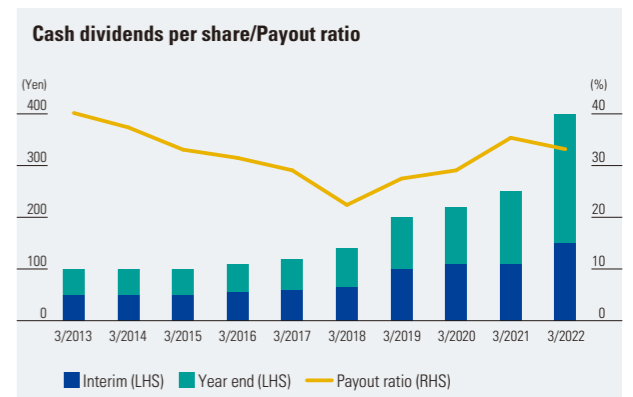
Ramping up capex with an eye on sustained growth

With a view to strengthening our competitive edge and ensuring sustained growth, we are endeavoring to enhance corporate value by making active and opportune use of internal reserves. At present, the augmentation of PVC production capacity at Shintech is progressing according to plan and we are also aggressively investing in silicon wafers and other businesses in the Electronics Materials segment. We also kicked off a new round of investment in silicones to the tune of ¥80.0 billion. With these investments and others, we have earmarked ¥270.0 billion for capital expenditures in FY2022.



Seven consecutive fiscal years of dividend hikes; share buybacks scheduled

In addition to focusing on growth in business revenue and maintaining a solid financial base, our basic policy is to target a medium- to long-term payout ratio of around 35% and steadily return the fruits of our business endeavors to our shareholders over the long term. In keeping with this policy, in FY2021 we raised our annual dividend for the seventh year in a row to ¥400 (+¥150 year on year; payout ratio of 33.2%). Also as part of shareholder returns, we plan to buy back and cancel 7 million treasury shares equivalent to 1.7% of shares outstanding (excluding treasury stock), or up to ¥100.0 billion worth. The cancellation of shares is scheduled for November 8, 2022.

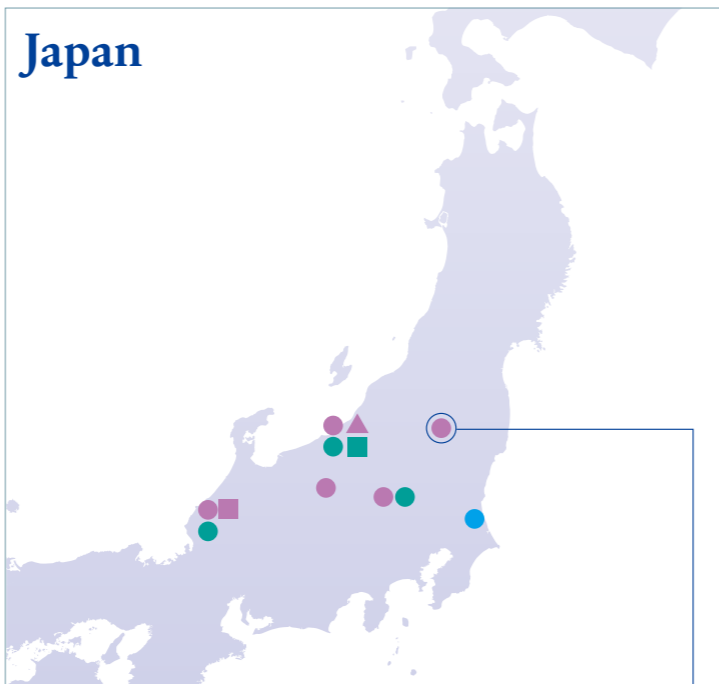
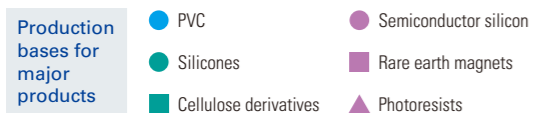


Manufacturing Capital

Expanding domestic and overseas production bases in response to strong global demand for materials

Domestic production bases: 16 companies, 27 bases

We have 16 companies, including Group companies such as Shin-Etsu Handotai Co., Ltd. and JAPAN VAM & POVAL Co., Ltd., as well as 27 production bases in Japan, including Shin-Etsu Chemical's four plants 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.



Overseas production bases: 19 countries, 93 bases

In addition to building a local production system directly linked to local demand, the Shin-Etsu Group has 93 overseas production bases in 19 countries 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

