

Message from CEO

I Aim to Create a Functional Chemical Manufacturer That Can Compete on the World Stage. As CEO, I Will Give Top Priority to Developing Human Resources.

I am Hidehito Takahashi, and I became president and CEO of Showa Denko K.K. and Showa Denko Materials Co., Ltd., in January 2022. With the unification of the management systems of both companies, Showa Denko and Showa Denko Materials have effectively realized their integration through a system in which 12 corporate officers common to both companies, under the president and CEO, execute the management of both companies. We will complete the integration as a newly integrated company (Resonac^{*}) in January 2023, and I am determined to work with everyone to enable the newly integrated company to make the leap forward to becoming a global top-level functional chemical manufacturer.

Our major advantage is the present overwhelming superiority over other companies of our semiconductor materials in terms of scale and product range. We will highlight to the world the superiority of our semiconductor and electronic materials segment, which is integral to the growth of the data economy, where vast amounts of data are utilized in economic activity. At the same time, we will thoroughly refine businesses with potential through portfolio management and strengthen the financial standing that underpins them. Our human resources, however, are the most important factor in achieving our goal of becoming a global top-level functional chemical manufacturer.

My leadership policy is to focus on doing what only I can do. What does this consist of? The answer is human resource development. Developing human resources requires time, passion, and perseverance. To this end, I will devote all of my time to human resource development and personnel matters.



President and CEO



^{*} The change of company name and the transition to a holding company structure are subject to approval at the extraordinary shareholders' meetings scheduled to be held for both companies in late September 2022.

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Aiming to Compete with the World through

I believe that my earlier career has helped prepare me to guide our strategy. Approximately four years after joining a bank as a new graduate, I went abroad to study for a master's degree in business administration, staying there to work after acquiring my degree to spend a total of 11 years overseas. In accumulating a variety of experiences as a bank employee, I came to feel that although the *monozukuri* (manufacturing) capabilities of Japan's manufacturing industry were first rate, its poor management and strategies had prevented it from prevailing against companies from Europe and North America. With the dream of competing with the world through Japan's manufacturing industry, I therefore decided to expand the skills and knowledge that I could use to contribute to Japan's manufacturing industry, by accumulating a wide range of experiences.

After returning to Japan, I was approached by the General Electric Company (GE)—where Jack Welch's management was at that time garnering acclaim—which I joined with the aim of developing myself until I returned to a Japanese company. I served as division manager and in other positions at three foreign-owned manufacturers, including GE. These experiences honed my ability to look at matters with a foot in both camps: Japan as viewed from overseas, and overseas as viewed from Japan.

Since joining Showa Denko, I have consistently tackled three initiatives. The first is reform of our portfolio. I strengthened the Carbon Division through the acquisition of Germany's SGL GE, acquired a downstream coating materials company, and launched a takeover bid against Hitachi Chemical. The second is the promotion of openness and accountability in business management. Introducing key performance indicator (KPI) management and standardizing reporting formats enabled the forming of connections between divisions. The third is improvement of marketing. I have long felt that Japan's general chemical manufacturers have a low level of awareness of marketing. With this in mind, I established a new marketing team in the Corporate Strategy Department. The new team's activities included strengthening the management of research and development themes through the incorporation of a marketing perspective. The integration with Showa Denko Materials, which is in closer proximity to end-users, also bolstered our marketing capabilities. As all of these three initiatives are poised to achieve their goals, I have decided to devote all of my time and energy to developing human resources going forward.

In these ways, I promoted reforms to unlock Showa Denko's potential. Accordingly, when I was sounded out about becoming president and CEO, it was natural for me to accept. I viewed it as recognition of my experience and track record to that point in promoting efforts in pursuit of Showa Denko's quest to become a company that can compete on the world stage.

Becoming a Team Where People Trust Each Other to Facilitate Sound Management

I believe that management is a team effort. To facilitate sound management, a company must strengthen its management team, ensure their psychological safety, and eliminate any unconscious bias. To illustrate, I would like to discuss the actions I took to ensure psychological safety among the management team. In launching the new management system, the 12 members, including myself, who would become corporate officers went on a two-day training camp in December 2021, at which we worked on team building. In a classroom session in the first half of the first day, after learning about the state of the corporate cultures of the two companies and what constitutes a team, we discussed the type of culture and team we would like to create. I spoke of my aim to create a team in the style of a jazz band without sheet music, where one member cues in another by making eye contact and each can anticipate another's intentions. In the second half of the day, we held a program in which the participants wrote down (while I was out of the room) what they wanted me to stop, what they wanted me to rectify, and what they wanted to ask me, in response to which I would comment one by one. This exercise was a team-building technique known as new-leader assimilation^{*}, an initiative to improve relationships between managers and their subordinates by strengthening their mutual understanding. In the first day's session, we were able only to exchange opinions briefly, with comments limited primarily to requests for me to maintain a levelheaded response, such as to improve the way I sat to avoid giving a negative impression and to listen earnestly to others, even when they spoke at length. Other comments even suggested that my career history was so pristine that it was off-putting. On the second day, however, I received two to three hours of negative interview results in response to my presentations at the town-hall meetings we had held, criticizing everything from the content of my presentations to my way of speaking. Since I take critical opinions as valuable feedback that helps me to grow, I never feel angered or disheartened by them, but even I found such comments hard to take. There was no time for discouragement, however, as I was about to make a presentation to the camp members. Naturally, in light of the comments I had just heard, I played it safe in my remarks. After my presentation was finished, however, the 11 members said that my new style of speaking was dull and that there was no need to change to that extent as they would make good any of my shortcomings. When I heard this, I felt that we had truly become a team.

I do not believe that I can accomplish everything on my own, nor do I want to be an emperor in new clothes. I wanted to ensure everyone's psychological safety and create a system that allows bad news to be delivered to me at once. I think the training camp has enabled us to create a team whose members trust each other.

^{*} New-leader assimilation: A technique to unite team members with their new leader by creating an opportunity for subordinates to have a discussion regarding their manager in his or her absence, with the content of the discussion conveyed to the manager anonymously.

I incorporated this technique into the training camp activities with the object of accelerating the launch of the new team and advancing operations smoothly by strengthening mutual understanding.

The Critical Period of Post-Merger Integration

As can be seen from reading the career histories^{*1} of the corporate officers common to both Showa Denko and Showa Denko Materials, who took up their positions in January 2022, not all of them are originally from either Showa Denko or Showa Denko Materials, with many recruited from outside the companies. The new team of 12 comprises seven corporate officers from Showa Denko and five from Showa Denko Materials. Including myself, five of the seven corporate officers from Showa Denko joined the Company in or after 2015. I am well aware that the present time, in which two companies of large scale are in the process of becoming one, is what might be described as a critical situation. Since time is of the essence for post-merger integration, we are creating an optimal management team while making up for a shortage of internal human resources with experience from external sources, although continuously pursuing such a strategy over the long term would not be advisable. Reflecting on this, I believe that developing our own human resources while we buy time in this way is of the utmost importance.

As explained in detail by Hideki Somemiya, Showa Denko's chief financial officer (CFO), and Tomomitsu Maoka, the chief strategy officer (CSO), in their discussion with the analyst Mikiya Yamada elsewhere in this report^{*2}, until the promotion of openness and accountability and the increase in standardization in our businesses, the head office and individual divisions communicated in a manner resembling a hub-and-spoke system. Since each division had its own rules and operations, it was difficult for employees to understand anything other than their own division, and it was taken for granted that leadership positions would be filled by those from within a division. To address these issues, we spent three years working to promote openness and accountability and increase standardization, enabling us to cross divisions to handpick general managers. As a result, general managers of divisions today are expected foremost to provide leadership, rather than have complete knowledge of a division.

Showa Denko has 13 divisions. The general managers responsible for these divisions ought to be personnel with the best leadership skills, rather than those who have the longest experience of serving in them. For example, when there are two people with leadership skills in one division but none in another, it is crucial to have in place a system to allow one of the two to promptly take up the general manager's position in the division in question. Although our efforts are still incomplete, I regard the fact that we developed a system to enable the transfer of divisional general manager-level personnel across divisions to be a significant step toward achieving reform.

I am also keenly aware of issues regarding the growth of our young employees. When I held a roundtable discussion with young employees from one of our divisions, I asked them where they thought they would be in a decade's time. One such employee imagined the series of personnel changes that would follow in their own division as a result of the departure of a particular person in a decade's time. As I believe that a businessperson's worth can be measured by the cumulative total of difficult situations they have faced and overcome in their careers, I am keen for young employees to experience divisions at various stages of development from a young age to facilitate their growth. I aim to boost the value of young employees by developing them through challenging assignments at both struggling and flourishing divisions.

At the same time, I want to keep in mind that there are as many careers as there are people. A company needs human resources who want to be managers, so from an early stage I will stretch employees who truly wish to compete. However, not all employees need to have such aims. Since employees differ in terms of when they can give their utmost effort, I aim to provide equal opportunities and expand the range of career path choices.

*1 For career histories and messages from the new corporate officers, please see Messages from Corporate Officers on page 14.

*2 Please see the Discussion on page 32.

Creating a New Company by Combining A and B to Produce X, Rather than Being Merely the Product of a Merger between Two Companies

Tomorrow will not be better than today unless we change what we do, the way we do it, and the people who do it. The integration of the companies comes with all three of these conditions for changing tomorrow. Opportunities such as this to change everything are a rare occurrence.

The integration of Showa Denko and Showa Denko Materials will see the companies take a new step as Resonac beginning in 2023. Although the two companies will become one, neither fully knows the other's human resources as yet. When managing through a mixed team, it is not healthy to have a situation where one half of the team knows nothing about the other. A shared language for discussing values is required to enable team members to communicate with each other on a common basis. To this end, in addition to the purpose of the newly integrated company set out in the long-term vision—to "Change society through the power of chemistry"—the newly integrated company has stipulated the values that it holds dear and established these as part of its corporate philosophy along with the purpose. The four values call for employees to be Passionate & Results-Driven, have Open Minds & Open Connections, be Agile & Flexible, and maintain a Solid Vision & Solid Integrity.

Although describing these as values may sound like overemphasis, it is actually reasonable to speak of them as such. I would not want to work with people who did not hold such values. The people we need at Resonac are those who hold these four values. The newly integrated company will become X (that is, a united company) when the purpose and values have been completely disseminated. To achieve this goal, we will focus on boosting the number of people who share these values by devoting time to instilling our corporate philosophy.

We will pass on our corporate philosophy through a cascade system, from myself to corporate officers and from them to each division and the frontlines. However, as the corporate philosophy is passed on through the cascade, the level of enthusiasm for it wanes. To revive the enthusiasm, I am currently visiting operation sites. As of July 2022, I have visited 44 such sites in Japan and overseas. I go to the frontlines as much as possible and value the time spent with employees. I ask them to join with us if the corporate philosophy strikes a chord with them and they feel enthusiasm for it, and tell them that I hope they will share their feelings on it with those who are absent. Communicating directly with employees in this way is what I can do best and what I am uniquely qualified to do.

Concurrently, we added the new goal of becoming a company that develops co-creative talent that represents Japan's manufacturing industry to the goals we have adopted of becoming a company that can compete on the world stage and a company that contributes to a sustainable global society. I hope that Resonac can be a company that is envied for its human resources. The characteristic linking these human resources will be our values.

Realizing a “Co-creative Chemical Company,” as Our Purpose Cannot Be Achieved through Our Efforts Alone

The power of chemistry is an indispensable part of creating the functions needed for people to live. Our belief that chemistry holds the key to solving environmental and social issues led us to adopt “Change society through the power of chemistry” as our purpose. However, our purpose cannot be achieved through our efforts alone. We can only realize our purpose through co-creation with a variety of stakeholders, including customers, business partners, employees, and local people. This is why we seek to form connections with a wide range of stakeholders and why we chose “Co-creative Chemical Company” when we sought to put our vision into words. These words reflected the desire of both corporate officers and frontline employees.

Given that forming connections is not a one-way process, we cannot connect with others unless they choose to connect with us. Being chosen by others means becoming a good company. When we considered what constitutes a good company, sustainability emerged as a keyword. I believe that sustainability pertains not only to sustainability of the environment but also a company’s ability to maintain its existence by continuously maximizing its value. A good company cannot survive without first earning revenues; at the same time, it will not be chosen by others unless it contributes to society. These aspects are two sides of the same coin. An unprofitable company cannot contribute to society. I believe that we must create a company that can strike a balance between these aspects. In this sense, the Showa Denko as it currently stands cannot be described as a good company. We must evolve into a company that is chosen by others. Winning trust in our management team by establishing a high “say-do” ratio* and achieving strong business results is integral to commanding the confidence of investors and other stakeholders. A company that is unable to do this cannot become a good company.

* Say-do ratio: The ratio between what people say they will do and what they actually do.

Our Materiality for Sustainability as a Mirror Reflecting Our Ideal State

The role of management in maximizing corporate value is to create an environment that facilitates continuous growth and boosts profits. To create such an environment, we must resolve our three sustainability-related material issues.* The way we will do this is through our strategies. Resolving our materiality for sustainability will enable us to continuously boost profits and achieve growth. Environmental issues, human rights, diversity, and other issues are included in this scheme. The three materiality for sustainability that we have formulated are like a mirror reflecting our ideal state, in light of which we have derived our main strategies: establishment of a world-class revenue base, improvement in portfolio management, and innovation (technology × business model).

With regard to portfolio management in particular, although Showa Denko currently maintains a wide range of businesses, the Company's corporate value is lower than the sum of the corporate value of each of its individual businesses, resulting in a conglomerate discount. We intend to raise the visibility of this issue and make clear the actions that we must take to address it, enabling each division to understand what a conglomerate truly is and why such a discount occurs.

There are three judgment conditions for achieving an improvement in our portfolio: whether a given business is consistent with our strategy, including sustainability; whether we are the best owner; and whether the business can achieve the rate of return that we expect. In line with these conditions, we will operate our businesses with discipline. Some investors may argue that a company president should concentrate on businesses that can demonstrate the most corporate value without, in their opinion, wasting time on examining the portfolio internally. Operating businesses with the discipline I just mentioned will be important to avoid such arguments while following through on our commitments will help build trust in our management team.

* Our three materiality for sustainability: Strengthen competitiveness and create social value through innovation; gain social credibility through responsible business management; develop autonomous, creative, and active human resource and culture.

Laying the Foundations to Become a Company That Cultivates Co-creative Human Resources

Although I have discussed what constitutes a good company, we must also consider the question: for whom are companies good? In concrete terms, a company that is good for its shareholders may not necessarily be one that is good for its employees. I believe that the only way to balance both is to become a company that cultivates co-creative human resources.

While I mentioned previously that a businessperson's worth can be measured by the cumulative total of difficult situations they have faced and overcome in their careers, I feel that the cumulative total stops increasing for businesspeople at most Japanese companies, where employees serve long apprenticeships. Going forward, I aim to create role models and build a path for young employees to one day become corporate officers by handpicking young employees to expand the cumulative total of their worth from an early stage. However, the cultivation of employees cannot be achieved overnight. I expect that it will take 10 years to achieve our aims in this regard. Regrettably, I will not be able to attain my ideal vision during my own tenure as president and CEO. Nevertheless, when I step down I hope to have it said of me that I laid the foundations for Resonac to become a company that cultivates co-creative human resources.

As I believe that the unification of the management systems of Showa Denko and Showa Denko Materials has enabled the creation of a management team that is worthy of trust, I am determined to deliver results. I would like to ask for your support and cooperation in our efforts.

Our viewpoint about sustainability

[Our viewpoint about sustainability](#)[Contribution to the SDGs](#)[Responsible Care activity](#)[Stakeholder communications](#)[Participation in Initiatives](#)

Our viewpoint about sustainability

To change society through the power of chemistry based on our purpose, we are strengthening our business execution system in accordance with the belief that we must position the concept of sustainability as an essential component of management. As part of these efforts, we have established Sustainability Vision 2030 and identified materiality for sustainability to implement the main strategies of our long-term vision. We are also working to raise awareness of the material issues within the Company.

Roadmap for Achieving Sustainability Vision 2030

Positioning 2022, the year preceding the launch of the newly integrated company in 2023, as a year for preparations to achieve Sustainability Vision 2030, we have conducted repeated discussions and built a system to achieve the vision, such as incorporating issues of materiality into our medium- to long-term targets. In 2023, we will continue our efforts with the aim of enabling our unique essence to blossom from approximately 2026 onward, by adapting our initiatives based on engagement with a variety of stakeholders.

To achieve Sustainability Vision 2030, we have established five key areas and are promoting activities on a Companywide basis with the Sustainability Department, which began in January 2022, serving as the secretariat. The five key areas are (1) improvement of sustainability management to integrate it with management and business strategies; (2) creation of sources of growth through the development of businesses and technologies with a focus on sustainability; (3) creation of value resulting from the resolution of cross-organizational issues, such as carbon neutrality; (4) value creation through improvement of stakeholder engagement; and (5) cultivation of a sustainability mindset among employees.

Sustainability Vision 2030

Achieve corporate growth through the resolution of social issues

Develop into a company with like-minded partners across the world that realizes its own continuous growth and corporate value improvement, by solving social issues and offering value to society through its technologies and businesses

A company with like-minded partners throughout the world

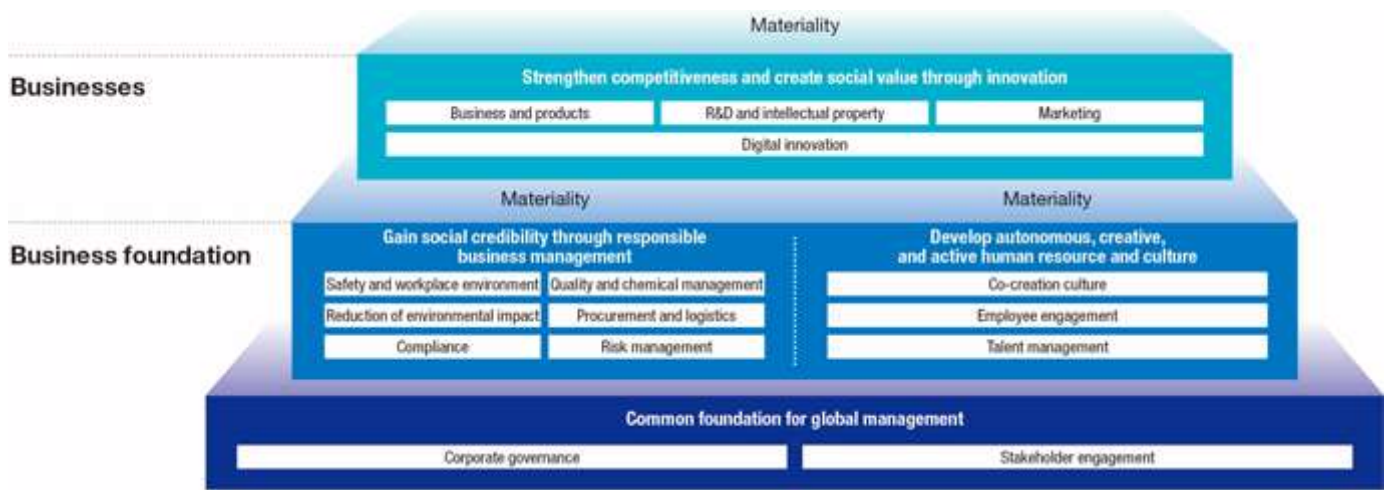
Become a “Co-creative Chemical Company” that is the first choice of, and can choose, partners in creating a sustainable and better society, including future generations of customers, employees, investors, and stakeholders



Materiality for sustainability of the newly integrated company

With an eye on 2030, Showa Denko has identified three issues of materiality in addition to their constituent elements. We have reflected these issues of materiality in the strategies set out in the long-term vision, and aim to incorporate them into our nonfinancial KPIs by approximately 2025.

The three issues of materiality are also related to the ideal state set out in our long-term vision through to 2030: becoming a company that can compete on the world stage, a company that contributes to a sustainable global society, and a company that develops co-creative talent that represents Japan’s manufacturing industry. In addition, they address both the achievement of our long-term vision and the expectations of society. While we have not set KPIs for corporate governance or stakeholder engagement, we will also focus on these areas, which are as important as our issues of materiality in establishing a common foundation for global management.



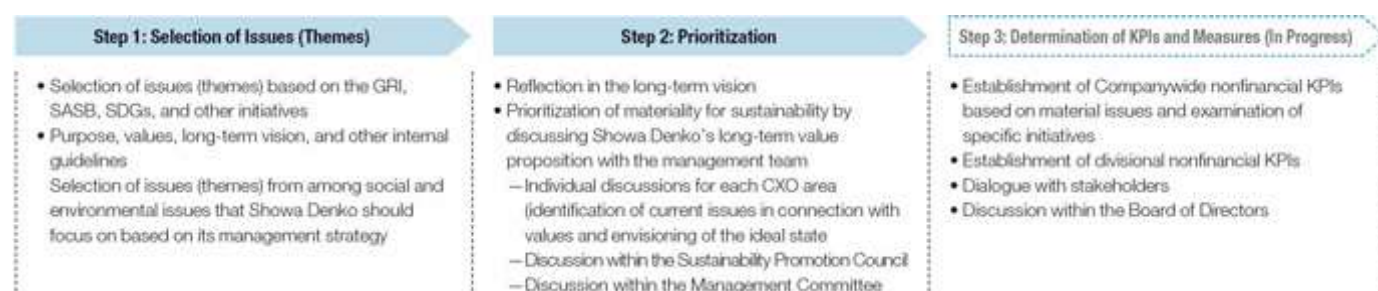
The Showa Denko Group is committed to contributing to solving social issues, with a focus on the SDGs, through its business activities. We have positioned the focus of our corporate activities as contributing to SDGs 12 and 17 as a Co-creative Chemical Company that seeks to create a recycling-oriented society. Goals that we contribute to through businesses and products are in the upper part of the semicircle, with goals that we contribute to through our business foundation in the base. Going beyond areas where we already contribute through our businesses, we are looking ahead with the aim to contributing to the creation of a future that we seek to realize through the power of chemistry.