Maximizing production capacity to further boost our competitiveness

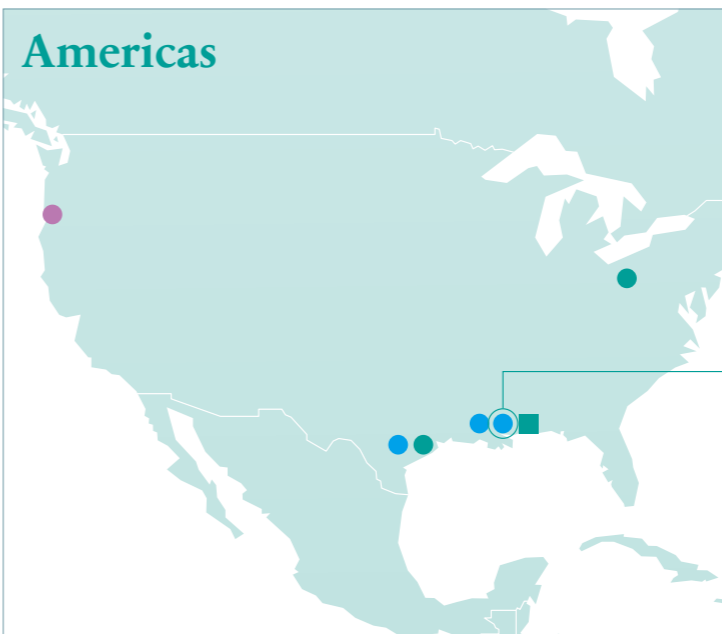
Our ethylene plant, which started up in February 2020 in Louisiana, USA, with state-of-the-art technology and competitive raw materials (ethane) from shale gas, supplies the ethylene needed to produce PVC. One of the challenges we face in further strengthening our competitiveness is to maximize production capacity for further earnings. In addition to daily fine-tuning of operating conditions, we are considering facility modifications to further boost performance. Another challenge is the pursuit of safe and stable operations. We are working to capture problems before they occur through continuous monitoring of equipment condition, while at the same time improving the reliability of equipment that currently requires frequent maintenance.

On the environmental side, we are currently working hard on a project to introduce new monitoring instrument that will help reduce CO₂ emissions in order to improve the operation and management of the exhaust gas flare. I believe that the experience through the design and construction work of production plant from scratch live for good use in current reforming operations.



Technology Department, International Division, Shin-Etsu Chemical Co., Ltd. (on assignment to Shintech Inc.)

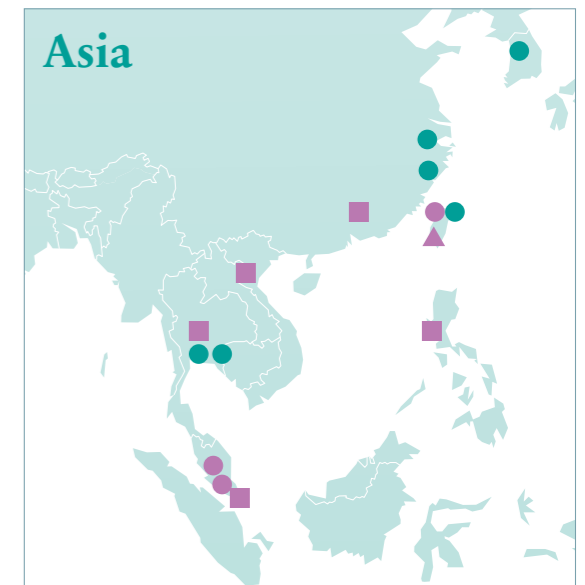
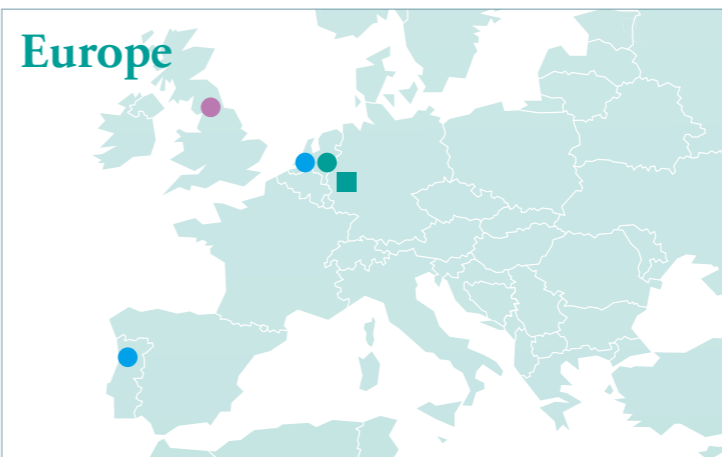
Hironori Miyaji



Shintech Inc.

Plaquemine Plant in Louisiana

Fulfilling global demand for PVC as the world's largest PVC manufacturer



Message from our production site employee

Responding to customer needs by applying new technologies to stabilize quality

Our strength is in our industry leading quality and technological capabilities. I was involved in a project to develop wafers for cutting-edge devices. At the beginning of the development, we were nowhere near a level where we could even consider mass production, but we were able to substantially improve our yield after several years of development. This quality is something that cannot be achieved if any one of the numerous processes, from crystallization to processing to epitaxy, is subpar, and I have come to realize once again that we are a group of professionals.

As we practice the triangular link of sales, development, and production, I believe that the role of production is to respond to the needs of customers captured by our sales team to the best of our ability. One of the most important quality requirements is the flatness of wafers, which requires shape control at the nanometer level* for 300mm wafers. To achieve this, we design the necessary processes and introduce control technologies and other new technologies to stabilize quality. We make every effort to gain and maintain customer trust in our daily activities.



Wafer Process Engineering Department, Shirakawa Plant, Shin-Etsu Handotai Co., Ltd.

Shiro Amagai



Shirakawa Plant, Shin-Etsu Handotai Co., Ltd.