Process for Formulating Materiality for Sustainability and Nonfinancial KPIs

In identifying its materiality, Showa Denko selected issues that contribute to realizing its long-term vision in terms of both expectations from society and level of importance to the Company. Currently, we have begun formulating materiality and related strategies and measures as well as Companywide

nonfinancial indicators. Going forward, we plan to further evolve them, including by establishing divisional KPIs, through discussions with the Board of Directors and dialogue with stakeholders.



Materiality for Sustainability and Nonfinancial KPIs

We will increase the likelihood of achieving our issues of materiality with an eye on 2030 and our related medium-term nonfinancial KPIs. We will do this by featuring the KPIs in a series of Companywide management cycles ranging from formulation to implementation, progress confirmation, and monitoring and supervision by the Board of Directors.

The table below shows our corporate-level KPIs based on our three issues of materiality. (For a portion of the KPIs, the indicators have been removed.) We will incorporate the indicators into each divisional unit while continuing to hold repeated discussions, to determine specific initiatives that enhance the motivation of employees to engage with them.

Going forward, we will continually revise the KPIs in accordance with our level of progress in achieving them, and with the views and expectations of a variety of internal and external stakeholders.

Strengthen competitiveness and create social value through innovation

The Company's ambition	Our ambition	The source of our growth lies in business activities utilizing our technological capabilities to change society through the power of chemistry. We will strengthen our competitiveness through innovation and our businesses to create social value.
	2030 targets	We create social value through our businesses via a series of processes—from the identification of social issues to the development of technologies and the provision of solutions—and the harnessing of initiatives through co-creation.
	Key constituent elements for achieving issues of materiality	<ul style="list-style-type: none"> • Creation of social value through our businesses • Identification of social issues and provision of customer value through marketing • Facilitation of open innovation and cooperation • R&D and intellectual property strategies that solve social issues • Products and business strategies that contribute to the achievement of the SDGs • Digital innovation that improves and accelerates the creation of social value
KPIs (Note: issues we plan to discuss and confirm with stakeholders)	Key items	<ul style="list-style-type: none"> • Setting of targets and establishment of evaluation indicators for sustainability businesses and products • Initiatives for life cycle assessment (LCA)
	2025 targets	<ul style="list-style-type: none"> • Establish, implement, and monitor targets by business and mainstay product • Calculate the LCA for mainstay products and introduce evaluation methods at the R&D phase
	2021 results	<ul style="list-style-type: none"> • Launched studies to formulate business evaluation indicators that include new social and environmental aspects • Commenced the pilot operation of a scheme to calculate our carbon footprint
Value creation	Social value	<ul style="list-style-type: none"> • Create social and environmental value directly and indirectly as a chemical manufacturer that serves as the basis for a variety of industries
	Environmental value	<ul style="list-style-type: none"> • Aim to maximize our positive impact and minimize our negative impact on society and the environment through the thorough implementation of responsible consumption and production in all of our businesses
	Economic value	<ul style="list-style-type: none"> • Create economic value by achieving business growth through the provision of social and environmental value, thereby helping to improve our corporate value • Raise employee motivation by helping employees to gain a solid sense that we are realizing our purpose through our businesses

Gain credibility through responsible business management

The Company's ambition	Our ambition	As a chemical manufacturer, we will conduct responsible business management in all of our businesses from perspectives including safety, the environment, and quality to realize a sustainable society together with stakeholders, such as suppliers and customers. In addition, we will reinforce and enhance our system for managing increasingly diverse and complex risks by thoroughly implementing soft-law-based compliance going beyond legal and regulatory compliance.
	2030 targets	In addition to cultivating a safety culture and eliminating accidents of every kind, we will earn the trust of stakeholders by minimizing and preparing to tackle a wide range of risks, including strategic, operational, and hazard risks, to flexibly address the changing management and business environments and continuously offer value that is unique to us.
	Key constituent elements for achieving issues of materiality	<ul style="list-style-type: none"> Establishment of environments where all people can work with peace of mind Provision of quality and safety to maximize customer value Reduction of environmental impact throughout the entire product life cycle Creation of a sustainable society, by working together with suppliers Thorough implementation of soft-law-based compliance going beyond legal and regulatory compliance Reinforcement of our system for managing increasingly diverse and complex risks
KPIs (Note: issues we plan to discuss and confirm with stakeholders)	Key items	<ul style="list-style-type: none"> Cultivation of a safety culture and elimination of lost-time incidents, facility accidents, environmental accidents, accidents involving products, and product compliance violations Reduction of environmental impact resulting from business activities Promotion of sustainable procurement Strengthening of integrated risk management and thorough implementation of compliance going beyond legal and regulatory compliance
	2025 targets	<ul style="list-style-type: none"> Achieve zeros in five target categories Reduction of greenhouse gas emission (GHG) volumes Improve the quality of communication utilizing a self-assessment questionnaire Entrench a global compliance standard and code of conduct within the Group Establish and operate an integrated risk management structure and enhance our risk management system
	2021 results	<ul style="list-style-type: none"> Number of serious lost-time incidents, serious facility accidents, environmental accidents, and quality compliance violations Began consideration of new sustainable procurement guidelines (scheduled for formulation and disclosure in 2022) Launched the examination of a new risk management system, compliance standard, and code of conduct (scheduled for formulation, introduction, and disclosure in 2022)
Value creation	Social value	<ul style="list-style-type: none"> Balancing of our contribution to the resolution of social issues and duty as a chemical manufacturer through responsible business management
	Environmental value	<ul style="list-style-type: none"> Reduction of environmental impact through improved recycling rates by reducing GHG emissions and waste
	Economic value	<ul style="list-style-type: none"> Improvement of motivation, raising of productivity, reduction of costs, and enhancement of brand value through eradication of all types of accidents and other incidents and increased efficiency of internal processes

Develop autonomous, creative, and active human resource and culture

The Company's ambition	Our ambition	The source of our value lies in cultivating co-creative individuals and nurturing a corporate culture to solve issues imaginatively via co-creation by forming connections autonomously with customers and stakeholders through empathy, including various parties who will lead future generations.
	2030 targets	Through the cultivation of creative and co-creative individuals and the nurturing of a corporate culture conducive to their development, we will aim to become a developer of talent whose employees are the envy of other companies.
	Key constituent elements for achieving issues of materiality	<ul style="list-style-type: none"> Nurturing of a co-creation culture born of mutual trust and respect Development and acquisition of professional-minded human resources Improvement of employee engagement
KPIs (Note: issues we plan to discuss and confirm with stakeholders)	Key items	<ul style="list-style-type: none"> Implementation of our corporate philosophy Strengthening of talent management Continuous growth of individuals and the organization Active involvement of human resources and ensuring of their psychological safety through the deepening of diversity and inclusion
	2025 targets	<ul style="list-style-type: none"> Further evolve and strengthen examples of co-creation from our global awards Increase the number of appointments through in-house recruitment that promote autonomous career development Improve engagement-related scores Enhance the diversity of management and nurture an inclusive corporate culture by increasing the ratio of female managers
	2021 results	<ul style="list-style-type: none"> Planned and launched global awards (opportunities to accelerate the embodiment of our purpose and values) for the newly integrated company Designed the way in which we will operate in-house recruitment for the newly integrated company The ratio of female managers came to 4.5% in Japan and 11.5% globally
Value creation	Social value	<ul style="list-style-type: none"> Promote innovation through internal and external co-creation aimed at solving social issues by cultivating the growth and active involvement of creative and co-creative individuals and the nurturing of a conducive corporate culture.
	Environmental value	
	Economic value	<ul style="list-style-type: none"> Raise employee motivation and realize high productivity by boosting the competitiveness of human resources through strategic job rotations, with management developing leaders from the perspective of Companywide optimization.

Material issues for Sustainability and Nonfinancial KPIs (529KB)

Sustainability Management

The management team, corporate headquarters, business divisions, plants, and Group companies unite as one to promote cross-organizational projects and internal cooperation, with the CEO supervising and the CSO driving the promotion of sustainability. After deliberating and deciding on important items such as policies and plans in relation to sustainability, the Management Committee consults with and reports to the Board of Directors.

The Company completely overhauled its sustainability promotion system in 2022. Under the new

system, the Sustainability Promotion Council convenes a monthly meeting at which Group CXOs, including the president and CEO, assemble. The meeting sees discussions on a variety of topics, such as medium- to long-term strategies, nonfinancial KPIs, and engagement with stakeholders. In addition, the council has put in place a system to address specific issues with agility and on a cross-organizational basis by establishing projects and other bodies under its control. The Company also strives to cultivate a sustainability mindset by organizing forums for internal communication where officers and employees exchange opinions.



Previous Materiality

The Showa Denko Group’s materiality selected in 2015 is as described in the table below.

We will implement initiatives and announce the actual results based on this materiality.

Core tasks	Medium- to long-term policy	Materiality
Contribution to achievement of SDGs through business activities	<p>By making effective use of the Group’s products, technologies, and services, we will contribute to the creation of a society where affluence and sustainability are harmonized.</p> <p>Promote R&D in consideration of the SDGs</p> <p>Monitor contribution to the SDGs made through business activities and announce the results</p>	<p>Provision of products, technologies and services</p> <p>Access to Essential Services</p> <p>Consumer Safety and Health Protection</p> <p>Participation in Community Activities</p>

Core tasks	Medium- to long-term policy	Materiality
Tackling environmental issues	<p>We will conduct Responsible Care activities with a strong focus on “responsibilities as a manufacturer and as a user,” thereby contributing to the solution of global environmental problems.</p> <p>Reduce GHG emissions</p> <p>Foster 3Rs to reduce waste generation</p> <p>Reduce the discharge of chemical substances</p>	<p>Prevention of Pollution</p> <p>Use of sustainable resources</p> <p>Measures against climate change</p>
Establishment of sustainable methods for human resource development and improvement in working environment	<p>We will develop diverse human resources made up of people who can achieve growth with their company and contribute to a sustainable society, while also providing individual employees with workplaces where they can work with peace of mind and in good health.</p> <p>Develop employees and support their growth</p> <p>Promote diversity</p>	<p>Development of Human Resources</p> <p>Creating a comfortable workplace</p> <p>Equipment safety</p> <p>Occupational Health and Safety</p> <p>Thorough corporate ethics</p> <p>Protection of intellectual property</p> <p>Decision-making process and structure</p>

[Performance regarding material issues results in 2019-2021](#) (376KB)

Dialogue with Stakeholders

Talks with external experts

[About the Sustainability Strategy: dialogue with an expert in sustainability](#)

[Dialogue with a securities analyst](#)

Explanations about the following issues by employees in charge

[About Safety](#)

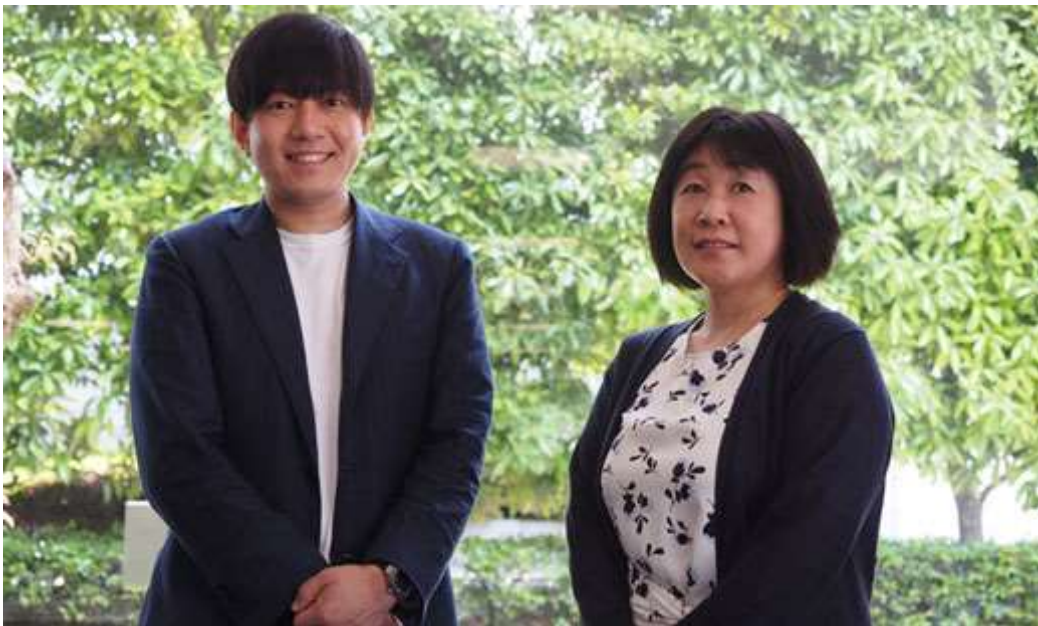
[About Compliance](#)

[About Risk Management](#)

[About Our Public Relations Activity \(Participation in the ICCA\)](#)

About the Sustainability Strategy

Position the concept of sustainability as an essential component of management to become a company with like-minded partners throughout the world



(Left in the photo)
Kenji Fuma, CEO,
Neural Inc.

(Right in the photo)
Nami Matsuko,
General Manager,
Sustainability
Department, Showa
Denko K.K.

We invited Kenji Fuma, CEO of Neural Inc., to talk about the Showa Denko Group's sustainability strategy with General Manager Nami Matsuko of the Sustainability Department of Showa Denko K.K. (The dialogue was held in a Showa Denko conference room on May 25, 2022.)

The power of materials and chemistry is integral to solving social issues.

Fuma: There are a ton of social issues and a range of materials are needed to solve them. For the manufacture of any product, including those used for the establishment of infrastructure in emerging

economies, lots of materials are necessary. Some of these materials, however, have negative impacts on the environment and society, and innovation is expected to deal with this issue. For the solution of present and future social issues, the importance of roles played by manufacturers of materials has grown to the highest level ever. I believe that there are many things that can and must be done through the power of chemistry.

Matsuko: Thank you very much for your encouraging comment. As a matter of fact, we are committed to “Change society through the power of chemistry” as the Purpose of the newly integrated company. As you have said, however, it is true that we have had negative impacts on the environment and society while striving to help people lead affluent lives through the power of chemistry.

In the long-term vision that we publicly announced in February 2022, we disclosed our sustainability-related material issues (materiality) for our business management toward achieving the vision for 2030. Moreover, thinking that we should in the past have been more imaginative about the future of society and the environment, we have created the following figure to show the future we seek to realize through the power of chemistry, which represents our commitment to contributing to the achievement of the SDGs through our business activities.

(Figure) The future we seek to realize through the power of chemistry (Extracted from the Integrated Report)



The Showa Denko Group's approach to and the direction of its measures for sustainability

Position the concept of sustainability as an essential component of management to become a company with like-minded partners throughout the world

Fuma: CEO Takahashi promised to “Position the concept of sustainability as an essential component of management” in the updated version of the long-term vision (Related link: [Updated long-term vision in PDF format](#) [1.39 MB]), and in fact the Showa Denko Group is allocating its managerial resources by giving priority to sustainability, which I think is great and hard to disagree with. Taking this approach is truly important for the newly integrated company to achieve transformation as a chemical company and manufacturer of materials as the importance of such companies is further increasing.

I also think the idea expressed in the vision to “Become a company with like-minded partners throughout the world” is very good. Upholding this idea in the corporate vision, which represents a top-level concept of the Group, proves that the Group is quite advanced in terms of sustainability. The idea implies that the Group is quite strongly committed to sustainability and the co-creation of a sustainable society, for which it has firmly decided to select partners and to be selected as a partner.

(Figure) Long-term vision (Extracted from the Integrated Report)



It is necessary to eliminate restrictions in relation to people, products, money, time, and other matters in order to prepare for dramatic changes that will take place in and after 2030.

Fuma: Also, in order to achieve corporate growth by solving social issues, it is a good idea to include human resource-related issues in your issues of materiality. With regard to human resources, it is indeed necessary for you to develop talent, including researchers, sales personnel and manufacturing staff, by backcasting from the ideal, so that you can continue to develop and supply materials with pride. If you start human resource development based only on the methods, systems and capital that are presently available, you might head in the wrong direction. There remain only about 8.5 years in the period for your long-term vision. You should position the 8.5 years as a period for preparing to reap the fruits of innovation in 2030 and beyond. In the 2030s, substantial changes will occur in relation to the use of energy and the circulation of resources due to progress with the conversion of materials, and you should be at the center of the changes as a chemical company and manufacturer of materials. Given that changes in the business environment will become even more dramatic during the 8.5-year period, I propose that you position the 8.5 years as a period for

preparing to reap the fruits of innovation in 2030 and beyond, eliminating restrictions in relation to people, products, money, time, and other matters.

In other words, you need to prepare for the coming age of dramatic changes by steadily executing a PDCA cycle and ensure governance in your process to incorporate the perspective of sustainability in the nonfinancial KPIs that you are now formulating and in your future R&D and business promotion projects. Let me again emphasize the importance of not imposing restrictions in relation to people, products, money, time, and other matters when discussing related issues. It is also essential to develop the next generation of leaders who will be at the heart of the Group's management in the coming age of transformation and to involve them in the discussions.

Innovation means to boldly invest in things that appear to be a huge "cost" in order to reap even bigger returns.

Matsuko: I think the thinking of many companies, including ours, about the future tends to be shaped by the current limits on managerial resources. It is not easy for such companies to discuss investments from a long-term viewpoint or share values across generations. Instead, they tend to discuss to choose one of the two out of "profit" or "responsibility & contribution," and "present" or "future." This is of course not a problem limited to Japanese companies and may also apply to the investor side. The need to overcome this problem seems to be one of the factors that caused the revision of the Corporate Governance Code. What do you think about this?

Fuma: For example, the Kishida administration has upheld the policy of investing a total of 150 trillion yen in carbon neutrality over the next decade. However, the government will not give subsidies for all the money required for this investment. Both the public and private sectors will raise funds for the investment and the possibility of such investment will eventually depend on whether or not companies and investors can take a long-term view. At least in Europe, after long years of struggle, both the public and private sectors are beginning to move in that direction. For such financing, strict conditions need to be met for the use of capital, projects and systems for sustainability.

From the perspective of short-term profit and loss, you tend to focus on profit and then consider spending for social contribution as a "cost." What is important is for the management team to decide to take a risk and make a large investment for the creation of a future business, on which they will gain returns only after a period that is much longer than what you would normally expect. By the revision of the Corporate Governance Code, directors and particularly outside directors who, like a third party, can take longer and more comprehensive views, are required to play the role of getting the management team to allocate managerial resources from a longer-term viewpoint while also maintaining discipline.

Matsuko: In order to turn the claim, "We will grow our business to contribute to society and create more value"—which sounds lip service—into reality, top managers need to have cash and courage, and the corporate governance system supports them in a strict but affectionate manner, I think.

Fuma: Yes, but what comes with the support is larger responsibility. Chemical companies and manufacturers of materials need to improve their product performance, reduce their costs by measures including the pursuit of economies of scale, minimize their environmental impact and address various other things that might be mutually conflicting. To innovate, these companies must do more than develop innovative technologies and seek their practical application. They need to find a way to boldly

invest talent, resources and money in what may seem to impose a huge “cost” on them, and then be able gain returns on their investments, which I believe is the true meaning of innovation as it relates to the chemical industry.

Not only Western chemical companies but also their counterparts in South Korea and China are changing their direction to foster this kind of innovation, and that with amazing speed. If you do not follow this trend, you are saying, “We will not participate in this competition.” Competing on the world stage means to innovate in this way or reform your business model.

Our materiality and nonfinancial KPIs

Matsuko: Since specifying our issues of materiality, we have been setting nonfinancial KPIs as part of our effort to formulate and implement concrete measures for the issues. We have entered the stage of setting specific KPIs for the two issues of materiality, which are “Gain credibility through responsible business management” and “Promote a corporate culture that nurtures autonomy and creativity” in time for the publication of the Integrated Report. Going forward, we will think more deeply about the KPIs and also start making examinations for “Strengthen competitiveness and create social value through innovation.”

We have been committed to clearly setting our priorities based on the challenges and aspirations felt on-site at our respective workplaces. We have been holding a series of discussions with the management team on the challenges that all of us view as those to be met for us to be trusted and selected by our stakeholders including customers and to make selections ourselves to hold onto the uniqueness of the Showa Denko Group. As a result, the KPIs are not limited to numerical indicators and include a number of indicators on the establishment of qualitative processes. We also need to meet the challenge of monitoring the results of our activities in an objective manner, but we will start by checking whether or not we are working on truly important issues. (Related link: Explanations made by those in charge of safety, compliance and risk management at the Group)

There is no need to make perfect KPIs from the outset. By starting to work on KPIs, you can identify problems to make progress.

Fuma: You do not need to make perfect KPIs from the beginning. What is crucial is to move forward a step or two from the status quo and inspire a desire on the part of the relevant divisions to also move forward. By starting to work on KPIs, you can identify specific problems and what it takes for you to make progress with your measures. Setting KPIs is not a goal in itself, and it is necessary to continue to review the related measures. In fact, you formulate KPIs by discussing the issues repeatedly and thoroughly to make sure they are indicators that can be truly shared by all members of the team, and this is a process that I highly appreciate. It is, however, also important for the Group to set its future targets via a backcasting method rather than trying to make improvements on the present situation as required.