Key domestic plant for integrated production of semiconductor silicon wafers from crystallization to processing

* 1 nm is one millionth of a millimeter.

Human Capital

Creating safe and secure workplaces and bolstering human resource development with an eye on the next generation based on our belief that human resources provide the foundation for all our corporate activities

The Shin-Etsu Group believes human resources provide the foundation for all its corporate activities and is therefore focusing its energy on establishing an environment in which employees can work with peace of mind, developing human resources, and ensuring diversity throughout the Group.

Key Issues Health and safety of employees and contractors

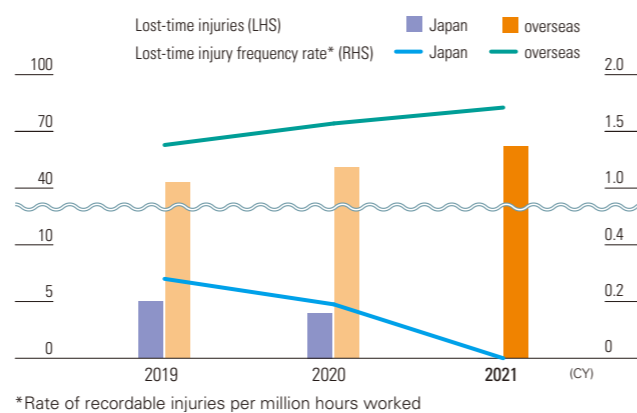
Creating safe and secure workplaces

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)	2017	2018	2019	2020	2021
Shin-Etsu Chemical	9,751	11,774	19,411	32,527	39,348
Consolidated companies	24,829	28,013	39,328	46,998	56,236

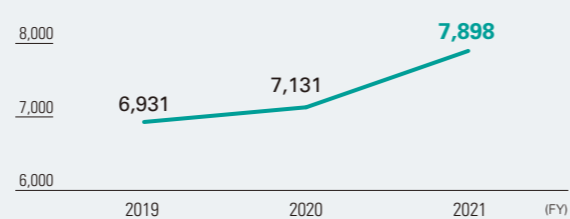
Lost-time injuries and changes in frequency rate



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

So that employees can work with enthusiasm, we proactively offer health guidance on lifestyle-related diseases, adopt mental health measures, and hold events that aim to improve physical fitness. As for the prevention of COVID-19 infections, we continue to employ as many measures as possible, including temperature checks, the wearing of masks, hand sanitizing, and

the use of online meetings. In addition, we have established a Health Committee at our head office and each of our branch offices, along with a Safety and Health Committee at each plant, and we are working to improve the workplace environment and promote healthy lifestyles based on information and guidance received from our occupational physician.

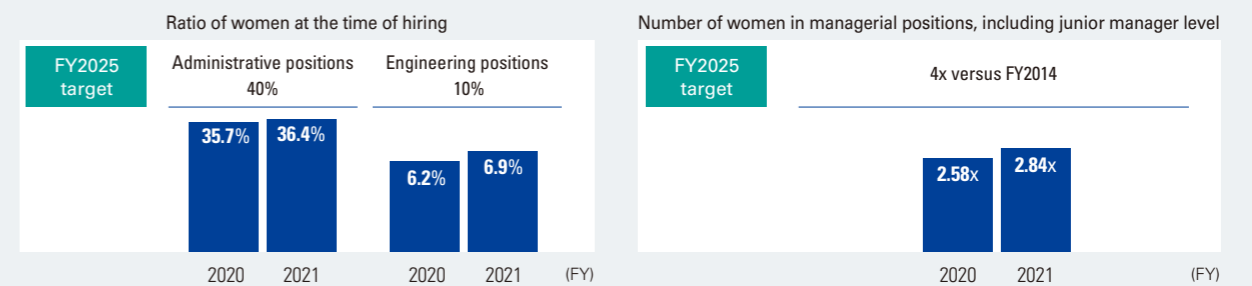
Key Issues Respect for human rights, the development of human resources, and the promotion of diversity

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

and 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

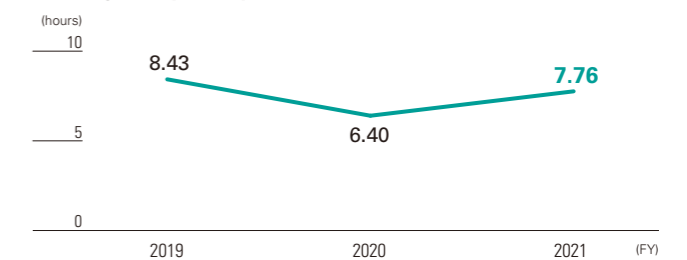
Human resource development

Based on the thinking that employee growth leads to company growth, the Shin-Etsu Group supports the growth of employees with not only rank-based training, but also various other educational programs for which there is a growing need in light of changes in the business environment. For example, in order to smoothly carry out business operations around the world, we are currently focused on running global communication training sessions with the goal of improving foreign language-based communication skills. Moreover, as part of our efforts to adopt more digital technology, in FY2021 we started running hands-on training and problem-solving AI training so that new recruits and younger employees could acquire digital literacy skills, while mid-level employees could learn data analysis skills needed to solve practical issues.