In order to become a truly global entity in the future it is essential to make timely decisions

Fuma: When the Showa Denko Group achieves its goal of becoming a company that can compete on the world stage, it will conduct operations, including those for production, R&D and sales around the globe. And, as a global company, if you start operating a plant in an emerging market will you be able to achieve zero safety problems and zero waste at the level that you aim for in Japan? When you compete globally in 2030, to what extent will you be able to achieve what you aim to do based on your present KPIs? What I mean is, you need to set your KPIs by backcasting from your ideal state in 2030 and then pursue their achievement toward 2030. To this end, you should take a broader view beyond the national border and should not let your thinking be limited by your current managerial resources. You need to be committed to achieving the goal, including meeting these preconditions.

Matsuko: It would be difficult to do so. “We do not know where we will establish our new production bases and what kinds of companies in which industries we will acquire in the future. We therefore have no evaluation criteria or future targets and cannot make investments.” This kind of thinking will make us hesitant to move forward and as a result we will fail to take actions in a timely manner. What you have said reaffirms for me the importance of moving forward without making short-sighted decisions and of starting to make the decisions that we need to make now and continuously reviewing them to become a truly global company in the future, while at the same time demonstrating this attitude to our stakeholders to receive and incorporate their feedback.

Fuma: Yes. Global companies are not allowed to say, “We can do this in Japan but we do not know about the situation outside the country.” For example, for diversity, the challenges faced by the United States must be different from those faced in Japan because of racial and ethnic differences between the two countries. Accordingly, the approach to be taken for the solution of diversity-related issues will also differ. Also, for career management, is it appropriate to apply the Japanese way of thinking to employees working in India? To instill the Purpose and Values, you will need to meet more difficult challenges.

Matsuko: Yes, indeed. We absolutely need to devise measures to involve more diverse people in discussions conducted within the Group, for example, by inviting participants who know a lot about the local customers and cultures in other countries where we have bases to the monthly sustainability promotion meeting (held with the participation of all CXOs, including the CEO) and by listening to the opinions of each division and to employees from different generations.

Fuma: Also, for the ratio of female managers, which you use as an indicator, I can understand that you give priority to increasing the ratio in Japan, where you face a big challenge for this issue. However, you need to take one more step forward if you truly want to be a company that can compete on the world stage. If you want to increase the number of female engineers that join your company, you need to develop future female leaders by getting women and girls into science, technology, engineering and mathematics (STEM) education at the university and senior high school level. Global companies are already beginning to make such external investments for future generations. You can no longer say that such education is outside the scope of responsibility of tax-paying companies.



Matsuko: So, we can make more proactive contributions to the development of younger generations. It fosters co-creation for a better society for the Showa Denko Group to conduct activities that benefit both present and future generations. As for STEM, what we deem necessary is science, technology, engineering, art and mathematics (STEAM) education, or STEM plus art (A). Indeed, we need to have personnel versed in STEAM in order to demonstrate our imaginative capacity through creative thinking toward developing our business and R&D for the future that we seek to realize, while considering both our positive and negative impacts on the future environment and society as a chemical company and manufacturer of materials.

Fuma: Yes, you have many things to do, but I believe you are making a good start. Please let me repeat that you should not set your vision based on restrictive limits. You should instead use the backcasting method, think about what it will take for you to achieve your vision and embrace challenges to this end. I look forward to seeing you do it.

(About the talk)

We have been regarding the achievement of our medium-term KPIs as the first step to attain the long-term vision for 2030, but this conversation has made it clear to us that we should take bigger strides forward, take a truly global viewpoint, and encourage all employees to take actions with a shared mindset.

We have a long way to go to achieve the targets of becoming a “Company that can compete on the world stage” and a “Company with like-minded partners throughout the world,” and to this end we will devise measures to enable global and regional employees to achieve the targets through trial and error.

Dialogue with a securities analyst

Working to Be a Company Continuing to Create Value in a Sustainable Manner



(Left in the photo)
Hideki Somemiya
Managing Corporate
Officer and CFO
Showa Denko K.K.

(Center in the photo)
Mikiya Yamada
Senior Analyst,
Equity Research
Department, Mizuho
Securities Co., Ltd

(Right in the photo)
Tomomitsu Maoka
Managing Corporate
Officer and CSO
Showa Denko K.K.

Showa Denko invited Mikiya Yamada of Mizuho Securities Co., Ltd., to join Hideki Somemiya, Showa Denko's chief financial officer (CFO), and Tomomitsu Maoka, the chief strategy officer (CSO), for a discussion on the Company's financial and capital strategies, to ensure that it continuously creates value in a sustainable manner

(The dialogue was held in a Showa Denko conference room on April 13, 2022.)

Aiming to Become a Global Top-Level Functional Chemical Manufacturer from Japan

Yamada Let me begin by saying that the strategy outlined in the update of Showa Denko's long-term vision—of clearly committing management resources to business areas where the Company can prevail—was very straightforward. With the adoption of semiconductor materials and mobility as the two pillars of its investments, the Company has set out a well-defined scenario for the semiconductor materials area in which it will invest in semiconductor gases, a strength of Showa Denko; back-end process materials, a strength of Showa Denko Materials (formerly Hitachi Chemical); and ceria-based slurry, where vertically integrated synergies can be utilized.

In contrast, I believe that challenges remain in mobility. I wonder if Showa Denko's mobility business is of a sufficient scale for it to operate successfully in the mobility area. I have my doubts regarding both the significance of positioning mobility as one of the two priority investment areas and the likelihood of the Company prevailing in competition. Prevailing in growth areas naturally requires the commitment of abundant management resources. Unfortunately, however, I do not believe that Showa Denko's financial standing allows for the investment of adequate management resources in both areas at the present time. While I applaud the Company's determination and its approach to semiconductor materials, I think that many investors are looking for a more persuasive narrative on how it will implement its strategies.

Somemiya Thank you for your comments. As you correctly point out, we recognize that improving our financial standing is our highest priority. We must achieve a more appropriate capital structure and develop the strength to facilitate our next major growth investment. Under the new leadership of president and CEO Takahashi, Showa Denko has laid out a management approach with an emphasis on return on invested capital (ROIC), with a view to not only instilling portfolio management (P.28) within the Company but also making disciplined investment an aspect of our appeal to external communities. This stance reflects our intention to respond to the points raised by capital markets.

When I joined the Showa Denko Group in October 2021, head office and individual divisions communicated in a manner resembling a hub-and-spoke system. However, as we set about implementing portfolio management, those who lead stable earnings businesses within the Company are entitled to know how the businesses receiving the cash they have generated will invest that cash and what returns are being targeted. Therefore, to improve on the previous structure, we updated it to allow all the general managers of divisions to also take part in discussions on the plans of other divisions, beginning in December 2021. With the updated structure enabling each division to understand its own role in overall optimization, we have introduced ROIC and key performance indicators (KPIs) as a shared language and aim to make the structure function effectively. This structural change was not achieved overnight. Rather, it was realized by president and CEO Takahashi (the then CSO), who established the foundations over a period of three years, including the unification of reporting formats. Acquiring the former Hitachi Chemical entailed a financial risk in terms of generating cash flow. The acquisition was a biggest decision in our history. Given Showa Denko's current position, I regard achieving a more appropriate capital structure as an urgent priority to take the Company to a point where it can carry out strategic investments under normal conditions. We are aiming to generate ¥1 trillion in operating cash flow over the next five years and plan to invest between half and two-thirds of this amount with a focus on semiconductor materials. In the update of our long-term vision, we have indicated our intentions for capital structure and capital allocation as part of our financial strategies. We will also continue to refine our targets, such as the appropriateness of a debt-to-equity (D/E) ratio of 1.0—a long-term numerical target—and implement financial management to establish a balance sheet

with capacity for further investment. Although remuneration linked to our stock price currently applies only to directors and corporate officers, we envisage introducing this system for all employees at some point.



In promoting portfolio management, we believe that our corporate value will improve if employees strive to achieve overall optimization with an awareness of the roles of each portfolio category, which in turn allows us to show them that they will be rewarded accordingly. We therefore aim to implement this system for employees after providing a sufficient explanation of its introduction.

Maoka Showa Denko and the former Hitachi Chemical have a good relationship, with each strength complementing the other's weaknesses. Although Showa Denko, which is positioned in the midstream section of the value chain, has capabilities in materials development, difficulties in understanding how its products are used in the downstream section made it challenging to develop products with high added value. On the other hand, the former Hitachi Chemical, which is positioned in the downstream section of the value chain, has outstanding insight into how its customers wish to use its materials in their products and a wealth of know-how on meeting their requirements. However, over-optimizing its adaptability has resulted in the gradual erosion of its capabilities in midstream materials composition and development as well as in investment. We view the integration of the two companies as an excellent combination, because it facilitates value creation using the entire value chain, applying Showa Denko's material development capabilities to address the requirements of Showa Denko Materials' customers.

Going forward, the way in which we solve social issues will be an important theme. The main area in which we have been able to demonstrate our ability to create synergies is in semiconductor materials. We must set forth a more specific value creation scenario in the mobility area, exactly as Mr. Yamada points out. Today, our business activities involve the connected, autonomous, shared, and electric (CASE) field for automobiles. Within this field, we focus on electrification trends, as we believe it is crucial for us to enhance added value while creating new products and services that leverage the synergies of both companies.

Vertical integration that strengthens the value chain from midstream to downstream in such a manner is highly unusual. For this reason, I believe that we can create unique models and value and I aim to take on a variety of challenges.

Yamada You mean that the newly integration of Showa Denko and Showa Denko Materials will enable the integrated Company to proceed to a new dimension. To make that happen, I believe that it will be vital for everyone involved to work together, as Mr. Somemiya has explained. The Company will not be able to record great achievements unless all concerned are aware of their own roles and understand each other's specific characteristics and ideas. In that sense, communicating collectively, rather than on a one-to-one basis, surely holds the key to creating synergies and accomplishing strategies.



Somemiya You are absolutely right. If one excludes the large petrochemicals, hard disk, and graphite electrode businesses, Showa Denko is a collection of 20 or more medium-sized businesses with net sales on a scale ranging from ¥20 billion to ¥60 billion, as opposed to a corporate entity with net sales of ¥1.4 trillion. Accordingly, we view achieving overall optimization through portfolio management and ensuring that everyone understands the trajectory of our overarching strategy as critical aspects of our business management.

To this end, we will strengthen cross-divisional functions that transcend the boundaries of each organization. To give an example, the organization of the CFO, which I preside over, reports to Chief Human Resource Officer (CHRO) Nori Imai on frontline conditions and other matters as a member of the organization under the CHRO. In addition, those engaged in accounting in all divisions—who have thus far been closely affiliated with their own divisions—will report to me on such issues as division expenditures, as members of the organization under the CFO. In this way, we have put in place a system in which the CFO and the CHRO provide support for the operation of divisions while steadfastly communicating Companywide policies to divisions through those engaged in personnel and accounting in each division and functional division. The aim of this system is to strengthen cooperation between CXOs and business divisions. We have introduced the same arrangement for other CXOs as well, although the degree of corporate governance differs according to function.

In addition, we have begun tackling the development of human resources with high potential. While it had been common for employees to build a career in the division to which they were assigned after joining Showa Denko, the Company is now expanding the promotion of transfers across divisions and job rotations, including at the head office, which will enable management teams to identify and develop human resources with high potential.

Maoka Beginning in 2022, Showa Denko has been holding town-hall meetings at various locations. At these meetings, Mr. Somemiya touched on the ranking of business divisions in terms of ROIC. At first, I was concerned that we would receive negative feedback from those in the business field about being ranked in such a way. However, many responded that they were grateful, as no one had ever discussed such an issue with them before and it was enlightening. All those present expressed their understanding of the explanations provided on portfolio management and ROIC, which helped them to gain an appreciation of the rationale behind the Company's decisions. Speaking personally, I was greatly heartened to learn that employees felt this way on the occasion of the meeting.

Yamada Your experience makes clear that sharing information is the first step. I believe that making an issue visible facilitates the establishment of a shared language, which further enhances the importance of working together.

Maoka As horizontal cooperation progresses between businesses, situations will arise in which—for example—a business supplying raw materials commits funds to product development expenses or capital expenditures, which might put Business A at something of a disadvantage but result in a positive outcome for the Company as a whole. At such times, I intend to rate the efforts of Business A as valuable and demonstrate that assessment resolutely in terms of my actions. Since focusing only on numbers would ultimately result in failure, I believe it is crucial that we move forward while placing due importance on both individual businesses and the Company as a whole

Somemiya The greater the number of employees who understand and implement Showa Denko's purpose and values*, the better we can establish a virtuous cycle that improves not only the Company's financial but also its nonfinancial value. President and CEO Takahashi has frequently pointed out that tomorrow will not be better than today unless we change what we do, the way we do it, and the people who do it. Therefore, I hope that Showa Denko's Values will become a deeply ingrained part of its guiding precepts.

* Values: This is the value system we hold dear. It entails being Passionate & Results-Driven, Agile & Flexible, having Open Minds & Open Connections, and maintaining a Solid Vision & Solid Integrity

Yamada Although it may not be appropriate for an analyst who basically focuses on business results to say so, I believe that around only half of a company's value may be found in its numbers. To convert value that is not expressed in numbers into that which is visible in the numbers over the long term, it is important for employees to move in the same direction while remaining confident that they are being evaluated properly in both quantitative and qualitative terms.

Roadmap for Realizing Our Long-Term Vision as a “Co-creative Chemical Company”

Yamada As implied in Showa Denko's purpose—“Change society through the power of chemistry”—society will not be transformed without the power of chemistry. It is my belief that the power of chemistry is indispensable to maintaining the types of value that we currently enjoy, to the maximum possible extent. At the same time, the power of chemistry has an integral role to play in helping society progress toward the resolution of environmental issues, such as carbon neutrality, and the achievement of the United Nations Sustainable Development Goals (SDGs), including the goals related to social inequality and hunger, in a way that leads to greater affluence. With that said, the fact remains that the SDGs cannot be achieved through chemistry alone. This is why shifting to a co-creation model that reflects current circumstances is the correct direction for Showa Denko to take. The way in which it makes this shift will be of the utmost importance, and I have high expectations of the Company in this regard. Co-creation increases the number of stakeholders with whom Showa Denko engages. As such stakeholders each have stakeholders with a host of interests of their own, I believe that Showa Denko can make a more persuasive case for convincing stakeholders to join it in realizing co-creation, if it can demonstrate in specific terms the way in which it will distribute the value created with internal and external parties.

People's attitudes do not change readily. I believe that it is only when people first change their actions and achieve results and experience success that their attitudes change.

Maoka I believe that efforts toward carbon neutrality cannot progress without the consent of consumers. To this end, we must involve not only companies but also a variety of stakeholders, such as governments. Showa Denko carries out two sets of activities under the Jisso Open Innovation Network of Tops (JOINT) and JOINT2 (P.45), consortiums engaged in the development of semiconductor packaging materials, substrates, and equipment that are prime examples of activities involving stakeholders. As materials alone cannot create products of value, co-creation initiatives with a range of parties are indispensable.



Also important is highlighting the significance of such initiatives to the world. Even if Showa Denko does something of value, ultimately it will see no returns and create no incentives if no one knows that the Company was responsible for the achievement. Establishing a system to address this point will be a challenge for us as we go forward. Although we have focused on in-house collaboration between divisions and departments thus far, I believe that it is vital to create a foundation to create value by pursuing co-creation, without being constrained by company or corporate frameworks.

Yamada Providing an environment for creating such a foundation is of crucial importance. Meanwhile, I feel that the chemical industry is lagging behind other industries in making use of digitization. Although Showa Denko is making great strides in terms of streamlining production and other matters, I hope that it will leverage digital technology to connect directly with customers, academia, and society to create new value. I think that connecting directly with a variety of stakeholders will invigorate communication and increase the sharing of information, which will contribute to the overall optimization of companies and of the industry.

Somemiya Utilizing digital technology to connect directly with a variety of stakeholders certainly holds the key. I also hope that we can create a platform in which more people with open minds can participate, and construct an ecosystem that enables not only Showa Denko but all parties to enjoy the advantages.

Similarly, achieving carbon neutrality requires the involvement of all parties, including the industry as a whole and governments, rather than the efforts of a single company. To this end, we must create a movement that is committed to fundamentally realizing carbon neutrality.

Yamada If companies only invest at their own convenience and at a time that suits them, the fundamental issue will remain unsolved. Instead, I believe that it is crucial for co-creation partners to build systems by reconciling their respective viewpoints and objectives. Although Showa Denko is prepared to do what it can to realize carbon neutrality, making investments in carbon neutrality on its own would not produce the returns demanded by investors, who would not tolerate such investment. I believe that progress can only be made by improving co-creation to a stage where all parties know the actions that they must take in order to work together.

Promoting Dialogue with Investors and Other Stakeholders

Yamada This year marks the 20th year since I began covering Showa Denko, and I have been truly impressed with the progress it has made. Again, as Showa Denko's purpose sets out, society will not change without the power of chemistry. The chemical industry appeals to me. I sincerely hope that Showa Denko will become one of the world's leading chemical companies. To achieve this status, it must actively communicate information to customers and the various stakeholders with whom it engages in co-creation, including communicating more information to society and stakeholders.

Somemiya The reason we have not communicated information to an adequate extent lies in the fact that we have not been sufficiently active. Through my communication with investors as CFO, I have come to realize very keenly that Showa Denko has not sufficiently met the trust and expectations of its stakeholders. We have not necessarily been negligent in any way, and I do appreciate that we have worked to engage with stakeholders to the best of our ability. Nevertheless, given that we have not met such trust and expectations while remaining unaware of changes in the external environment due to our long history and past connections, we must make a fresh start. On this basis, the two companies will become a new company called Resonac^{*}, rather than two companies coming together. Accordingly, the new company will be aware of the need to create a vision and new value.

^{*} Resonac is the name of the newly integrated company to be established in 2023 (subject to approval at the extraordinary shareholders' meetings scheduled to be held for both companies in September 2022)

Maoka When Mr. Yamada spoke at a study session held for the management team at Showa Denko, his answer to a question on why the chemical industry was not fairly evaluated—despite the value it produced—was that chemistry was basically the name of a process and that the activities of the chemical industry were not widely known. This reply made a strong impression on me. It made me aware once again that it is important to objectively analyze how our business affects a variety of people and to develop methods of improvement. Ultimately, we deliver value to people, rather than companies or investors. We must devote ourselves to implementing a way of co-creating that captures people's hearts, unshackled by the past conventions of the chemical industry.

Profile

Hideki Somemiya

**Managing Corporate Officer and CFO
Showa Denko K.K.**

Hideki Somemiya held positions at Nomura Research Institute, Ltd., Merrill Lynch Japan Securities Co., Ltd., and JPMorgan Securities Japan Co., Ltd., where he was Managing Director of the Technology, Media & Telecommunication Group of the Investment Banking Division prior to joining Sony Corporation. At Sony, Mr. Somemiya was in charge of Groupwide M&A activities, served as CFO of semiconductor operations, and took part in the launch of an AI sensing solution business. He joined Showa Denko in October 2021 and took up his current position in January 2022.

Mikiya Yamada

Senior Analyst, Equity Research Department, Mizuho Securities Co., Ltd.

Mr. Yamada began his career at Dow Chemical Japan Ltd., where he served in a number of positions, including general manager of research and development and of financial planning as well as financial planning manager for

Dow's Pacific region. After working for Goldman Sachs Co., Ltd., JPMorgan Chase & Co., Lehman Brothers Japan Inc., and Barclays Securities Japan Limited, he joined Mizuho Securities in 2016. Mr. Yamada covers the chemical and textile sectors extensively in his current position.

Tomomitsu Maoka

Managing Corporate Officer and CSO Showa Denko K.K.

After starting his career at A.T. Kearney, Inc., Tomomitsu Maoka moved to Infineon Technologies Japan K.K., and then to Lenovo Japan K.K., where he was involved in business strategies and business model transformation, before joining Renesas Electronics Corporation. At the company, he covered various roles including Corporate Planning, the entire operations in China, etc. as Senior Vice President. He joined Showa Denko in October 2021 and took up his current position in January 2022.

About Safety

We give first priority to safety as our basic principle
Aiming for zero accidents by promoting
communication that starts with “Goanzen-ni”
(“safety first”)!



(Left in the photo)
Meiko Saihata,
General Manager,
Environment &
Safety Office,
Responsible Care
Department, Showa
Denko K.K.

The Showa Denko Group engages in a range of businesses, including the semiconductor materials and petrochemicals businesses. We frequently deal with hazardous substances as well as large and heavy machinery in our business operations and there could be a serious accident if we failed to pay proper attention. In order to prevent this from happening and ensure the safety of our own and our partner companies' employees and the local communities in the areas where we operate, we are conducting

and will continue to conduct activities to achieve zero accidents. In the following, Meiko Saihata, General Manager of the Environment & Safety Office, explains the activities.

1. Present job duties

I am in charge of environment & safety under the Chief Operations, Manufacturing and Engineering Officer (CMEO). CMEO Masami Tobito also serves as Chief Quality Officer (CQO) and supervises the Group's operations in the seven categories of environment & safety, chemicals management, quality assurance, purchasing & procurement, production technology, equipment technology, and manufacturing, the last of which encompasses all of the aforementioned categories. Among these, priority is given in particular to safety, which we regard as the basis for all our activities. Safety measures are roughly divided into those for (1) occupational safety, (2) equipment safety and (3) security and disaster control. Based on the recognition that both environmental and safety issues are a factor in accidents that can put human life at risk, I am fulfilling my duties with a sense of grave responsibility.