Even though we implement this kind of systematic training, it is not always uniform because we believe it is important to also offer training that meets the needs of every individual. Especially at

our business sites, we emphasize on-the-job training (OJT) based on the belief that true growth comes from the accumulation of daily experiences. As such, we aim to nurture a workforce that possesses flexible ways of thinking and spontaneity.

Training time per employee



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

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 FY2021, 99 female employees and 88 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 FY2021, two employees (from all consolidated companies in Japan) utilized our nursing care leave system.

Intellectual Capital

Promoting leading-edge R&D using AI and MI and strategic IP management with proven track record

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.

Accelerate development of new products and technologies by leveraging MI

The Group’s R&D department coordinates with the sales and production departments to bring together a system for developing new next generation products and technologies, as well as a system for quickly developing current products that meet the needs of our customers. At the same time, we are hiring and training engineers and researchers with expertise in artificial intelligence (AI) and computational science, and establishing a system to efficiently search for optimal combinations of materials by leveraging materials informatics (MI), thereby substantially shortening development time compared to the conventional method where researchers repeatedly conduct experiments based on their experience and intuition.

In new product development, we have identified energy, semiconductor-related materials, 5G-related materials, healthcare, and materials that contribute to achieving SDGs and carbon neutrality as priority areas in growth markets where we can leverage our strengths. For example, in the energy field, we are developing SiO (silicon monoxide) anode materials for high-capacity, high-power lithium-ion batteries in anticipation of the widespread adoption of electric vehicles. In the optical communications area, we have developed quartz cloth and low dielectric constant thermosetting resins (SLK series) as optimal materials for electronic devices, circuit boards, antennas, and

radar domes used in the 5G high frequency band, which have been well received by customers. In the healthcare field, we have developed “electrophysiological dry electrodes” using silicone-based materials with excellent biocompatibility for wearable devices, and “high-stretchable wiring materials” that are ideal for wiring in health patches used to acquire biometric information.

In addition, we introduced materials for manufacturing micro-LED displays, the most promising contender for next-generation displays, while our group company Shin-Etsu Engineering has developed equipment that can transfer micro-LED chips quickly and accurately with a simple transfer process, thereby establishing our one-stop supply system covering everything from transfer parts to manufacturing equipment.



Low dielectric constant thermosetting resins (SLK series)



Health patch using Shin-Etsu Chemical's materials for wearable devices. The black-colored parts are the electrophysiological dry electrodes and the gold-colored lines connecting them are the high-stretchable wiring.

Strategic protection of IP

As the Shin-Etsu Group’s technologies are being used around the world, we protect our IP gained through R&D from infringement by third parties by securing IP rights both in Japan and overseas. We also strategically manage our intellectual assets by, for example, keeping information that should not be disclosed as confidential knowledge. As a result of these efforts, we have received the Clarivate

Top 100 Global Innovators™ award for 11 consecutive years. Global information services company Clarivate (UK) analyzes IP and patent trends based on its patent data, and presents the award to companies and institutions that have protected their unique invention ideas with IP rights, successfully commercialized their inventions, and are leading the world’s businesses.

Social and Relationship Capital

Utilizing human rights-related risk assessments throughout the Group to map human rights-related priority issues. Building harmonious relationships with suppliers

The Shin-Etsu Group believes human rights management in the supply chain to be crucial to the stable supply of high-quality products to its customers. We therefore spare no pains in undertaking activities that aim to uphold respect for human rights.

Identifying human rights management in the supply chain as a priority issue

The Shin-Etsu Group observes international standards of conduct, including the Universal Declaration of Human Rights, the ILO*1 International Labor Standards, and the United Nations’ Guiding Principles on Business and Human Rights. We are also thoroughly dedicated to activities that aim to uphold respect for human rights.

As part of our due diligence*2 concerning human rights,

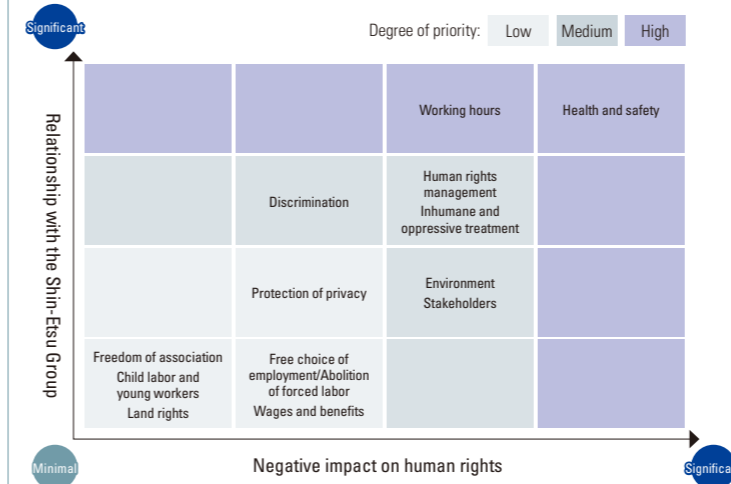
in December 2019, we carried out human rights-related risk assessments at Group companies worldwide. In those assessments, we evaluated the degree of priority of human rights issues from the following two angles in order to identify the issues the Group ought to address first: (1) the potential severity of the impact on human rights; and (2) our relationship with human rights-related risks. Going forward, the human rights issues we must address as matters of priority will be communicated throughout the Group. At the same time, we will be thorough in our approach by keeping tabs on the progress of initiatives undertaken by each Group company.