2. Medium- to long-term measures to be implemented for safety

Safety is an essential theme and one that is linked with the call to "Gain social credibility through responsible business management," which is one of the three sustainability-related material issues (materiality) that the Showa Denko Group has identified for the Group to achieve its own growth and also make contributions to society. We regard safety as the basis for our business activities and deem it important to build a system to ensure safety and nurture a culture of safety to eliminate occupational accidents and equipment-related incidents. Showa Denko and Showa Denko Materials (former Hitachi Chemical) will be integrated into one to become Resonac* in January 2023. Accordingly, we need to review the safety efforts made by the two companies to create effective safety measures to be implemented by the newly integrated company based on the shared concept of safety. As one of the milestones to this end, we are upholding targets for 2025.

* The change of the company name is subject to approval at the extraordinary meeting of shareholders to be held by each of the companies in late September 2022.

■ The KPIs set for safety based on the sustainability-related material issues (materiality)

Priority measures	Targets for 2025	Results in 2021
1) Fostering of a culture emphasizing safety	1) Establishment of a culture emphasizing safety to eliminate occupational accidents (measured through global employee awareness surveys and improvement seen in results)	1) Identification of potential risks and advancement of safety measures

Priority measures	Targets for 2025	Results in 2021
2) Occupational accidents	2) Zero serious occupational accidents (consolidated)	2) 0 (Showa Denko (consolidated in Japan) + Showa Denko Materials (non-consolidated))
3) Lost time incident rate	3) 0.1 or less (consolidated, equivalent to zero accidents resulting in lost work time over a 10-year period at a site with 500 employees)	3) 0.13 (Showa Denko (consolidated in Japan) + Showa Denko Materials (non-consolidated))
4) Equipment-related accidents	4) Zero serious equipment-related accidents (consolidated)	4) 0 (Showa Denko (consolidated in Japan) + Showa Denko Materials (non-consolidated))

3. Commitment to zero occupational accidents and zero equipment-related incidents

We are upholding zero serious occupational accidents and zero serious equipment-related accidents as our KPIs for safety. We aim to eliminate both occupational and equipment-related incidents. The frequency of occupational accidents is not just a statistic. It indicates the number of real people who have suffered. We should ensure that employees of the Group and its partner companies are not hurt or injured, and should not tolerate even a single accident. Rather than just mouth slogans, we need to communicate this across the company and examine each and every past occupational accident and equipment-related incident to make appropriate responses to eliminate them. It won't be easy to achieve zero, but I believe we can get there eventually.

In line with increased production, the number of occupational accidents has also been increasing recently. The occurrence of similar accidents at multiple places also reveals that we have not examined past accidents and shared the lessons learned sufficiently across the Group. It is difficult to control human consciousness and eliminate all human error. However, we need to carry out examinations of past incidents to implement measures on a long-term basis and share the experiences between our sites. In order to prevent the reoccurrence of similar incidents, we need to identify risk factors at each of our sites in an ongoing manner.

4. Measures to nurture a culture of safety

We greet each other by saying, "Goanzen-ni" (safety first)! I hope that employees of both Showa Denko and Showa Denko Materials will use this greeting on a daily basis to increase opportunities for them to think about safety. I hear that at a certain division members also say "Goanzen-ni" to employees working outside Japan to communicate the importance of safety. I will work to make this greeting a part of our daily operation and will also share safety-related messages through the intranet and the Group magazine to provide employees with more opportunities to think about safety.

The other day, I visited a Group site for environment & safety auditing and found that the on-site workers were highly safety conscious and were conducting outstanding safety activities. What happened was that there was an occupational accident at the site in 2019 in which an employee was seriously injured. After experiencing this incident, all of the on-site manufacturing processes and equipment were examined, and as many as 1,850 problems were identified. Subsequently, improvements were made, with more than 100 million yen invested. The head of this site, the general manager of the on-site manufacturing department and the environment & safety GL undertook examinations about the identified problems and gave improvement instructions, and this made the site's commitment to safety clear to on-site workers, which in turn encouraged them to conduct safety activities. The site has been hugely transformed because its employees made proactive responses to the safety commitment made by the site, I think.

It is critical that top leaders are working for safety in a serious manner. I therefore think the top management and safety managers, including myself, assume heavy responsibilities. As a means for our top leaders to communicate their safety commitment, their "safety declarations" are being relayed via the intranet. In order to promote safety activities, the top leaders of the entire organization and each workplace need to take actions proactively and build a workplace where all members voluntarily conduct safety activities in a mutually enlightening manner. Through the safety declarations, the top leaders, specifically the CXOs and general managers of the divisions, are thus sharing their safety commitment, including what they will do for safety, with all employees.

■ Part of "My Safety Declaration"



(2022年版)
宣言日 2022年2月6日

私の安全宣言

事故・災害を未然に防止するため安全宣言します！

みなさん、そしてみなさんの仲間が毎日無事に家に帰ることが全てに優先する文化を醸成します。

改善活動を推進します！

「しくみ」をつくり、「態度」を磨き、安全を「風土」にまで高めるべく、社員のみならずのコミュニケーションの機会を増やしていきます。

健康的な職場をつくります！

コロナ後のニューノーマルを見据え、なんでも話し合える職場をつくりましょう。

氏名： 高橋 秀仁



(2022年版)
宣言日 2022年2月16日

私の安全宣言

事故・災害を未然に防止するため安全宣言します！

ルールとマナーを守り安全で安心できる職場をつくります

改善活動を推進します！

- 効率的でメリハリのある新しいワークスタイルを目指します
- 心と身体の健康維持のために職場環境を改善します

健康的な職場をつくります！

部下と上司、同僚間の双方向のコミュニケーションを大事にして風通しの良い職場をつくります

氏名： 上口 啓一



(2022年版)
宣言日 2022年1月31日

私の安全宣言

事故・災害を未然に防止するため安全宣言します！

法令・規則・マナーを守り、事故を防止します

改善活動を推進します！

- 交通安全5則、道路交通法を守ります。
- ながらスマホをしません。
- 常に余裕を持った行動を心掛けます。

健康的な職場をつくります！

- 建設的な議論をみんなでできる、風通しのよい職場づくりを進めます。
- 仕事も家庭も両立できる、効率的で生産性の高い働き方を推進します。

氏名： 今井 のり

5. Ideas to achieve the ultimate in safety in the future

We make investments in safety measures, which we do not regard as a cost. For the Showa Denko Group, which is a manufacturer, preventing accidents directly helps the Group earn more trust from customers and other stakeholders as a corporate partner of choice, which in turn increases the Group's corporate value. Conducting safety measures is therefore the first step for us to "Gain social credibility through responsible business management."



The site that I mentioned earlier implemented safety measures after experiencing a serious accident and transformed itself into a highly safe site that is also outstanding in terms of DX. However, what is most important is to identify problems before accidents occur and make daily improvements to this end. Employees are in a position to make proposals on making investments for safety and top leaders are in a position to make investment decisions. We need to nurture a safety culture that helps individuals to be more sensitive to safety and work seriously for safety while respecting each other's opinions. In order to achieve this, I would like to foster internal communication. For the promotion of safety activities within the Group in Japan and abroad, I will do everything that I can. I will devise measures to this end going forward.

We give first priority to safety as our principle. While adhering to this idea, we will build a safety culture by building necessary programs and systems one by one. We have just started to do this and hope you will look forward to seeing what the Showa Denko Group will achieve going forward.

About Compliance

Penetrate Newly Integrated Global Compliance Standards and Code of Conduct into the Group in order to Enjoy Mutual Trust



(Left in the photo)
Hiroshi Ukita,
Manager, General
Affairs Department,
Showa Denko K.K.

(Right in the photo)
Daisuke Yoshida,
Senior Manager,
Compliance Group,
Legal Department,
Showa Denko
Materials Co., Ltd.

We see compliance not only as strict observance of the law, but also as “Solid Integrity” that goes beyond what is legally binding. We are promoting activities to link these ideas to the understanding and actions of people working at our Group globally. We want to ensure that each and every one of us has high ethical standards and that compliance awareness is instilled in each of our workplaces. We would like to explain what we are working on now to achieve “Solid Integrity” and what we will work on as a newly integrated company.

1. Present job duties

We are building a system to ensure that each and every person working for the Showa Denko Group, including Showa Denko Materials, does not breach laws, regulations and rules. To enforce compliance, we are preparing to introduce our new Global Compliance Standards, which set out the standards we must adhere to as one Group.

In addition, a new Code of Conduct is currently being formulated. By promoting these initiatives and helping to raise everyone's awareness of compliance, we will help to prevent compliance failures from recurring.

2. About the KPIs set for compliance based on our sustainability-related material issues (materiality)

■ The KPIs set for compliance based on our sustainability-related material issues (materiality)

Priority measures	Targets for 2025	Results in 2021
1) Entrenchment of the Group Code of Conduct	1) Increase workplace communication opportunities and number of participants	1) Commencement of the formulation of the new Group Code of Conduct (scheduled for completion in 2022)
2) Penetration of Group Global Compliance Standards	2) Reduction in number of serious legal breaches and increase in number of reports through the whistleblowing system	2) Commencement of the formulation of Global Compliance Standards (introduction completed in 2022,)

● About the first key item, “Entrench the Group’s Code of Conduct”

A Code of Conduct for the new integrated company is currently being formulated. While the Global Compliance Standards are a set of principles that must be observed, the Code of Conduct is being developed to include content appropriate for the conduct of employees of a co-creating chemical company, based on high ethical standards, Purpose and Values. Based on the codes of conduct that existed at both Showa Denko and Showa Denko Materials, Project members from both companies have gathered to discuss the contents. We plan to roll out the Code of Conduct to all Group employees during Corporate Ethics Month in October 2022.

● About the second key item, the Group’s Global Compliance Standards

We will introduce our new Global Compliance Standards in 2023. They are a set of rules that systematize the policies and systems for dealing with key compliance issues directly related to business activities, such as competition laws, prohibition of bribery and prevention of transactions related to illicit activities, as common rules for the Group. They stipulate the systems, business processes, etc. that

must be put in place to meet the compliance standards required by the international community as a global company. "Solid Integrity" will lead to employee pride and engagement. It is important that each and every employee understands and acts accordingly, so we will carefully explain and instill these standards.

In order to implement the Global Compliance Standards in the same way all over the world, a common awareness and understanding is necessary. Laws differ from country by country, but there is not much

difference in the fundamental concepts. We would like to formulate the core of each such law in the form of rules that are adapted to our Group. Specifically, we are concerned with the prohibition of private monopolies and ensuring fair trade, as well as the prohibition of bribery and the prevention of transactions related to illicit activities. In addition to simply setting global compliance standards, we regularly organize specialized training by lawyers in key regions of the world, which can be accessed online from all over the world.



●One of the KPIs: Whistleblowing system

The whistleblowing system not only functions to keep the Group in good standing, but is also positioned as one important tool for fostering a healthy corporate culture by resolving potential risks at an early stage and maintaining high ethical standards. For this reason, the number of whistleblowing cases is set as a KPI. We believe that an increase in the number of whistleblowing cases measures the degree of openness in the Group and the degree to which the whistleblowing system has penetrated the Group. We have produced posters and booklets to raise awareness, and we plan to include this information in our Code of Conduct Handbook.

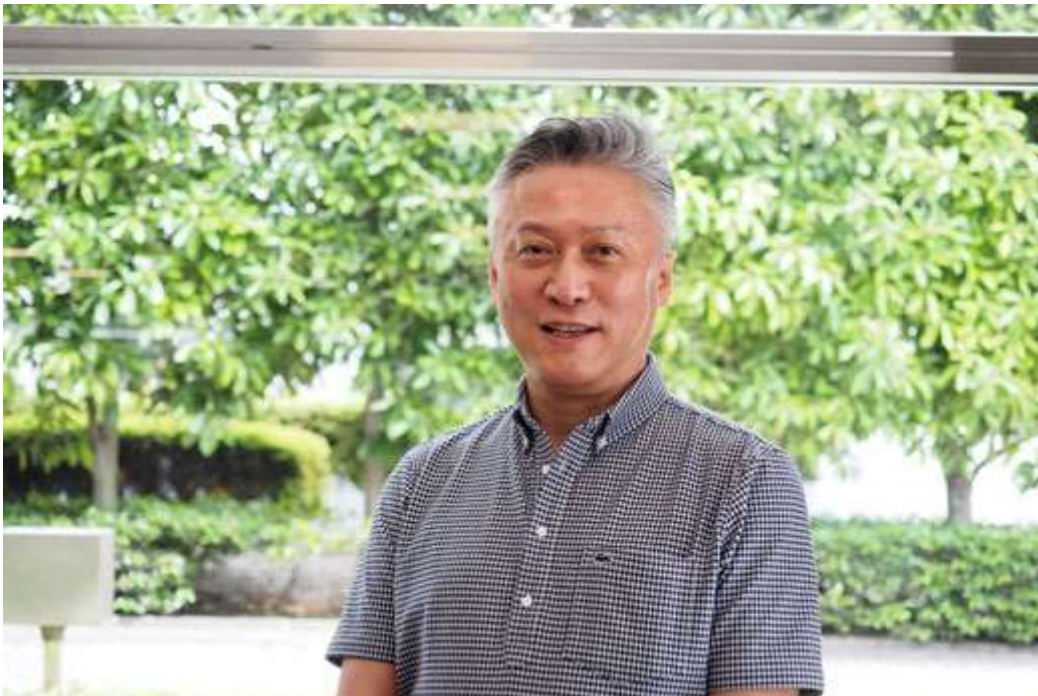
●Reason for not upholding “zero noncompliance cases” as a target

Of course, we would like to achieve zero, but first of all, we would like to aim for psychological safety, that people can talk to their supervisors and colleagues about their concerns, openly honestly and confidently. We believe that if each of us shows openness in our actions, such as consulting with each other when we are unsure and giving each other our honest attention, it will lead to a positive chain of events, and as a result, a decrease in the number of incidents.

Safety and compliance take precedence over everything else. We will create mechanisms and systems to prevent compliance breaches, raise awareness of compliance and promote an environment in which it is easy to seek guidance.

About Risk Management

Building a risk management system that will allow the newly integrated company to be a company that can compete on the world stage by making appropriate responses to changes in the business environment



**Tomotaka
Tsutsuzaki,**
Manager, Preparation
Office for Risk
Management
Department, Showa
Denko K.K.

Risk management means to manage risks posed to business management so as to avoid them and reduce their impact on the organization, including related loss. Recently, the environment surrounding companies has been constantly changing due to factors such as climate change, COVID-19 and the situation in Ukraine. Accordingly, the importance of risk management is increasing. Under these circumstances the Showa Denko Group is implementing measures for risk management and has set a

vision for the type of risk management to be pursued by the newly integrated company. In the following, Tomotaka Tsutsuzaki from the Preparation Office for Risk Management Department provides an outline.

1. Present job duties

We need to manage risks on the presumption that we cannot reduce risks posed to corporate activities to zero. Based on this recognition, it is important to work to detect and identify risks and prepare against their materialization while implementing preventive measures. Risks mean anything that causes a change to business management, and both negative and positive factors could pose risks to us. For example, if a certain product becomes very popular in the market, we might run out of stock, which could inconvenience customers and result in our losing business opportunities. The risks that we should address might also change due to changes in the external environment, such as climate change, social change and major global trends, including the moves made by national governments, the United Nations and others.

2. About the KPIs set for risk management based on the sustainability-related material issues (materiality)

■ The KPIs set for risk management based on the sustainability-related material issues (materiality)

Priority measures	Targets for 2025	Results in 2021
1) Development and operation of comprehensive risk management systems	1) Operation of comprehensive risk management systems for strategy risks, operational risks, and hazard risks	1) Trial introduction of the new risk management system (initial deployment in Japan operations)
2) Reinforcement of the second line of defense	2) Exercise of management functions through the risk assessment system	2) Commencement of integration of the management functions of both companies (with implementation of monitoring functions scheduled for 2022)

● Prioritization of the KPIs set for risk management

We aim to reinforce our system for managing increasingly diverse and complex risks. The Risk Management Committee examines the findings of risks assessments, including operational, hazard and strategy risks. However, the number of risks is large—more than 3,000—and we therefore classify them based on their frequency and the magnitude of impact to identify important risks and those to be

prioritized. We regard risks that are classified as “Very High” and “High” as “top risks,” for which we examine possible events and countermeasures with the related departments, share the results with them and also report the results to the Management Committee. We are thereby building a system for the management team to be informed of serious risks that could badly affect the Showa Denko Group’s business management for the continuous and appropriate monitoring and supervision of the related measures by top management. In 2022, we started to implement measures to expand our risk identification and assessment system on a global scale and enhance the functions of the risk supervising department. We have been also considering the multilingualization of the system. Through these efforts we will achieve effective risk management. I also think it is necessary for the management team to keep in mind the requirements to be met by a company that can compete on the world stage.

●Importance of raising awareness of risk management

We will provide level-specific education to help directors and officers, departmental and sectional managers, and general employees to deepen their understanding of the importance of risk management. We will also appoint a “risk owner,” “risk officer” or “risk manager” at each of the departments and job ranks to establish an autonomous risk control system and implement risk reduction measures. The risk owner, risk officer and risk manager will share with departmental and sectional staff their knowledge about risk management, including the risk-related mega trends and the fact that risk management is interrelated with corporate



value. We will thereby raise awareness of risk management across the board. Moreover, we will also provide employees working at manufacturing facilities with relevant education and training to help them sharpen their sensitivity to risks and gain more understanding about risks. It is essential to increase the number of employees who can talk to each other about risk management based on a shared understanding of risk management as a challenge to be met by the whole Group.

●There are a range of issues regarding strategy, operational and hazard risks, and it would be difficult for a single department to deal with all of them. How could these risks be managed?

All the departments are given access to the risk assessment system for the registration of data with the system. However, the department in charge of strategy risks tends to focus on strategy risks within the department while the sites and business divisions tend to focus on operational and hazard risks. In order to manage the identified risks as an organization, we need to establish a system for the relevant departments to collaborate for the comprehensive management of the risks. It is important for the department in charge of strategy risks, our risk management department, and the business divisions to cooperate with one another for the establishment of a company-wide risk management cycle. For example, it is difficult to assess the specific impact of a risk that might arise from making an investment in a business unless the size of the investment is clarified at the business planning stage.

It is therefore important for the business planning unit to identify the risk and then share the information with related divisions and departments. We need to establish this kind of comprehensive risk information sharing system. To this end, we will hold a meeting of related departments so that they can exchange opinions about the desirable strategy risk management cycle.

● Enhancement of the second defense line function for internal control

For risk management, the self-cleansing function of the departments engaged in daily business operations is very important as the first line of defense. I think it is ideal that the risks are eliminated by this first line before they become an issue. However, if the business departments fail to identify their operational risks, the administrative departments will serve as the second line of defense by monitoring how risks that are placed under their control are handled by the business departments and issuing warnings and advice to the departments as necessary. Furthermore, the Internal Audit Department will serve as the third and last line of defense. This, however, is still not sufficient for comprehensive risk monitoring. We at the risk management department will therefore monitor the risks in a comprehensive and exhaustive manner and check whether or not the administrative departments are appropriately monitoring the risks posed to the manufacturing sites and business units as the second line of defense. Then, if we detect a problem, we will share it through the Risk Management Committee, thereby improving and enhancing our risk management.

● Selection of important products and formulation of BCPs

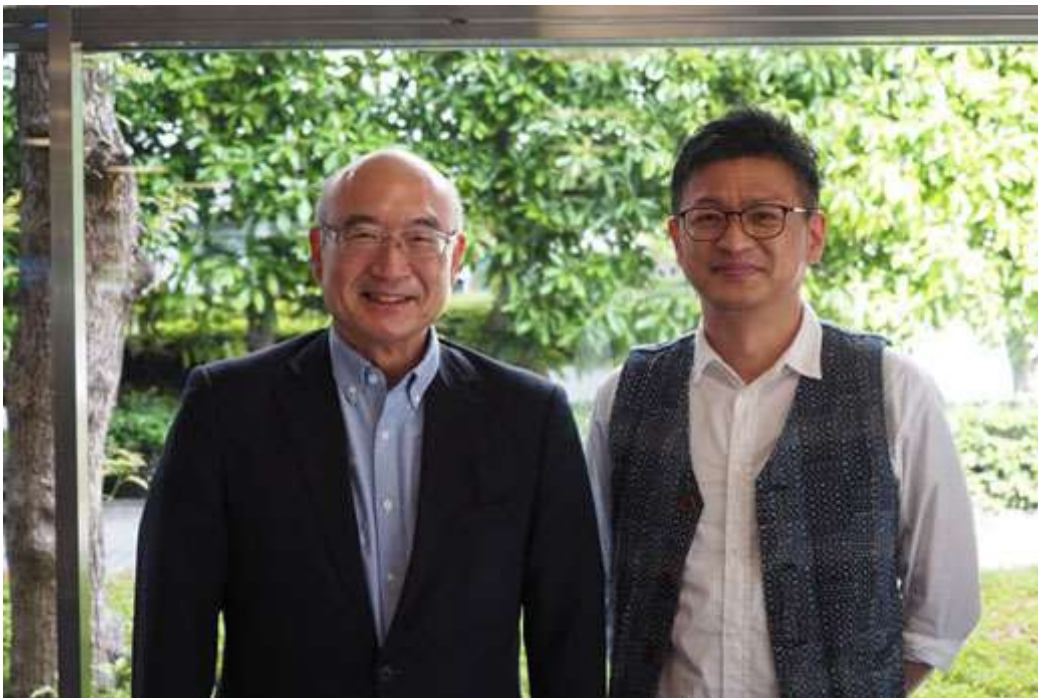
As a challenge to be met for business continuity plans (BCPs), we need to confirm the safety of employees and their families in the event of an emergency, such as a large earthquake. As a manufacturer, we also need to fulfill our supplier responsibilities to our customers. If our manufacturing facilities are suspended due to a disaster, we will supply the affected products from inventory, and in preparation against such a case, we need to decide on the measures and approach to be taken when the products are finally out of stock. In the past, the divisions were tasked with this kind of decision-making, but now we need to conduct discussions more widely on what our important products are and set the prioritization criteria for such products across the board. Moreover, we need to verify the effectiveness of the BCPs set by each division, site and Group company, provide them with regular simulation training for the updating of their plans, and share with them training details, identified challenges and best practices for the improvement of their respective BCPs. The newly integrated company will have a new risk management department with a larger dedicated staff. The department will implement measures from various viewpoints and execute the risk management cycle accordingly.

3. Comments about and commitment to risk management

There is no end to risk management. Targeting not only operational and hazard risks but also strategy risks, we will involve all departments, sites and on-site employees in our effort to improve the risk management level of the entire Group by steadily implementing the “risk inventory” activity and providing BCP-related training.

About Our Public Relations Activity (Participation in the ICCA)

Leading the activities of the International Council of Chemical Associations (ICCA) in the field of energy and climate change



(Left in the photo)
Masamichi Yagishita, General Affairs Department, Showa Denko K.K.

(Right in the photo)
Tohru Yamamoto, Corporate Planning Department, Showa Denko K.K.

For two years from June 2020, Masamichi Yagishita and Tohru Yamamoto of Showa Denko's ICCA Office (at that time) respectively served as chair and head of the secretariat of the ICCA's Energy & Climate Change Leadership Group (E&CC LG). The ICCA is composed of chemical associations from across the world and Showa Denko has been participating in it as the representative of the Japan Chemical Industry Association (JCIA). The ICCA has five leadership groups (LGs) tasked with examining social issues faced by the world's chemical industry, including the E&CC LG. In the following, the two talk

about the results and lessons learned from the two-year activities, desired participation of the Showa Denko Group in overseas initiatives and their future expectations.

1. About the ICCA Office

The ICCA has E&CC LG as one of its leadership groups. In May 2020, President Morikawa of Showa Denko (at that time), was appointed to be the chairman of the JCIA, the ICCA Office was established to enable the Showa Denko Group to demonstrate leadership in the E&CC LG. In addition to Yagishita and Yamamoto, who worked full-time on ICCA-related activities, Kamemura from the Production Technology Development also joined the ICCA Office while continuing to work at the Department. Yagishita served as chair of the E&CC LG and Yamamoto as the head of its secretariat for two years from June 2020, and Kamemura supported them as a person tasked with reducing green house gas (GHG) emissions from the Showa Denko Group. Employees had been seconded by the Group to external organizations such as the JCIA in the past, but this was the first time for the Group to establish an organization devoted to public relations activities under the direct control of the president.

2. About the ICCA

It is an international council composed of chemical associations from across the world. Showa Denko has been participating in this council through the JCIA. The ICCA was founded in 1989 and has been expanding its activities for the Responsible Care (RC) Global Charter and for the spread of RC activities beyond the management of chemical substances. It now includes organizations from China and India as well as from Europe, the United States and Japan. The Steering Committee manages the operation of the ICCA and there are five leadership groups (LGs) under the Committee. Showa Denko is a member of the E&CC LG, which has about 40 members, including nearly 10 core members. The E&CC LG has three task forces (TFs), including the Life Cycle Assessment (LCA) Task Force.

	Name of the LG	Field	Chaired by: (May 2022)
1	E&CC LG	Energy & Climate Change	Showa Denko (Japan)
2	Plastics LG	Plastics	SABIC (Saudi Arabia)
3	CP&H LG	Chemicals Policy & Health	BASF (Germany)
4	Responsible Care LG	Responsible Care	ExxonMobil (United States)
5	Communications LG	Communications	Cefic (Belgium)

3. About the activities of the E&CC LG

The E&CC LG is engaging in the field of energy and climate change, and we conducted activities to express our science-based opinions from a neutral standpoint and share relevant information. Climate change brings with it a range of complex political and technical issues, and we worked to share the science-based views of the global chemical industry in order to gain the public's understanding, deeming it to be an important challenge.

The Carbon LCA (cLCA) TF is holding discussions on LCA. The ICCA published an executive guide titled "How to Know If and When It's Time to Commission a Life Cycle Assessment." This publication, which was translated into Japanese, is recognized as an internationally prestigious guide in the field. The E&CC LG defined the term "cLCA" and widely introduced the meaning and methodology on behalf of the chemical industry.

The Innovations TF makes reports about the latest technology for energy and climate change. Three years ago, it published "Enabling the future" (ICCA, 2020), which summarizes the initiatives implemented by chemical companies for technological development. It classifies more than 1,000 examples and selects 17 solutions for reference by companies. The publication states that the chemical industry could be a potential impact to reduce the world's GHG emissions by 25% by 2050 through its technological contributions.


The Advocacy TF conducted activities to introduce the ICCA's policies through science-based activities or, more specifically, activities to effectively spread the use of its science-based reports. The chemical industry has been making tremendous contributions to the world while also having negative impacts. For global issues including global warming, the chemical industry wants the public to recognize the possible contributions that the industry can make for the world through technological innovation, and to this end the Advocacy TF has been conducting activities. LCA, as mentioned above, is also essential to deal with climate change and is deeply related to the advocacy activities.

The Plastics LG was urgently launched two years ago to deal with the EU's new regulations and proposals on the reduction of plastic production made by NGOs. Recently, in response to an increase in the number of proposals on the introduction of regulations that will have big impacts on the chemical industry, the LG has proactively been conducting lobbying activities.

4. Results achieved as the leader of the E&CC LG

There are roughly three achievements that we made.

First, we made an ICCA statement on the shared recognition of the chemical industry on climate change measures with the participation of members from China and India as well as from other countries and announced it in 2021. In this statement, the chemical industry declares that it will work to contribute to the fulfillment of the Paris Agreement and to the achievement of carbon neutrality by the middle of the 21st century. Companies from China and India, which used to participate in the LG's activities under associate membership, participated fully in the discussion to give the statement more weight. The company boasting the world's No. 1 sales in the chemical industry is Sinochem, and China and India are

ranked No. 1 and No. 2 in the world in terms of national population. We thought that the companies and countries thus had great influential power in the chemical industry and were therefore essential partners to promote co-creation. We now feel proud that we were able to exchange opinions and deepen mutual understanding with them in the process of making the statement and as a result adopt a new point of view to make the statement a good one. By following the necessary procedures, we have had this statement posted on [the ICCA's website](#)  as its climate policy statement.



Second, we implemented a project for carbon neutrality. We used to discuss carbon neutrality with a focus on how we could contribute to energy conservation in the downstream segment of the value chain (Scope 3 [downstream]) by providing heat insulating materials and LED lamps for houses as well as plastic materials for weight reduction. Moving forward, however, the chemical industry is expected to make more direct contributions in Scopes 1 and 2. During the two years, we were able to start discussing how to identify and reduce the amount of CO₂ emitted from the manufacturing processes employed by the chemical industry. We will pay attention to globally major chemical products and discuss how to reduce emissions from them, including emissions from their manufacturing processes and from materials used to make them, so that we can show how the chemical industry will address carbon neutrality going forward.

Third, we made an achievement in the advocacy activity. In the E&CC LG, the purpose of the advocacy activity long remained unclear. The energy and climate change field involves various political, technical and economic issues and has many stakeholders. It is therefore difficult for the ICCA to present its shared opinions in this area and make them widely known. During the two-year term we summarized a range of opinions from a neutral standpoint and published a science-based report to further clarify the position of the ICCA.

It took a tremendous effort to lead the above three initiatives, but it was also quite meaningful for us to cooperate with our industry peers for the future of the chemical industry.

5. Future activities

Through the ICCA's activities, we were able to see how internationally influential countries and companies think, act and make decisions, which would be impossible to learn in our conventional activities. Not only as the ICCA but as Showa Denko, we participated in a range of initiatives together with top chemical manufacturers from Western countries. We believe such participation helps us grasp various things about these manufacturers, including how they think. In honing our ability to make appropriate responses, we can take a shortcut by participating in international initiatives and working alongside other participants. The two years really were a great experience.

It is also very important to collaborate with outsiders. First of all, we need to think about what issues the Showa Denko Group can contribute to by making use of its strengths. In Japan, as its public relations activities, the Group promotes co-creation with various stakeholders through various activities, receiving subsidies for technological development from the government. Outside Japan, however, we have not yet participated in any co-creative frameworks, although it is necessary for us to obtain information required for globalization. Now governmental policies and regulations are updated in a cycle of two to three years, and we might one day find out that we are falling behind global companies. It is therefore becoming increasingly important to participate in international initiatives at the earliest possible stage and promote co-creation with other companies.

Environment

Environmental Management System

[Environmental Management System](#)

Measures against Climate Change

[Challenges to Realize Carbon Neutrality](#)

[Measures against Climate Change
\(Disclosure in Line with TCFD\)](#)

Reducing environmental load

[Environmental Considerations;
Atmosphere](#)

[Waste Management](#)

[Environmental Considerations; Water](#)

Efforts for Preservation of Biodiversit

[Efforts for Preservation of
Biodiversit](#)

Environmental Management System

Basic ideas and policies

The Showa Denko Group is committed not only to fulfilling its responsibilities as both a chemical company and an emitter by minimizing the discharge of hazardous substances, waste and pollutants, but also to contributing to environmental conservation based on the appropriate assessment of the impact of its business activities on the environment. To this end we are working to build a monitoring system and an effective environmental management system across our supply chain targeting a wide range of environmental risks, including those posed by waste, water pollution, air pollution, soil pollution, noise and vibration. Through this effort we are improving our environmental management system based on the concept of Responsible Care.

Promotion system

The Showa Denko Group conducts environmental conservation activities as part of its Responsible Care activity under the Responsible Care promotion system. The president of Showa Denko K.K. assumes ultimate responsibility for the Group's Responsible Care activity. Under the leadership of the president, each of the divisions and sites conduct environmental conservation activities, receiving support from the administrative departments of the head office. At weekly safety meetings, the Management Committee is briefed on environment-related activities of the Group and gives relevant instructions, which will be conveyed to the divisions and sites for implementation. Moreover, at each site, the head of the site and the environment & safety manager lead environmental conservation activities based on their Responsible Care action plans.

Implementation of environmental management systems

The Showa Denko Group is managing and reducing environmental risks posed to its sites in an appropriate manner by establishing an environmental management system at each site, for which the Group is promoting the acquisition of certification and fostering improvements. We have these management systems regularly assessed by external certification bodies to keep them up to date. Moreover, the systems are implemented at each site by following a PDCA cycle to further promote the related activities.

* The Showa Denko Group obtains certification for the environmental management system of each site.

Related link: [List of sites with certified environmental management systems](#)

* For internal audits on the Responsible Care activity including environmental initiatives, please refer to the following:

Related link: [Responsible Care activity](#)

Reduction of environmental risks

The Showa Denko Group is implementing the following measures to reduce environmental risks, aiming to achieve zero serious environmental accidents that badly affect human health and the environment^{*}, such as the outflow of chemical substances from company premises and environmental pollution by hazardous substances.

In 2021 we had no serious environmental accidents.

^{*}Serious environmental accidents: Events that result in damage to human health or the natural environment along with any of the following situations due to the discharge of certain substances beyond the regulatory or agreed standards

1. Ambulance transportation due to physical injury or illness
2. Damage to the lives, business activities and natural environments of third parties
3. Request for assistance made to outside (other than official emergency calls)
4. (Nationwide) media coverage

Education of employees on latest revision of environmental laws and regulations and internal auditing at each site

Confirmation of compliance with environmental laws and regulations at each site through Responsible Care auditing by the head office

Implementation of environmental risk assessment

Formulation of a manual on responses to incidents (about how to establish an internal response system including the response headquarters; information communication channels; and about internal and external reporting and information sharing) and organization of drills

Sharing of environmental accident information across the board

Promotion of “Active Safety” activities^{*} to prevent the reoccurrence of similar problems based on the analysis of past accidents and problems

Implementation of measures including surveys in line with the Soil Contamination Countermeasures Act and the ordinances of local governments following the change of land usage or the excavation and transportation of soil from the premises to prevent soil and groundwater contamination

^{*} Active Safety activities: Activities in which we analyze past incidents and disasters and summarize the lessons learned from them in the “Active Safety checklist,” and then make use of the list to identify related risks and as an educational material to prevent the reoccurrence of similar incidents

Measures against soil contamination

In October 2020, at our production base for the aluminum specialty components business located in Kitakata City, Fukushima Prefecture, substances including fluorine were detected in an amount exceeding the regulatory standards in the groundwater flowing beneath the premises. In response we have implemented remediation measures in line with the Soil Contamination Countermeasures Act.

Niigata Minamata disease

Regarding the Niigata Minamata disease, the outbreak of which was officially confirmed in 1965, Showa Denko acknowledges that it caused great inconvenience to people living around its site, whose wastewater caused the pollution of the Agano River. Showa Denko, in cooperation with the national and local governments, will continue to respond in good faith to the victims of the incident and work to solve the related problems in line with the laws and regulations that provide for compensation to be paid for the damage caused by the pollution.

Environmental education

We have been planning and implementing a range of environmental education programs for all Group companies in Japan. In 2021, we provided training on environmental laws and regulations and training for internal auditors in an online format. We provide such training with a focus on promoting communication through group discussion while checking participants' level of understanding about the content.

■ Environmental training held by the head office in 2021

Date	Name	Target	No. of participants
Apr., Jun., Aug. and Oct. 2021	Training of internal auditors for ISO 14001	Willing participants from Group sites	SDK: 52; SDMC: 52
Oct. 28, 2021	Study meeting on environmental laws and regulations	Willing participants from Group sites	SDK: 114; SDMC: 119

* SDK: Showa Denko K.K.; SDMC: Showa Denko Materials Co., Ltd.

TOPICS **Showa Denko-Showa Denko Materials joint study meeting on environmental laws and regulations**

On October 28, 2021, Showa Denko and Showa Denko Materials jointly held an online study meeting on environmental laws and regulations. A total of 233 employees participated to deepen their understanding about the important points of the Air Pollution Control Act, Water Pollution Prevention Act, Noise Regulation Act and Vibration Regulation Act of Japan and the relevant notification procedures to be followed at their sites.

Communication about environmental management

We inform people living around our sites of the details of our environmental management through on-site tours, opinion exchange meetings and the sites' CSR reports and regularly conduct dialogue meetings with them. We also invite them to share their opinions and comments via the Showa Denko Group's hotline.

Challenges to Realize Carbon Neutrality

Challenges to Realize Carbon Neutrality

Measures against Climate Change(Disclosure in Line with TCFD)

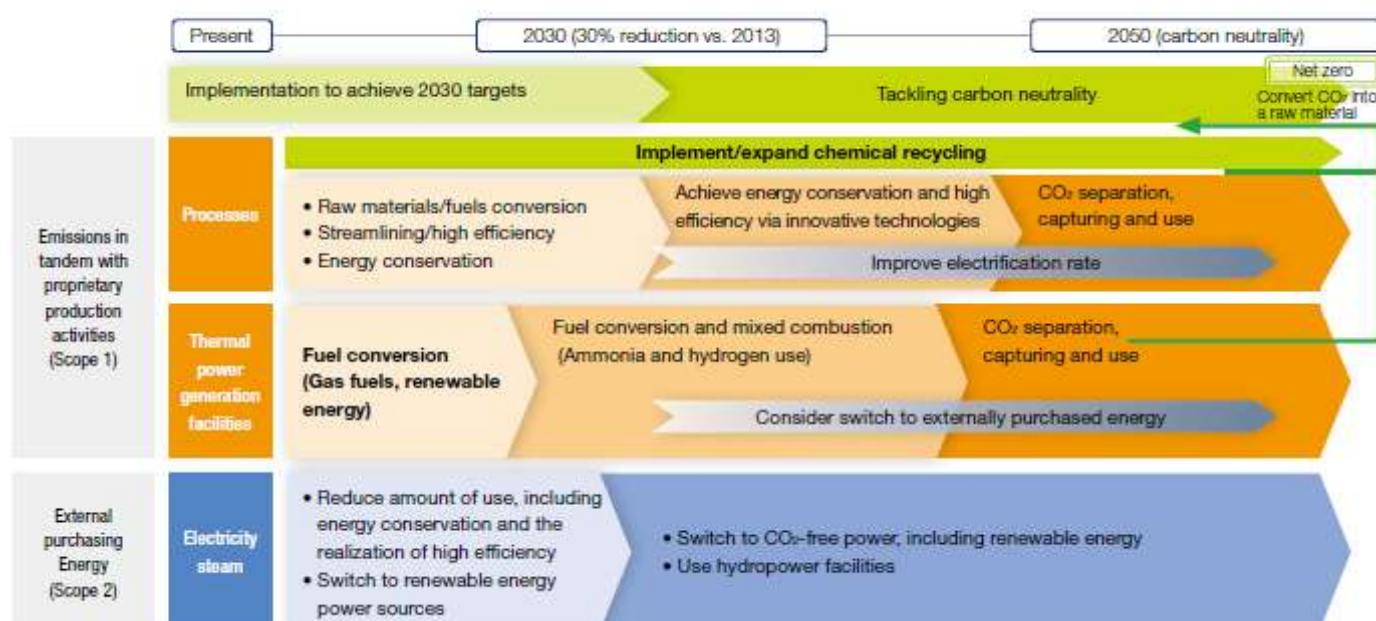
Challenges to Realize Carbon Neutrality

Basic ideas and policies

Climate change phenomena are occurring frequently and on a global scale. According to the science, greenhouse gases are considered to be a major factor for such phenomena. Under the Paris Agreement, a leading international initiative to tackle this issue, a goal was set to keep the rise in mean global temperature to less than two degrees Celsius above pre-industrial levels (“two degree target”), and efforts to address this challenge are expected to be accelerated over the coming years.

In order to support such efforts, the Showa Denko Group will take up new challenges aimed at carbon neutrality, setting goals for 2050. This is one of our key approaches to becoming a “company that contributes to a sustainable global society,” the ideal state defined in our Long-term Vision.