Also, an analysis of the responses collected from the human rights-related risk assessments revealed that roughly 40% of our Group companies consider human rights management in the supply chain to be important. Since February 2022 we have been assessing, in a phased manner, the sustainability initiatives, including those relating to human rights, implemented by Shin-Etsu Group suppliers.

*1 International Labour Organization

*2 Recognize, prevent, and address adverse human rights-related impacts stemming from both inside and outside the Company by repeatedly applying the PDCA cycle, which involves formulating and disclosing human rights policies, assessing the impact of the Company’s business activities on human rights, preventing and rectifying any negative impact, and tracking and disclosing related performance.

Priority issues for human rights at the Shin-Etsu Group



Building harmonious relationships with suppliers

In 2020 we signed up to the Declaration of Partnership Building*3 framework with the aim of building harmonious relationships with business partners. In particular, when determining transaction prices, we agree to hold discussions with subcontractors so as to include a fair amount of profit for them and make every effort not to request any unreasonable cost reductions. As a result of such initiatives, in the follow-up

survey of 40,000 companies in price negotiations promotion month conducted by METI’s Small and Medium Enterprise Agency in 2021, we garnered a score of 9.71 (the average was 6.86) for price pass-alongs, the highest among the 70 Declaration of Partnership Building framework companies that were evaluated.

*3 This framework was established by the Council on Promoting Partnership Building for Cultivating the Future, members of which include the chairman of Keidanren (Japan Business Federation), the chairman of the Japan Chamber of Commerce and Industry, the president of the Japanese Trade Union Confederation, as well as related government ministers. Under the framework, the representatives of companies declare to build new partnerships by promoting collaboration and mutually-beneficial relationships with business partners and business providers in the supply chain.

Natural Capital

Promoting environmentally friendly initiatives from production to product use

As part of initiatives that contribute to enhancing the value of our natural capital, the Shin-Etsu Group focuses on addressing climate change, conserving water resources, and reducing waste. In particular, addressing climate change, which is becoming increasingly serious, is a global challenge. In May 2019, we expressed our support for the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), and we are committed to disclosing information in line with these recommendations, as well as reducing greenhouse gas emissions in our business activities to achieve carbon neutrality by 2050. In addition, the Group does not limit itself to reducing the global environmental impact in production processes alone. It also strives to develop products that help reduce environmental burdens when they are used.

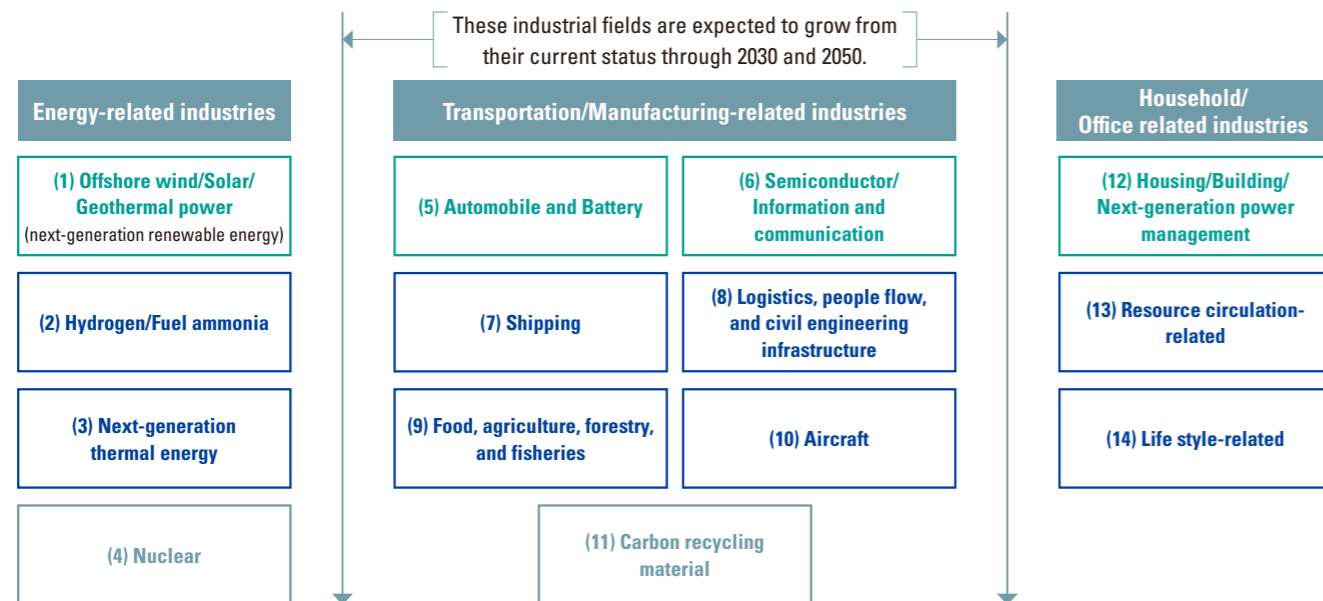
Shin-Etsu Group's products and technologies that contribute to carbon neutrality