Roadmap to carbon neutrality in 2050



Up to 2030, promote initiatives for rigorous streamlining, increased efficiency, energy conservation, conversion to gas fuels (high-efficiency co-generation system)

Promote technology development for new GHG capture and utilization processes and sustainable plastic chemical recycling

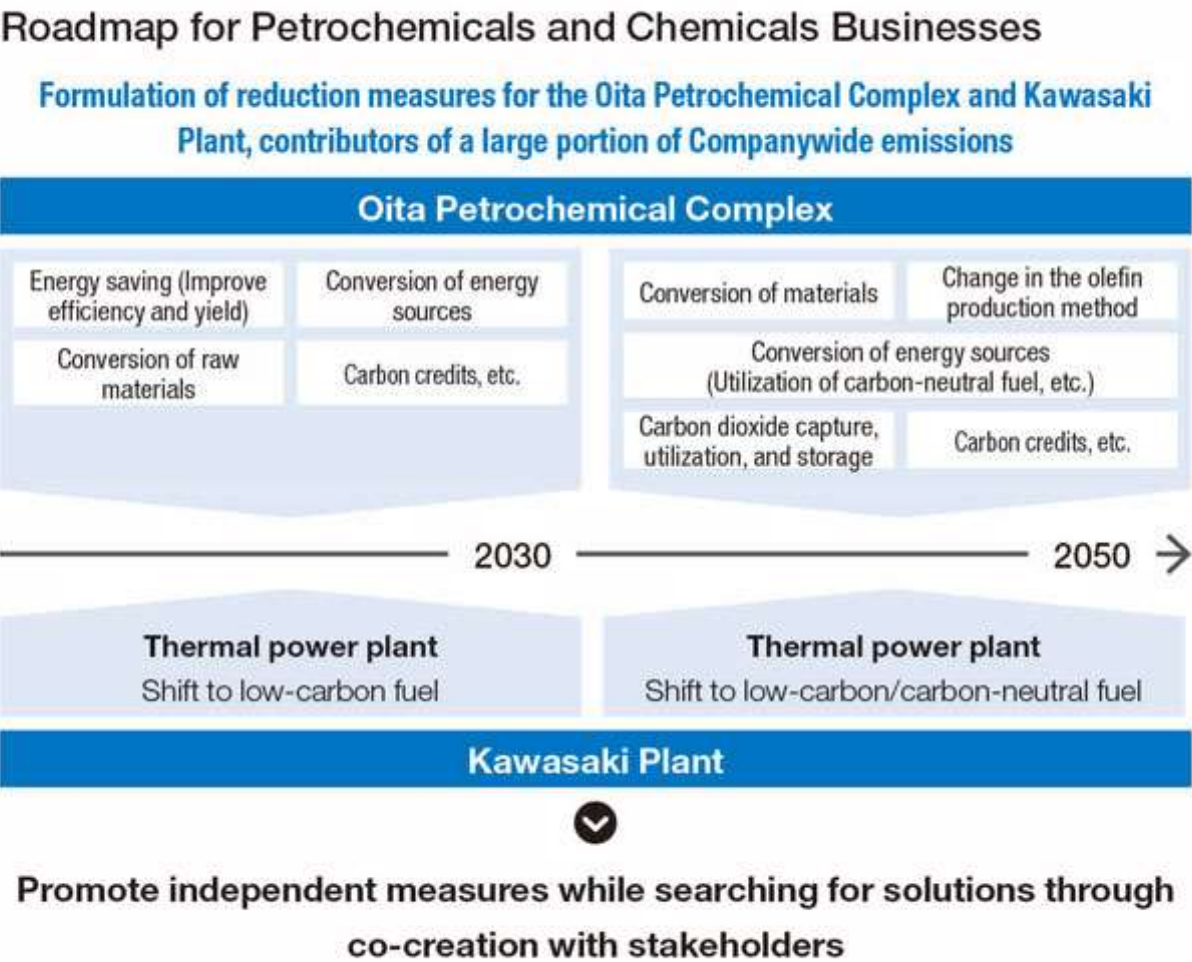
From 2030 to 2050, promote in earnest initiatives for fuel conversion/mixed-combustion using ammonia and hydrogen, and electrification of production processes

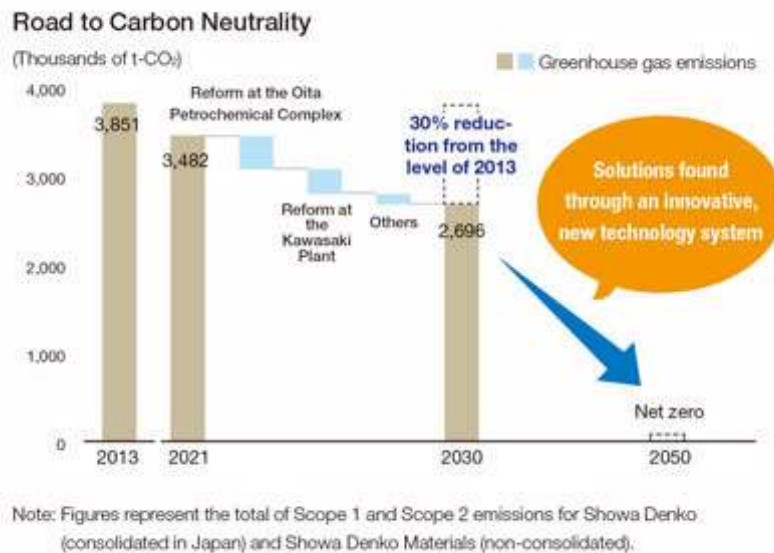
Promote utilization of private hydroelectric power and shift to renewable energy power for use in production

Aiming to achieve carbon neutrality, promote the development of innovative GHG capture/utilization technologies, utilization of recycled GHG as chemical materials, and implementation of sustainable plastic chemical recycling technologies

Path to Carbon Neutrality Centered on Petrochemicals and Other Chemicals

The Chemicals segment provides products that are indispensable to society. At the same time, however, it emits more greenhouse gases during its production processes than other segments. For this reason, petrochemical and other chemical operations will be a central focus of our efforts to achieve carbon neutrality. Up until 2030, our pursuit of carbon neutrality will involve building upon existing technologies centered on those for conserving energy and switching to new energy sources. R&D efforts looking toward 2050, meanwhile, will include the low-concentration CO2 separation system employing an innovative separation agent that was adopted by NEDO under its Green Innovation Fund.

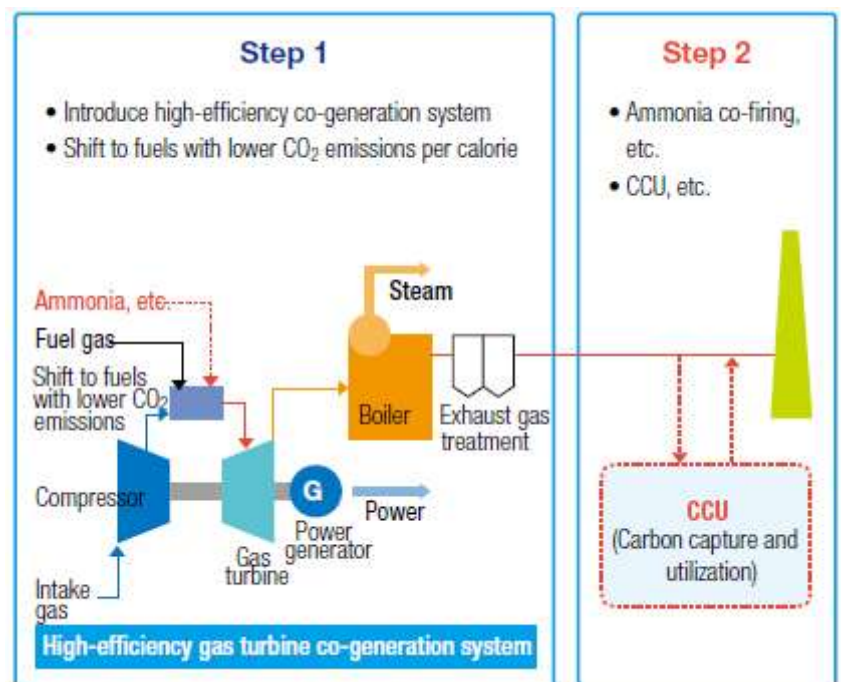




Initiatives for carbon neutrality

High-efficiency co-generation system

The Showa Denko Group has installed in-house thermal power generation systems with the boiler and the steam turbine designed so as to ensure the efficient supply of electricity and heat (steam) energy sourced from fossil fuels. This is to allow the energy to be used effectively for each of the different production processes, such as heating and distillation, at chemical plants. Also, this off-grid power supply function represents an essential BCP item at chemical plants in preparation for the contingency of a power outage.



We will upgrade the above in-house thermal power generation systems so as to serve our carbon neutrality initiatives.

The plan consists of two steps. In the first step, we will introduce a state-of-the-art high-efficiency gas turbine co-generation system, among others, to improve overall energy efficiency, and then switch to fuels with lower CO₂ emissions per calorie in an effort to promote lower-emission operations. These measures involve conversion from solid to liquid fuels, which will effect a significant reduction of CO₂ emissions, thereby contributing to environmental conservation.

The second step is the planned adoption of co-firing systems based on carbon-free ammonia and other fuels as well as of carbon capture utilization (CCU) and other carbon recycling processes, aiming for carbon neutrality.

Promotion/expansion of chemical recycling

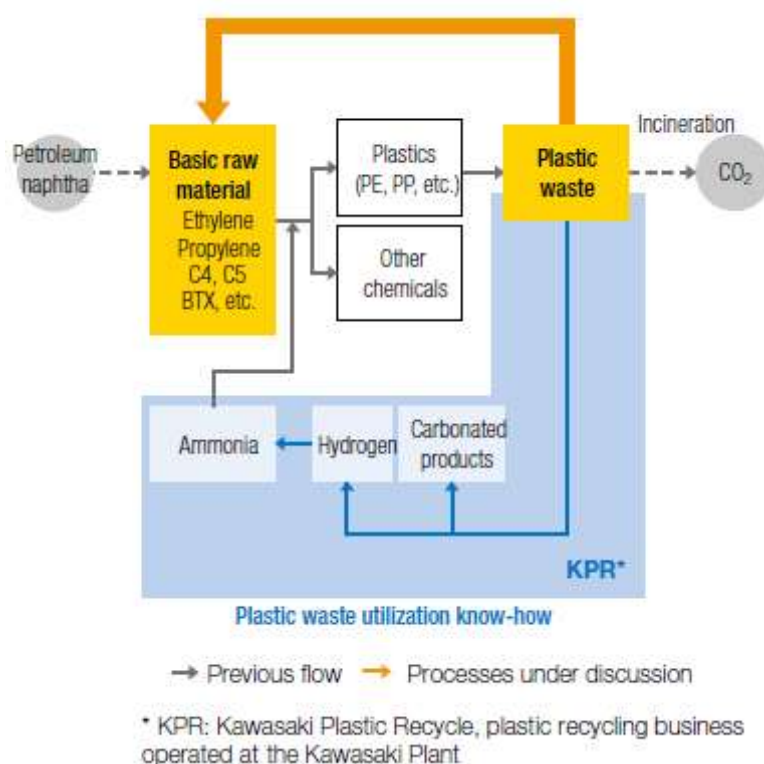
In order to facilitate carbon neutrality in the chemicals industry, it is imperative, along with increasing energy use efficiency, to reduce the use of fossil resources, a leading raw material for many chemical products, as exemplified by plastics. In Japan, a reported 70% of used plastics are incinerated, resulting in CO₂ emissions, including for the purpose of heat recovery.

Among a number of proposed solutions to this issue, chemical recycling—referring to the reuse of plastic waste as a raw material for chemical products—is drawing broad attention.

The Showa Denko Group is already engaged in plastic chemical recycling for ammonia and hydrogen manufacturing. Based on the practical knowledge on plastic waste utilization that has been cultivated through past operations, we are ramping up R&D activities to expand the application of chemical recycling capabilities. Specific plans are discussed for adopting recycled plastics to manufacture ethylene, propylene and other substances used as raw materials for plastics and many other types of organic chemical products in place of petroleum naphtha, a primary conventional option.

We are striving to raise the chemical recycling rate to the extent possible, overcoming limitations related to dirt and impurities, with the aim of achieving fossil-free chemicals production, which represents a significant stride toward a carbon neutral society. We will accelerate our efforts to introduce the results

of the above activities to the market as early as possible to broaden the range of applicable products that support a recycling-oriented, carbon neutral society, thus fulfilling our social responsibility as a chemicals manufacturer.



Measures against Climate Change

[Challenges to Realize Carbon Neutrality](#)

Measures against Climate Change(Disclosure in Line with TCFD)

Measures against Climate Change(Disclosure in Line with TCFD)

Basic ideas and policies

Although it does use fossil raw materials and fuels in its product manufacturing processes and emits a considerable amount of greenhouse gases (GHGs), the Showa Denko Group has many products contributing to

energy conservation and the carbon cycle. We regard measures against climate change as a management priority in terms of both risks and opportunities.

In May 2019, we took part in the Task Force on Climate-related Financial Disclosures (TCFD) Consortium to evaluate the risks and opportunities provided by climate change to the Group, enhance our resilience through climate change scenario analysis and promote sound dialogue with our stakeholders.



Related link: [Challenges to Realize Carbon Neutrality](#)

- ▼ Governance and risk management
- ▼ Strategy and scenario analysis
- ▼ Indicators and targets

Governance and risk management

At the Showa Denko Group, the Group CEO supervises measures for sustainability, including those for climate change, and the Group CSO is responsible for the promotion of such measures. The Group's strategies for contribution to society at large, including measures against climate change, are discussed under the company-wide carbon neutral project with a focus on opportunities as well as risks. The strategies are also regularly deliberated by the Sustainability Promotion Council, which is composed of CXOs including the CEO. Information about risks that could have an impact on the Group's business management, such as climate change-related risks, is registered with the central risk management system through the company-wide risk inventory (risk assessment) activity, and high-frequency and high-impact risks are deliberated by the committee in charge (Risk Management Committee). Important issues discussed by the Council and the Committee are deliberated by the Management Committee, with final decisions reported to the Board of Directors.

Related link: [Risk Management](#)

Strategies and risk analysis

For impacts (risks and opportunities) of climate change on the Showa Denko Group's businesses, we assumed the following risks for 2050 based on the framework set by the TCFD and in light of the integration with Showa Denko Materials: (1) risks related to a shift to a low-carbon economy under the 1.5- and 2-degree scenarios, and (2) risks related to the physical impact of climate change caused by the failure to achieve the world's CO₂ emission reduction targets under the 4-degree scenario.

Possible shift-related risks that may have company-wide impacts include an increase in operating costs due to rise in carbon pricing and other energy taxes. GHG emissions after 2023, when Showa Denko and Showa Denko Materials integrate, would be about 4.5 million tons/year. If GHG emissions in 2030 are constant and carbon pricing is 10,000 yen/t-CO₂ based on the IEA's^{*1}

2-degree scenario (SDS)^{*2}, the amount that the entire Showa Denko Group should pay will increase by 45 billion yen/year. If the Group achieves a 30% reduction in emissions relative to the 2013 level by 2030, the Group should pay about 35 billion yen/year, meaning the cost increase due to carbon pricing would be restrained. The analysis results will be used for the continuous management of risks under the risk management system.

The Showa Denko Group assumes that climate change will have a tremendous impact on its mobility, semiconductor and electronic materials, and carbon businesses and has been conducting scenario analyses for these businesses. We have already completed the analysis work for the mobility and semiconductor and electronic materials businesses.

In the mobility domain, under the 1.5- and 2-degree scenarios, our operating cost will increase due to the introduction of ICP^{*3}. However, business opportunities will also expand, driven by the need for energy conservation and the spread of electric vehicles (EVs) and fuel cell vehicles, which will boost demand for the related components. Therefore, we have concluded that we have sufficient resilience against climate change-related risks in the mobility domain. We will incorporate the examination results

into our strategy for the mobility business, which we position as a Core Growth business in our long-term vision.

For semiconductor and electronic materials, we conducted examinations about the impact of climate change with a focus on data centers (DCs). Under both 4-degree and 2-degree scenarios, due to the advance of digitization in society, the DC market will expand, which will in turn boost demand for semiconductors and hard disks (HDs). On the other hand, with the progress of conversion to low-carbon energy sources, a substantial increase in the supply of electricity cannot be expected. Accordingly, the government will be under increasing pressure to offer proactive support for energy conservation, while our customers will likewise need to conserve more energy. Also, DCs will be required to make their CPUs, GPUs, memory devices, HDs and power supply equipment less energy-hungry. Semiconductors can be made more energy-efficient by further miniaturization, and we can contribute to this through our CMP slurries and high-purity etching gas. However, it is pointed out that there are limits to the miniaturization of CPUs. In response, we launched a consortium named “JOINT2” to speed up the development of materials that will help increase the packaging density of semiconductor devices in the back-end process and shorten the wiring distance for energy conservation. Furthermore, we can increase business opportunities for our materials by collaborating with related companies in the field of optoelectronics, which is expected to serve as a next-generation energy-saving technology, increasing the capacity of HD media, and by promoting the use of SiC devices for power supplies in line with the popularization of xEVs.

*1 IEA: International Energy Agency
*2 2-degree scenario: Sustainable development scenario
*3 ICP: Internal carbon pricing

■ Climate change-related risks and opportunities and major responses to them

We carried out the scenario analyses of our semiconductor and electronic materials business to update the risks and opportunities posed to us in this business segment. As a result, we have confirmed the following: we need to implement more measures to make our semiconductor and electronic materials low-carbon materials, and they represent a Core Growth business for us and will bring us more opportunities rather than risks.

Impact of climate change on the Showa Denko Group Risk : ● Opportunity : ○		Domain	Response
	Increase in the tax (cost) due to the introduction of carbon pricing ●		· Review of the GHG emissions reduction targets for 2030 and formulation of a roadmap · Implementation of carbon neutral measures in the petrochemicals and chemicals businesses · Participation in the GX League
	Increase in the cost of substitution with and procurement of renewable energy due to increased need to reduce GHG emissions ●		· Effective use of hydroelectric power generation facilities
	Increased demand for circular economy to reduce GHG emissions ○ ●		· Enhancement of measures for plastic chemical recycling and iron recycling (by

Risks and opportunities related to the shift to a low-carbon economy (1.5- and 2-degree scenarios)			the use of graphite electrodes)
	Increased demand for manufacturing processes that contribute to carbon neutrality	●	<ul style="list-style-type: none"> · Review of the manufacturing processes and introduction of innovative technologies
	Difficulty in financing associated with changes in investors' behavior	●	All business domains Proactive information disclosure and communication to meet the information needs of investors and the market
	Increase/decrease in sales due to changes in consumer behavior and awareness	○ ●	<ul style="list-style-type: none"> · Sales promotion and development of new products that meet the needs of a low-carbon economy, and enhancement of product competitiveness · Promotion of long-term R&D at the "stage for co-creation" (new research laboratory)
	Increase in requests for low-carbon measures and the disclosure of related information from customers	●	<ul style="list-style-type: none"> · Establishment of an LCA (CFP) system, visualization of carbon emissions, and formulation of emission reduction plans
	Support from the government for low-carbon measures implemented by companies	○ ●	<ul style="list-style-type: none"> · Plan to develop 8-inch SiC wafers for use in next-generation green power semiconductors (subsidized by the NEDO Green Innovation Fund) · Enhancement of the global supply chain for semiconductor materials (subsidized by the Ministry of Economy, Trade and Industry under the program to enhance supply chain resilience in the Indo-Pacific region)
	Need to make responses to the technological innovation of semiconductor devices and to low-power semiconductors	○ ●	Semiconductor and electronic materials Establishment of a consortium for the development of next-generation semiconductor packaging technology (JOINT2) (subsidized for the development of advanced semiconductor manufacturing technology under NEDO's project to enhance the foundation for post-5G information communication systems) <ul style="list-style-type: none"> · Assessment of design for environment (DfE) and development of low-carbon products
	Demand for energy-saving products and next-generation power semiconductors due to an increase in the data processing volume in the progress of digitization	○ ●	<ul style="list-style-type: none"> · R&D on HD media to help data centers reduce their energy consumption · More responses to expanded demand for SiC power semiconductors
	Increased demand for the development of battery-related materials and composites	○ ●	<ul style="list-style-type: none"> · Maximization of synergies of the integration of Showa Denko and Showa Denko Materials (to provide materials-based solutions for heat, sound and electromagnetic wave control and

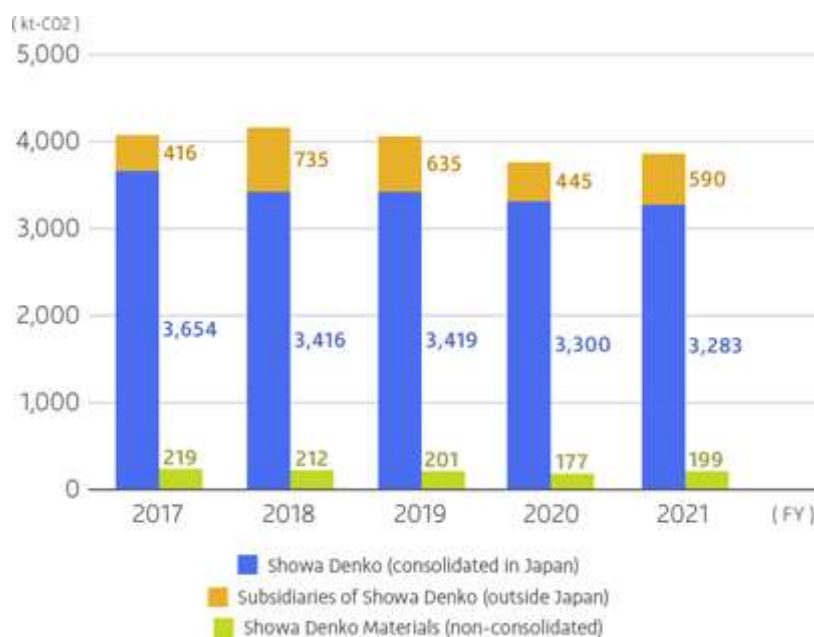
		Mobility	modules-based solutions for system design)
	Expanded demand for materials and components that contribute to more fuel-efficient and energy-saving vehicles and to the spread of Evs ○		<ul style="list-style-type: none"> Development of materials that contribute to the downsizing and weight reduction of components More responses to expanded demand for SiC power semiconductors
Physical risks and opportunities (4-degree scenario)	Suspended operation of manufacturing sites due to flooding, and decrease in profit caused by an increase in the equipment repair cost ●	All business domains	<ul style="list-style-type: none"> Analysis of flood risks at each site Regular risk identification and reduction activities, and enhancement of business continuity planning (BCP)

Indicators and targets

In preparation for the upcoming integration, we reviewed our greenhouse gas emission reduction targets for 2030 in 2021 and set the target of a 30% reduction relative to the 2013 level. We will review the medium- to long-term plans made for each of our sites, aiming at the creation of a low-carbon economy, and set the medium-term targets for our overseas Group companies. To achieve our greenhouse gas emission reduction targets for 2030, we will further reduce our greenhouse gas emissions and promote energy conservation. Carbon neutrality will also be pursued leading up to 2050, to accomplish the goal of becoming a company that contributes to a sustainable global society as put forth by our long-term vision.

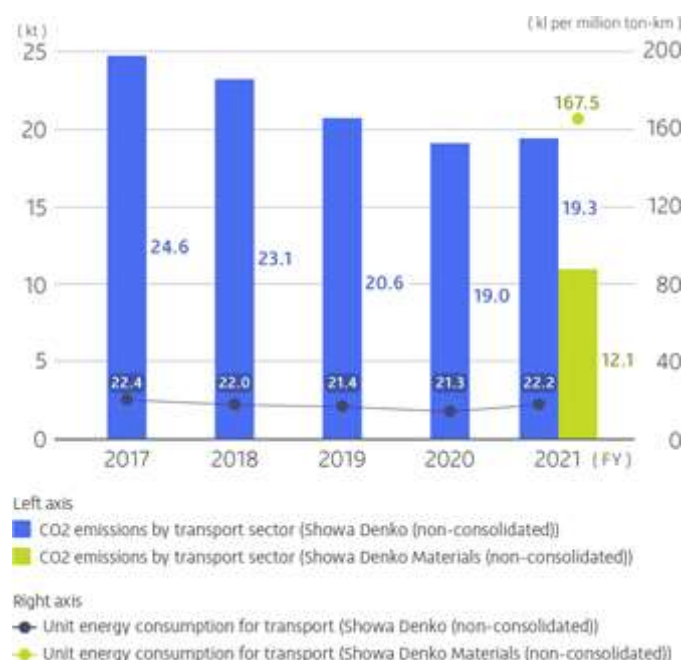
■ GHG emissions

- * Emission amounts were calculated in line with the GHG Protocol.
- * Sites which emitted 3 kt or more



For 2021, Showa Denko (consolidated in Japan; including Showa Denko Materials) reduced their GHG emissions by 9.6% relative to the 2013 level.