Reducing greenhouse gas emissions through products and technologies

The Shin-Etsu Group has a wide range of products and technologies that help reduce greenhouse gas emissions. For example, PVC is used in a variety of fields, including for PVC-framed windows that improve thermal insulation in homes and buildings, and PVC pipes and agricultural films that emit less CO₂ over their entire lifecycle compared to other materials. Silicon wafers and other semiconductor-

related products and optical fiber preforms contribute significantly to the improvement of electronic device performance, the miniaturization of electrical equipment, and energy conservation. Furthermore, silicones are widely used in automobiles, construction, and solar power generation, contributing to the reduction of greenhouse gas emissions. In addition, the technology we have developed to prevent the initial degradation in solar power generation has been adopted by major solar panel manufacturers.

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

Contribution to green growth strategy

In June 2021, the Japanese government announced its Green Growth Strategy Through Achieving Carbon Neutrality in 2050. In the strategy, 14 sectors were identified as strategic areas with future growth potential and where efforts toward carbon neutrality are essential. Approximately 70% of our Group's consolidated net sales in FY2021 came from products related to these 14 sectors.

Thoroughly pursuing energy savings

The Shin-Etsu Group has taken on the challenge of thoroughly pursuing energy savings and has substantially reduced energy consumption intensity by 52.9% for the Group as a whole and 46.3% on a non-consolidated basis compared to FY1990. This reduction far exceeds the target set by the Energy Saving Act, which is to reduce energy consumption intensity by 1% per year. We will continue

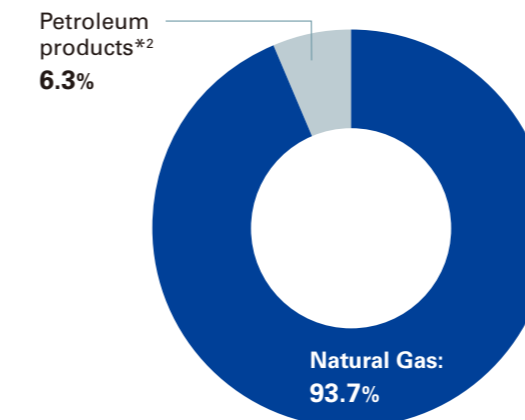
to promote thorough energy saving and creation in order to achieve our goal of reducing greenhouse gas emission intensity to 45% of the FY1990 level by FY2025.

In addition, 93.7% of our Scope 1 energy sources are natural gas, and we do not use coal, which produces substantial greenhouse gas emissions. The rest of our energy comes from petroleum, with liquefied petroleum gas accounting for 4.2%, and heavy oil, kerosene, diesel, and gasoline combining for 2.1%. Furthermore, US-based Shintech Inc., which has the world's largest PVC production capacity, produces PVC primarily from ethylene, which is derived from ethane, a natural gas-derived raw material with low greenhouse gas emissions.

Low-carbon products and highly recyclable products

Compared to petrochemical products*³, our main products are characterized by their low-carbon content (the carbon content of PVC is about 40%, and about 30% for siloxane, which is the foundation of silicone, etc.). This means that our products emit less greenhouse gases when incinerated after use compared to other petrochemical products. Furthermore, the material recycling ratio of PVC in Japan is over 30%, which is high among plastics. We also recycle rare earth materials, which are used as raw materials for rare earth magnets. The Shin-Etsu Group is committed to the effective use and recycling of valuable resources.

Our scope 1 energy source ratio*¹



*¹ Comparison of each energy source in crude oil equivalent

*² Breakdown of petroleum products: 4.2% for liquefied petroleum gas, 1.2% for kerosene, diesel, and gasoline, 0.9% for class A and C heavy oil

*³ Carbon content of notable petrochemical products: 86% each for ethylene, propylene, and butylene; 92% for benzene; 91% each for toluene and xylene.

Silicones business to enhance carbon neutrality initiatives

At the Gunma Complex, where the main plants of the silicones business are located, we are investing a total of ¥20 billion to further improve electricity self-sufficiency and reduce greenhouse gas emissions by 14% from the current level, and to expand supply capacity for environmentally friendly products*¹. In the silicones business, we have developed millable-type silicone rubber, which does not require post curing (heating) during processing, which has reduced processing time by approximately 90% compared to conventional products and helped customers save energy and improve productivity*². In addition, low-density type of silicone rubber, which reduces the weight of molded rubber products, contributes to energy saving in a variety of ways.

*¹ Modified silicone fluids, silicone rubber for molding materials, thermal interface materials, etc.

*² Comparison data for a 2mm sheet



Gunma Complex (Gunma Prefecture), which is increasing its electricity self-sufficiency by adding gas turbines for power generation

Natural Capital

Disclosures under the TCFD

Our Group is committed to reducing greenhouse gas emissions in our business activities in order to achieve the global goal of achieving carbon neutrality by 2050. As part of this effort, in May 2019, we expressed our support for the TCFD recommendations and joined the TCFD Consortium. We will continue to enhance our disclosures in

accordance with the TCFD recommendations in the areas of 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.