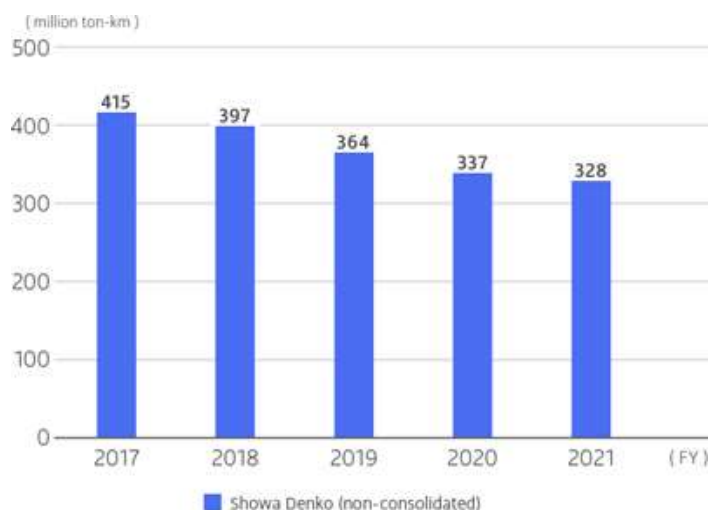
■ Transportation sector's CO2 emissions and energy consumption rate



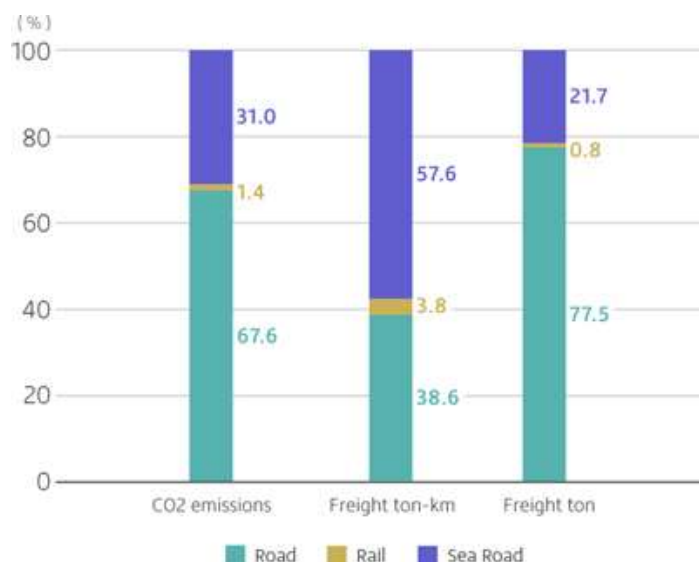
■ Scope3 GHG emissions Showa Denko (consolidated)

Scope3		(kt/Year)
Category		of emission
Category		The amount of emission
1	Purchased goods and services	4,700
2	Capital goods	220
3	Fuel- and energy-related activities (excluding Showa Denko Materials)	600
4	Upstream transportation and distribution	50
5	Waste generated in operations	30
6	Business travel	1
7	Employee commuting	1

■ Freight ton-km



■ Ratios for use of various modes of transport



In order to reduce the environmental impact associated with logistics, we are promoting a modal shift from truck to rail and ship transportation as well as making efficient use of large trucks and increasing their loading efficiency to reduce our CO2 emissions.

In 2021, our transportation amount decreased, but the amount of CO2 emissions from transportation increased, leading to an increase in our energy consumption per unit of transportation. This is mainly due to a decrease in the amount of goods transported by ship, which is an energy-efficient transportation mode, and to a slight increase in the ratio of goods transported by truck (on a ton-kilometer basis).

Environmental Considerations; Atmosphere

Basic ideas and policies

The Showa Denko Group is working to reduce the release of chemical substances to the environment, including air pollutants (NO_x, SO_x and dust and soot), volatile organic compounds (VOCs), substances included in the target of voluntary surveys by the Japan Chemical Industry Association (JCIA), and those regulated by the Japanese Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof ("PRTR law"). We will contribute to the creation of a sustainable society by setting our own management criteria for exhaust gas, promoting fuel conversion, and improving our manufacturing processes to minimize the release of hazardous substances and pollutants on a continual basis.

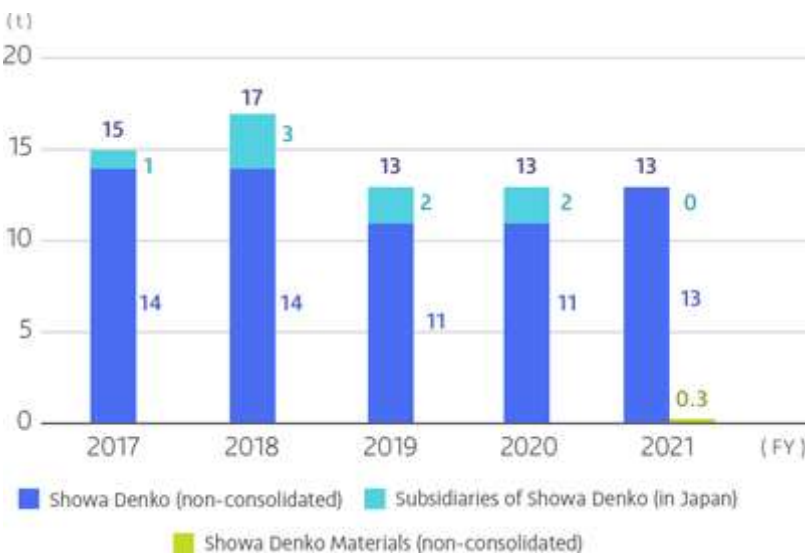
- ▼ Reducing emissions of hazardous air pollutants
- ▼ Reducing our environmental impact on the air
- ▼ PRTR law-regulated substances and substances included in the JCIA's target of voluntary surveys

Reducing emissions of hazardous air pollutants

Of the 12 substances designated by the Japan Chemical Industry Association (JCIA) as hazardous air pollutants, the Showa Denko Group handles nine. We continued our efforts toward reducing the emissions of these substances by promoting a shift to alternative substances and collection and recycling of the substances. In fact, we achieved a substantial reduction relative to 2010 (baseline year).

For the scope of data collection, please [click here](#).

- Total amounts released of harmful atmospheric pollutants(VOC)
Target: Below the amount released in the baseline year of 2010 (33 tons)



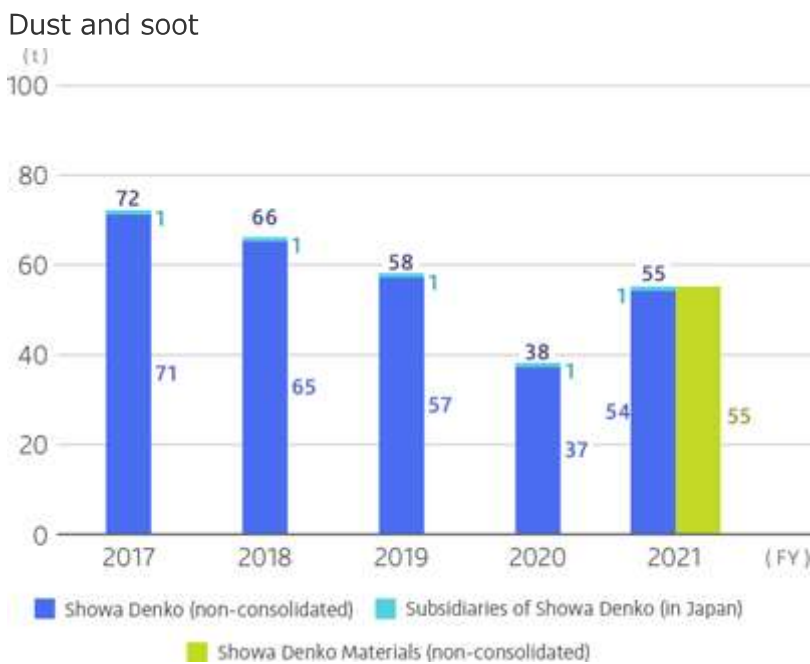
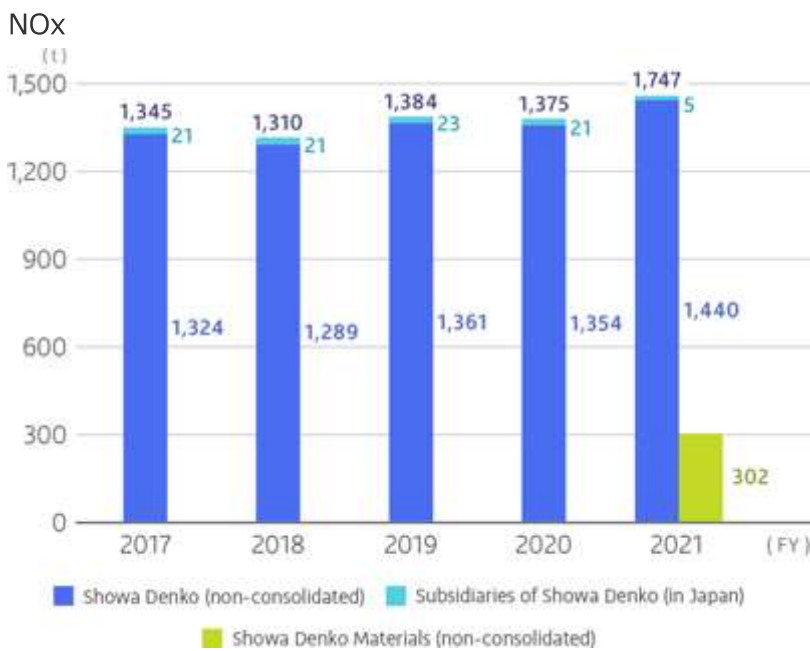
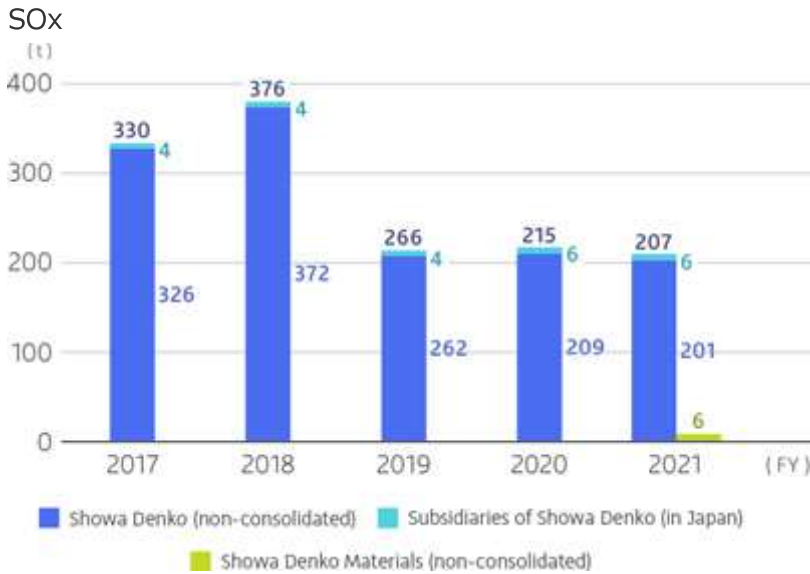
Reducing our environmental impact on the air

To reduce emissions of SOx, NOx, dust and soot, and other substances having adverse effects on the air, the Group continued advancing a variety of measures including fuel switching, improvement of combustion methods, proper operational management of desulfurization and denitrification devices, and reduced fuel consumption through waste heat recovery.



Exhaust gas treatment facility
(Isesaki Plant Showa Denko K.K.)

Change in discharged amounts of substances with atmospheric impact



For the scope of data collection, please [click here](#).

PRTR law-regulated substances and substances included in the JCIA's target of voluntary surveys

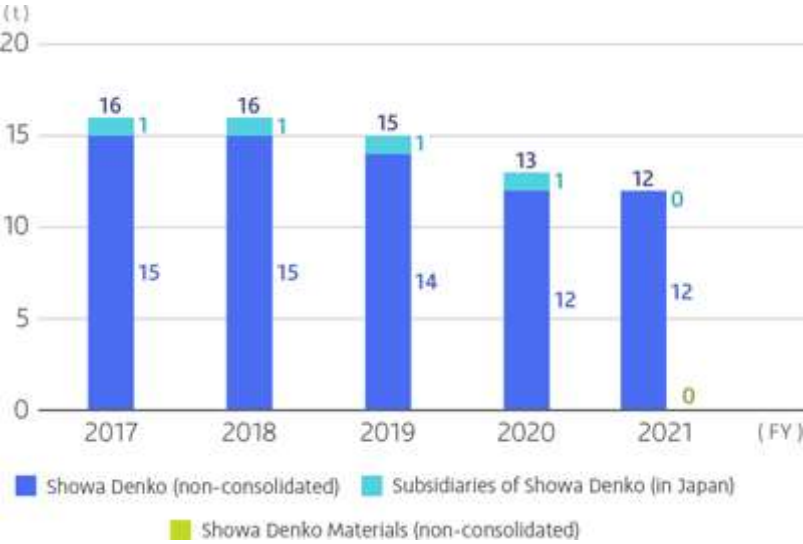
In order to reduce the release of these substances to the environment, we will improve the related processes and facilities and install exhaust gas incineration equipment. For the PRTR law-regulated substances and those that are discharged in large amounts on an annual basis in particular, we are making reduction plans for each of our sites and implementing intensive measures for the reduction. In fiscal 2020, we substantially reduced the release amount due to the improvement of exhaust gas treatment equipment at affiliated companies in Japan. We will also work to do better by engaging in risk communication with those living in areas around our sites and local governments to deepen mutual understanding.

■ Discharge of PRTR law-regulated substances and substances included in the target of the JCIA's voluntary surveys

Into air



Into water



We discharged no such substances to soil.

[For the scope of data collection, please click here.](#)

Waste Management

Basic ideas and policies

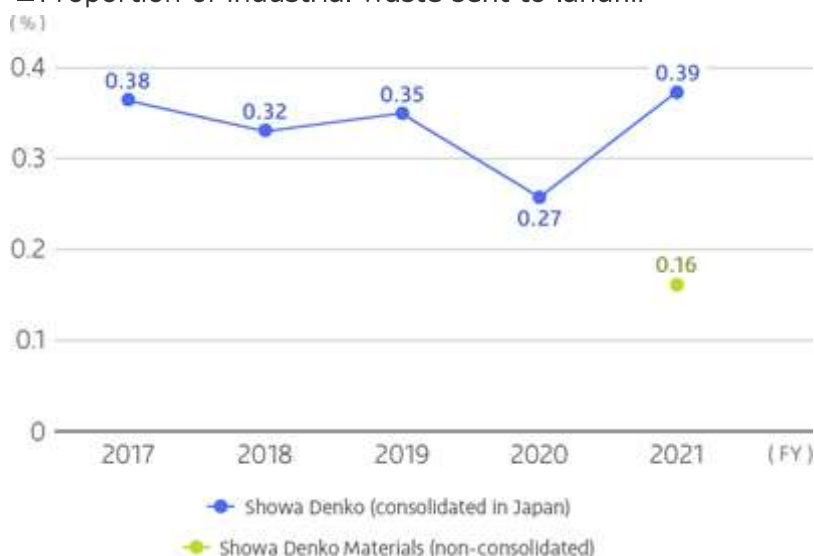
The Showa Denko Group is striving to minimize the discharge of waste on a continual basis. We are also making more effective use of waste plastic and other types of waste to contribute to the creation of a sustainable society.

For zero emissions

The Showa Denko Group defines “zero emissions” as follows: the proportion of waste sent to landfill is 0.5% or less of total waste generated. Toward this target, we are reducing the generation of waste and fostering the effective use and recycling of materials. We also inspect our contractors for intermediate treatment and final disposal of waste to confirm that they treat and dispose of our waste properly. In 2020, to enhance measures against the inappropriate disposal of waste, the government mandated companies that generate specially controlled industrial waste in the annual amount of 50 tons or more to use electronic manifests for the reporting of their waste. The Group’s relevant sites had already been making reports by using electronic manifests.

Results

■ Proportion of industrial waste sent to landfill



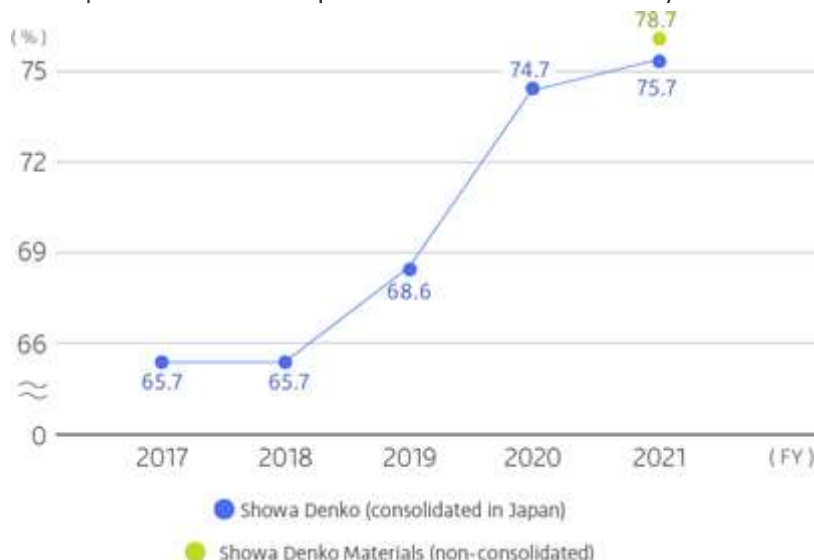
[For the scope of data collection, please click here.](#)

Effective use of plastic waste

In order to contribute to the solution of the issue of ocean plastic waste, which is emerging as a new global issue, and to the creation of a low-carbon society, we will make more effective use of waste plastic (other than simple incineration and landfill) by promoting the sorting of the waste and fostering its material/chemical/thermal recycling.

Results

■ Proportion of waste plastic that was effectively used



[For the scope of data collection, please click here.](#)

Management and appropriate disposal of hazardous waste (polychlorinated biphenyls [PCB])

As for PCB waste, we regularly check the status of stored PCB waste for appropriate management by using our PCB control checklist. We are planning to complete the disposal of PCB by March 2027, for which we are entrusting the treatment to outside companies. We are also updating the equipment in which PCB is used with PCB-free alternatives.

Environmental Considerations; Water

Basic ideas and policies

The importance of water resources is recognized globally, and it is regarded as a social requirement to use water resources in an appropriate and efficient manner, thereby reducing the consumption of water. It is also necessary to ensure that water circulates through its natural cycle with its quality and functions maintained at a level that is suitable for human activities and environmental conservation.

The Showa Denko Group regards the shortage of water as a global issue and is working to make effective use of water and reduce its consumption. We also treat the water used in our activities to reduce its environmental impact before releasing it back into the environment.

Efficient use of water to reduce its consumption

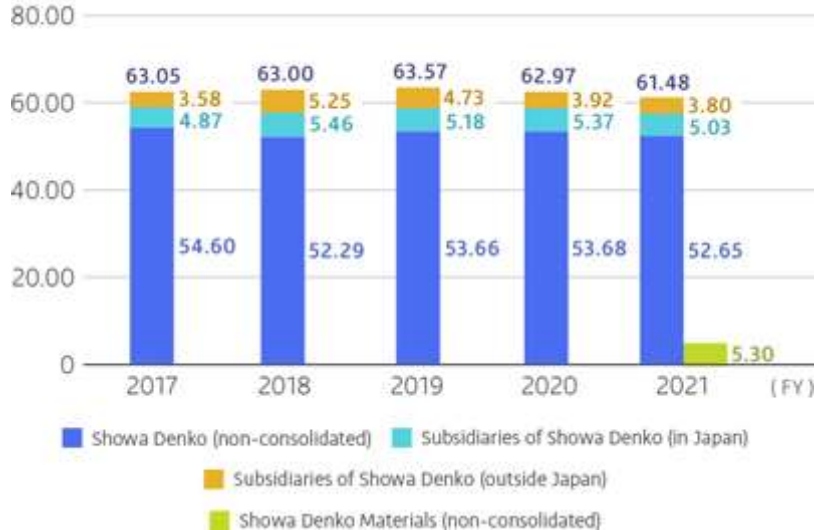
The Showa Denko Group has made targets for water resources as part of its Responsible Care Action Plan. We are fostering the effective use of water and reduction of its use at each of our sites in consideration of their individual business features. We are also working to maintain and increase the quality of water discharged from the sites.

In particular, at our sites located in areas prone to water shortages (water stress), we proactively engage in dialogue with local stakeholders to make efficient use of water for water conservation. Communities neighboring the Higashinagahara Plant are exposed to high water stress, making it difficult to secure water sources for firefighting. In response, we have had dialogues with officials of the prefectural government to obtain the prefecture's approval for those communities to use water from the plant's Toishigawa Kyu-suiso water tank for firefighting purposes.