Strategy

Climate change response

The Sustainability Committee held 43 subcommittee meetings on climate change in FY2021. In addition, the Group's climate change initiatives were reported, discussed, and approved by the Managing Directors' Meeting, which is responsible for discussing and making decisions on business operations. The Shin-Etsu Group is pursuing the following initiatives with the aim of curbing its environmental impact and ensuring the sustainable development of human society.

- 1 Reduction of greenhouse gas emissions through thorough improvements in production efficiency
- 2 Through development, production, and supply of environment-contributing products, contributing to making customers' production processes and society more efficient
- 3 Utilization of renewable energy
- 4 Reduction of greenhouse gas emissions in logistics
- 5 Measures and implementation to reduce the greenhouse gas emissions

Risks and opportunities posed to our business activities by climate change

In FY2020, we conducted an analysis of our business under scenarios where global warming progresses 1.5°C and 4°C in 2050 and identified risks and opportunities that climate change would pose to our business activities.

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.

Metrics and targets

Medium-term target (FY2025)

Greenhouse gas emission intensity
45% (of FY1990 level)

* In calculating emissions, we use the average CO₂ emission factor for electricity from 2000 to 2009 to make the results of our electricity reduction efforts clear.

In FY2010, we set a medium-term target to reduce greenhouse gas emission intensity to 50% of the FY1990 level by FY2015 to address climate change. To achieve this target, we have introduced innovative technologies, as well as energy saving and cogeneration systems. Furthermore, starting from FY2016, we have set a new medium-term target to reduce greenhouse gas emission intensity to 45% of the FY1990 level by FY2025, and are working to achieve this target.

Scenario analysis of our business in 2050

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

Application	Details	Degree of impact*1
PVC-framed windows	• Demand for PVC window frames (PVC-framed windows) that offer superior thermal insulation will increase along with the spread of large energy-efficient homes	Large
Electric, hybrid, and fuel-cell vehicles	• Demand will increase for semiconductor silicon used in inverter controllers and other power semiconductor devices, automatic driving technology and AI technology • Use of high-performance and compact rare earth magnets that help increase fuel efficiency by reducing vehicle body weight will increase	Large
Wind power generators	• Demand will increase for rare earth magnets that contribute to higher generator efficiency and maintenance cost reduction • Demand for PVC for electric wire coating will increase with the development and expansion of power grids	Large
Air conditioners	• Demand will expand for semiconductor silicon, which is used in inverter control devices attached to compressor motors and contributes to the reduction of power consumption • Demand will expand for rare earth magnets that raise the energy efficiency of compressor motors and reduce power consumption	Medium
Aircraft	• Demand will expand for small and powerful rare earth magnets that are essential for conversion to electric and hybrid power sources; this will contribute to fuselage weight reduction and improved fuel efficiency	Medium
Industrial motors	• Demand will expand for rare earth magnets that raise the efficiency of industrial motors and reduce power consumption	Medium
Service robots	• Demand will increase for semiconductor silicon used in semiconductors for energy-saving robot control motors, as well as in medical and disaster response robots	Medium
Binding agent for plant-based meat substitutes	• Demand for cellulose derivative products used as binding agents for plant-based meat substitutes will grow. Dietary habits centered on plant-based foods will contribute to the reduction of CO ₂ emissions	Medium

Business Risks Due to Climate Change and Countermeasures: A scenario for a 1.5°C rise (transition risk)

Events	Risks to the Company	Degree of impact*1	Countermeasures
Rising electricity prices resulting from tightening regulations on greenhouse gas emissions	• Increase in electricity costs	Large	• Reduce Scope 2 emissions*2 (further promotion of production processes that use less electricity, introduction of high-efficiency equipment, etc.)
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*2 (further promotion of more efficient production processes, use of energy sources that do not emit CO ₂ , etc.) • Use of hydrogen-reduced iron materials as raw material • Establishment and 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

Business Risks Due to Climate Change and Countermeasures: A scenario for a 4°C rise (physical risk)

Events	Risks to the Company	Degree of impact*1	Countermeasures
Increase in the frequency of extreme weather events	• Flooding of production sites • Disruption of the supply chain	Large	• Raising the ground level of production sites, installation of watertight walls around critical facilities • Multiple production sites • Diversification of raw material procurement sources • Securing product inventory • Enrollment in insurance
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 • 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	• Payment of carbon tax • Incurring costs of purchasing emission credits and payment of surcharges	Small	• Reduce Scope 1 emissions • Use of hydrogen-reduced iron materials as raw material • Establishment and 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*3 (a scenario with current measures), electricity prices will not rise. Therefore, there is no risk to us.	—	—

*1 Impact on earnings

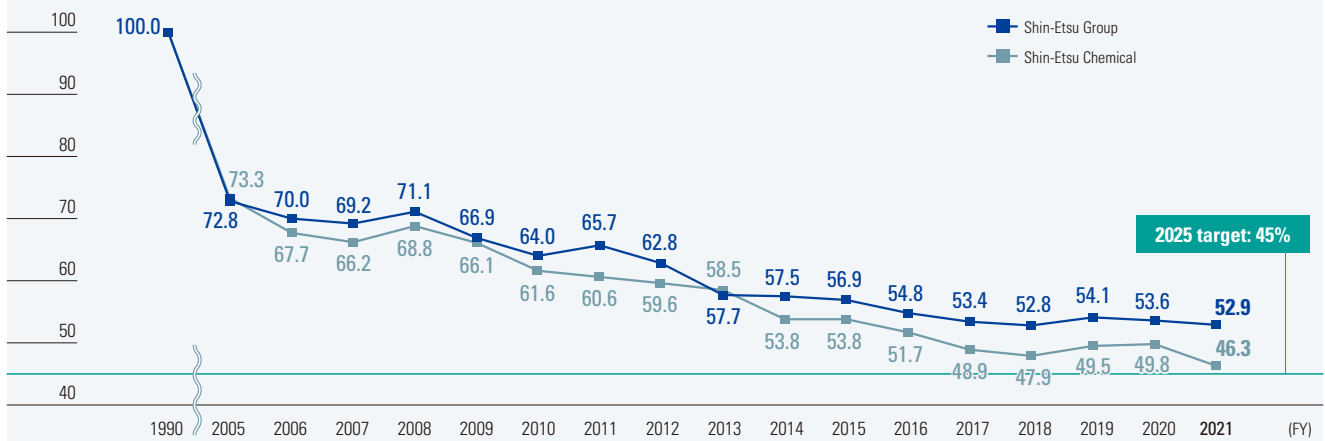
*2 Scope 1: Direct emissions from facilities owned and controlled by the Company (e.g., emissions generated during the combustion of substances such as heavy oil and natural gas)
 Scope 2: Emissions generated when producing energy purchased by the Company (e.g., emissions triggered when generating purchased electricity)

*3 International Energy Agency

Natural Capital

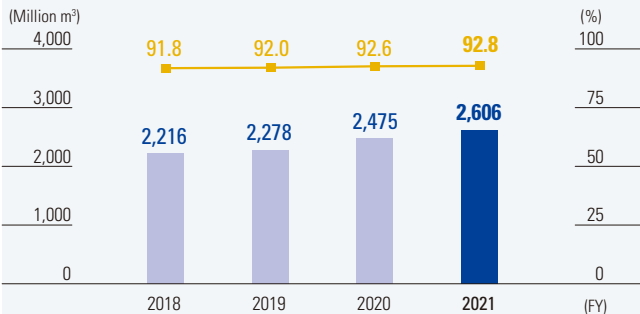
Indicators about energy-saving, resource-saving, and the reduction of the environmental impact

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



*Greenhouse gas emission intensity index (FY1990 = 100)

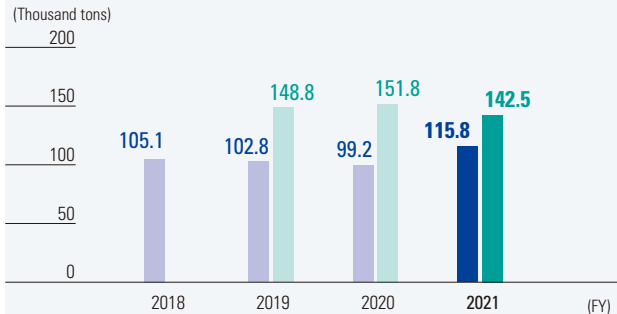
Water usage*/Recycled ratio



■ Volume of water used (LHS) — Recycled ratio (RHS)

*Total quantity of water withdrawal and recycled water

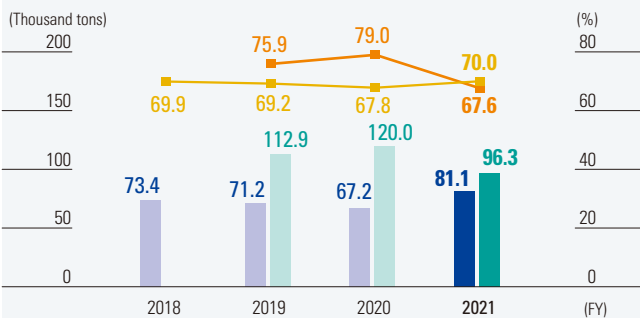
Amount of waste generated



■ Domestic consolidated companies ■ Overseas consolidated companies

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

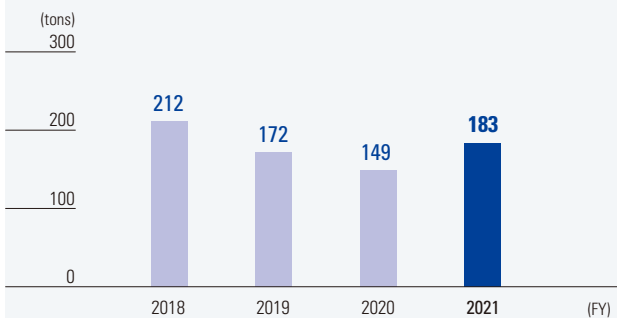
Amount of waste recycled/Waste recycled ratio



Amount of waste recycled (LHS) ■ Domestic consolidated companies ■ Overseas consolidated companies
Waste recycled ratio (RHS) — Domestic consolidated companies — Overseas consolidated companies

*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.