Also, for the Asahi Dam owned by the plant, we concluded an agreement to prevent Agano River flooding with the Hokuriku Regional Development Bureau of the Ministry of Land, Infrastructure, Transport and Tourism to prepare against the risk of flooding posed by typhoons and linear rainbands, which Japan has frequently experienced in recent years. We are thereby helping the national government enhance its anti-flooding measures. In the future, we will set our own water use targets on a medium- to long-term basis based on a detailed examination of water-related risks in the geographical areas where we are conducting operations and will announce the actual results achieved against the targets.

■ The amount of water used

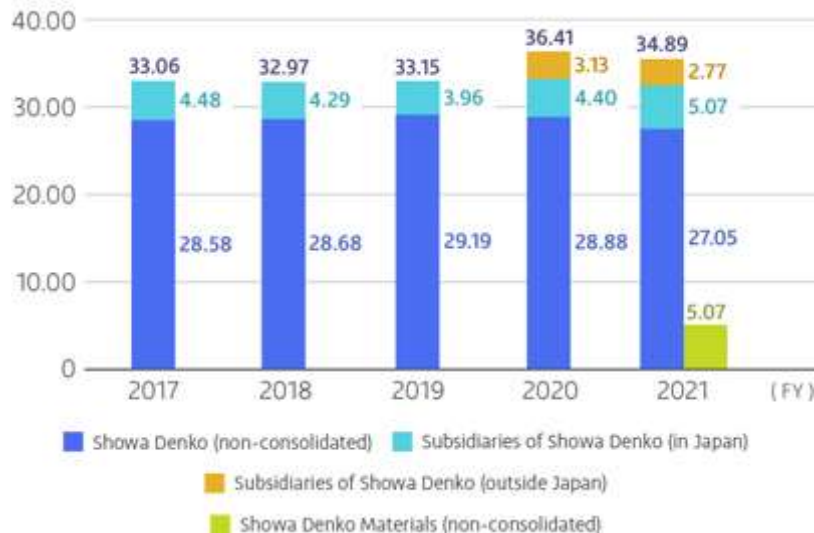
(Millions of m³)



[For the scope of data collection, please click here.](#)

Discharge-water volume

(Millions of t)



[For the scope of data collection, please click here.](#)

TOPICS Efforts made by the Tokuyama Plant for water saving: Collaborating with other organizations to reduce water

Tree thinningThe Tokuyama Plant of Showa Denko K.K. has been working to reduce water consumption in collaboration with other companies, in response to the annual request for voluntary water conservation made by the council of industrial water users in the Shunan district. Regardless of the request, the plant is committed to saving more water and monitoring seasonal changes in water temperature and the operational status of plant equipment. The amount of water saved differs by year, but in 2020 the plant achieved a roughly 42% reduction in water use



Tree thinning

(relative to the volume of water contracted to be supplied).

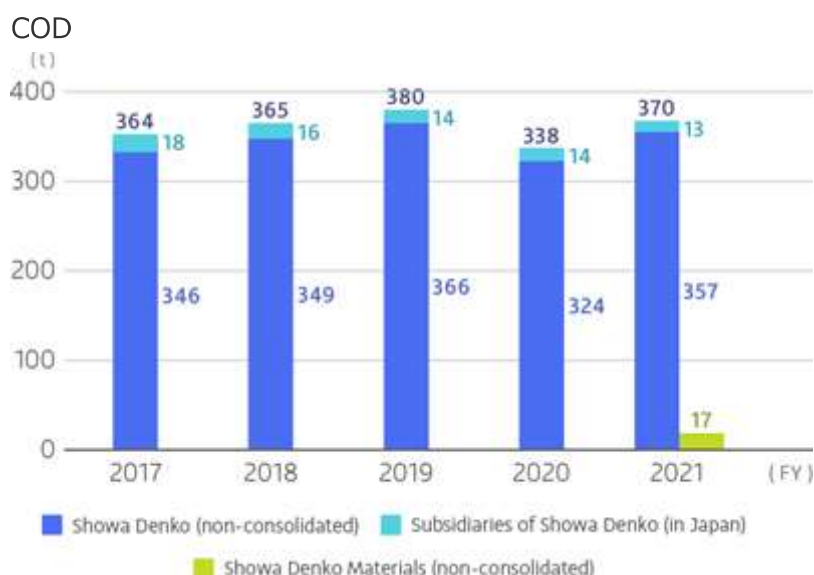
Moreover, employees of the Tokuyama Plant participate in a local volunteer activity conducted for forest and water management. The activity is designed to help participants deepen their understanding of the water source protection and global warming prevention functions provided by forests and to foster forestation and the appropriate management of forests as a voluntary initiative. It is conducted twice in fall by employees of companies located in the Shunan district and their families. (In 2021, the activity was not held due to the COVID-19 pandemic.)

Measures to reduce our impact on the aquatic environment

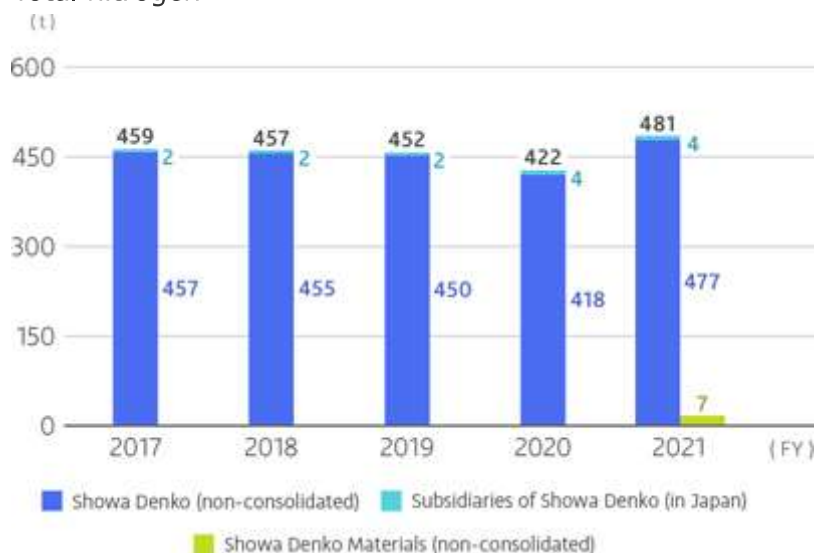
Based on the regulatory standards set by laws, regulations and ordinances, the Showa Denko Group set its own management criteria to monitor changes in chemical oxygen demand (COD) and the emissions of nitrogen, phosphorous and various other water pollutants, thereby reducing the environmental impact of its business activities.

At our major production bases in Japan, we recover wastewater from the manufacturing facilities for neutralization and the removal of solid substances. For wastewater that contains organic matter, we break down the matter by using microorganisms in the activated sludge process. For wastewater that is difficult to treat by the activated sludge method, we adopt adsorption treatment, coagulative separation, incineration treatment and other methods. We also monitor the discharge of water from our facilities to public waters. In the event that a failure of wastewater treatment equipment causes the generation of wastewater with a potentially high environmental impact, the blocking system installed at the discharge outlet is activated to prevent the water from being discharged to outside the facilities site.

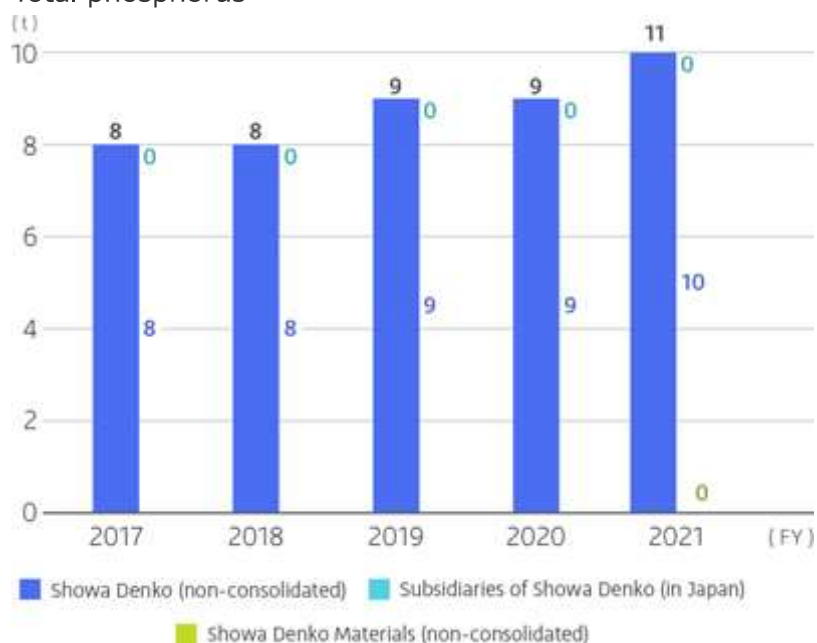
■ Discharge of substances that have an impact on the aquatic environment



Total nitrogen



Total phosphorus



[For the scope of data collection, please click here.](#)

Efforts for Preservation of Biodiversity

Basic ideas and policies

In order to pass down to the next generation the beautiful scenery and rich natural resources provided by ecosystems, the Showa Denko Group will make efforts for biodiversity conservation based on the following policies.

- Evaluate and reduce the impact of the Showa Denko Group's business activities on biodiversity
- Work to restore threatened biodiversity
- Implement measures through conservation and cooperation with stakeholders

We will work for biodiversity conservation in collaboration with stakeholders, including governmental agencies and regulatory authorities, giving our support to the Initiative based on the Declaration of Biodiversity by Keidanren and joining the Japan Business and Biodiversity Partnership* .

We also regard the issue of ocean plastic waste as one that we must address with leadership as a chemical manufacturer. Accordingly, we joined the Japan Initiative for Marine Environment (JaIME), which was launched in 2018, and have been discussing the measures to be taken, compiling and sharing information, and conducting awareness-raising activities for developing countries in Asia in cooperation with other business associations.

* Japan Business and Biodiversity Partnership: A multi-stakeholder biodiversity initiative that consists of business entities which endorse "Action Policies of Japan Business and Biodiversity Partnership" and are implementing or planning to implement one or more actions among them, and economic organizations, NGOs, researchers, local/national governments and other public organizations which support those business entities' biodiversity initiatives.

Activities in 2021

We have included firm-wide biodiversity conservation activities in the target of the RC action plan. Specifically, we have set a three-year plan for 2019 to 2021, under which we aim to make measurable achievements by conducting business activities in consideration of biodiversity and implementing initiatives that contribute to environmental conservation.

Based on this company-wide target, we are making plans for each of the sites to ensure the appropriate maintenance and management of greenspaces, reduce wastewater as part of their proactive environmental impact reduction measures, and conduct environmental conservation activities in

consideration of the features of the sites. Again in 2021, we conducted activities to improve the environment in and around our sites, including activities to clean up nearby beaches, rivers and lakes.

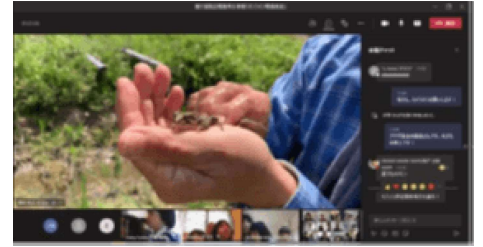
At Showa Denko Materials (Thailand), which is one of the Showa Denko Group sites outside Japan, a total of 1,850 mangrove seedlings were distributed to employees, who then planted them around the site.



The Omachi Plant, Carbon Division of Showa Denko K.K., uses local water resources in its business activities. Plant personnel conducted a cleanup activity in cooperation with members of the local fishing cooperative association, which kindly supports the operations of the plant's hydroelectric power station. They clean Lake Kizaki and Lake Aoki and Lake Nakatsuna every year.



Showa Denko's Hikone Plant has a pond in which wastewater from the manufacturing facilities is stored to check its quality before it is discharged to public waters. The Plant manages the pond as a scenic area as part of its effort to preserve the natural environment on the premises, and through the activity also contributes to maintaining the water quality of Lake Biwa.



Showa Denko Materials is implementing an environmental rehabilitation project around Kasumigaura in collaboration with the local government and an NPO, with a view to preventing the degradation of the environment and preserving local ecosystems in the Kasumigaura basin area (in Ibaraki Prefecture), which provides the company with a source of industrial water. In 2021, in the face of COVID-19, an online environmental class was held under the project to provide participants with an opportunity to engage with nature.

Social

Occupational Health and Safety

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Human resource management

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Community

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Protection of intellectual property

[Protection of intellectual property \(Link to "R&D"\)](#)

Occupational Health and Safety

[Management system](#)[Prevention of Occupational Accidents](#)[Equipment Safety](#)[List of safety-related awards](#)

Management system

Basic ideas and policies

The Showa Denko Group gives first priority to safety, upholding the target of zero lost-time incidents. We deem it essential to ensure safety as a precondition to remain “qualified as a manufacturer,” regarding safety as the basis for our business continuity.

As the basis to ensure occupational health and safety, Showa Denko set Our Code of Conduct and is working to eliminate occupational accidents targeting all people working for the Group, including employees of partner companies and suppliers working on the premises of the Group’s sites. Showa Denko Materials, meanwhile, has long been implementing its 10 safety principles as the basis for safe operation, with individual employees fulfilling their responsibility for safety according to their job positions.

Presently, we are examining the conventional occupational health and safety policies of the two companies with the goal of unifying them so that both companies can achieve an even higher standard of occupational health and safety.

Promotion system

The Showa Denko Group manages occupational health and safety under its Responsible Care promotion system, regarding it as part of Responsible Care activities. The president of Showa Denko K.K. assumes ultimate responsibility for the Group’s occupational health and safety. Under the leadership of the president, each of the divisions and sites appoints their own environment & safety managers to conduct health and safety management activities, receiving support from the administrative departments of the head office. At weekly safety meetings, the Management Committee is briefed on safety-related activities of the Group and gives relevant instructions, which will be conveyed to the divisions and sites

for implementation. Moreover, at each site, the head of the site and the environment & safety manager lead occupational health and safety activities based on their Responsible Care action plans.

The Labor-Management Committee, which is composed of the president and other executives as well as representatives of the labor union, meets annually to discuss issues related to occupational health and safety. Also, in line with the Industrial Safety and Health Act of Japan, each of our sites has a safety and health committee and other organizations in place to conduct safety and health activities for employees through a concerted effort by labor and management, such as discussing the related issues and conducting workplace patrols.

Implementation of occupational health and safety management systems

The Showa Denko Group is managing and reducing occupational accident-related risks posed to its business management in an appropriate manner by using occupational health and safety management systems, for which the Group is promoting the acquisition of certification and fostering improvements. We have these management systems regularly assessed by external certification bodies to keep them up to date. Moreover, the systems are implemented at each site through a PDCA cycle to further promote the related activities.

[For sites with certified occupational health and safety management systems, please click here.](#)

Educational system

We deem it urgently necessary to increase the safety sensitivity of managers, supervisors and workers to eliminate industrial accidents and to prevent the retirement of experienced employees and replacement of staff from resulting in any degradation in safety and environmental management at our sites. Accordingly, we make and implement annual safety education plans for each of our sites and check their learning levels. We also give support for the educational curriculum of our partner companies in a planned manner toward the elimination of industrial accidents at those companies.

The following shows the occupational safety-related training provided by the head office. Those participating in the training from the sites make use of what they have learned through the training to conduct safety activities at their respective workplaces.

Since the middle of 2020, we have shifted from offline collective training to online training as a new training style that is also appropriate in terms of dealing with COVID-19

■ Number of participants in the occupational health and safety training provided by the head office in 2021

Date	Name	Target	No. of participants
March 2021 (held twice)	Study meeting on incident analysis methods	Environment & safety manager of each site and others	10
May, Jul., Sept. and Nov. 2021	Training of internal auditors for ISO 45001 (held online)	Willing participants from Group sites	SDK: 52; SDMC: 52
June 2021	Basic course on health and safety management (held online)	All career-track employees	33
November 2021	Labor-management safety training (held online)	Head of the manufacturing department and environment & safety manager of each site, branch heads of the labor union, and those in charge of RC	104
November 2021	Course on health and safety management for supervisors (held online)	Those in positions equivalent to team leaders	18

Occupational health and safety education—Example (1)

Held labor-management safety training in 2021

On November 18, a total of 104 people participated in the training, with two representatives each from the labor union and management being sent from each of Showa Denko's sites. This online event was held to give participants deeper insight into the improvement of communication, which was the theme of the previous training.

In the event, presentations were made on examples of communication improvement activities conducted at the sites, and Michio Yoshida, honorary professor at Kumamoto University, gave a lecture on workplace communication. Participants were then divided into groups to discuss the issues and exchange information, both between sites and between labor and management. After the event, labor and management set the targets to be pursued to improve communication at their respective sites in and after 2022, and activities are now being conducted at the sites for the achievement of the targets.

Joint training for internal auditors for ISO held by Showa Denko and Showa Denko Materials

In 2021, Showa Denko and Showa Denko Materials jointly held online training four times each for their internal auditors for ISO 14001 and internal auditors for ISO 45001.

Compared with offline collective training, online training delivered benefits in terms of saving time and money. However, participants provided quite a lot of critical feedback about the online setting, including “Difficult to ask questions and express opinions” and “Hard to understand the content.” In response, in the latter half of the training, participants were given time to ask one another questions about the content in the group work, which helped them deepen their understanding of the details. Going forward, we will continue to hold this training online, while making improvements to remedy the shortcomings of the online environment.

Product Stewardship

[Management System](#)[Quality assurance](#)[Chemicals and Product Safety](#)

Management System

Basic ideas and policies

The Showa Denko Group works to ensure the safety of chemicals and chemical products by using a risk-based method, not only by checking the safety of its products during the stages of development, design, marketing, manufacture, sales and after-sale service, but also by monitoring how customers use and dispose of the products. By this method we identify and reduce risks for various product-related items. We conduct these risk assessments with a focus on (1) ensuring compliance and (2) promoting product stewardship.

(1) Ensuring compliance

The Showa Denko Group constantly monitors regulatory trends for chemical substances in Japan and abroad to ensure compliance with the laws and regulations of each country in a proactive manner. The head office and each of the sites cooperate with one another in a close manner and share information to prevent noncompliance.

Also, as the basic rules for product safety activities, we set the Quality Assurance and Quality Control Rules ("Rules") within the company. In 2020, we set our vision for quality assurance & management and for product safety, and fully revised our quality assurance and management rules based on the vision. We will work to provide even safer and more reliable products and services and solutions beyond the framework of the manufacturing industry.



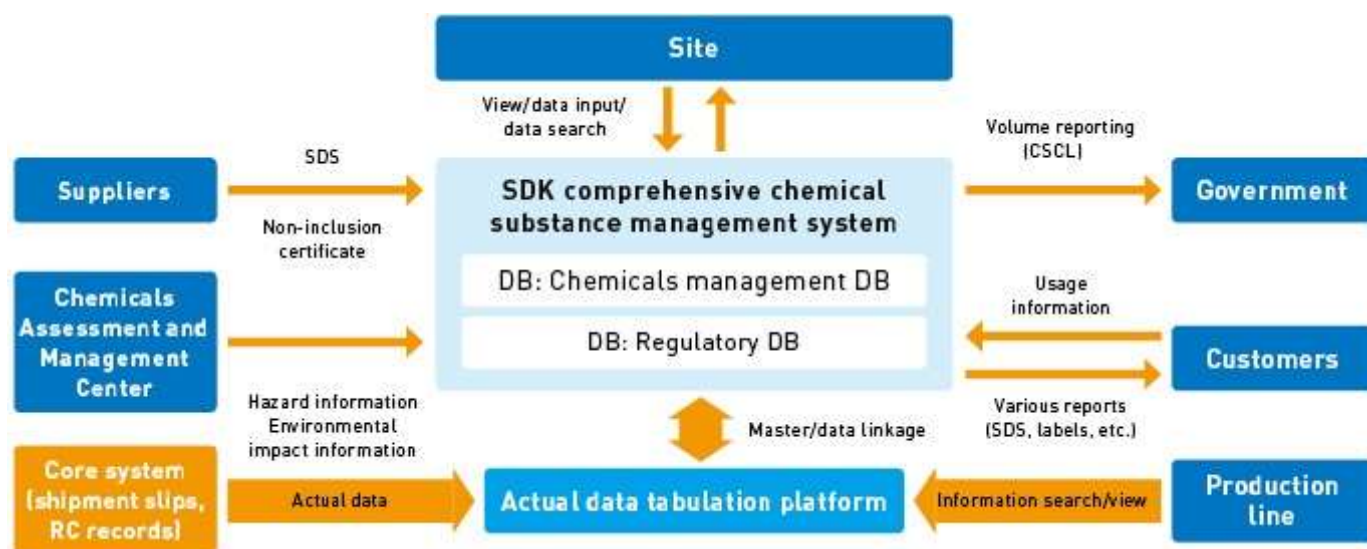
(2) Promotion of product stewardship

For the Showa Denko Group, “product stewardship” means to make product safety-related risk assessments in the development, design, manufacturing, sale, use and consumption stages of its products and disclose the assessment results to stakeholders as part of its effort for safety, health and the environment.

Based on this idea, we assess the risks related to our chemical products and manage the products in an appropriate manner.

Management system for product safety and regulatory information

As the basic infrastructure for the management of chemicals, we have built a comprehensive chemical substance management system for use within the Showa Denko Group. This system is composed of a database (DB) of information about chemical substances to be managed and another database of information about legal regulations on chemicals enforced in each country, and is equipped with functions that help employees to make effective use of the DB-stored information to perform their duties.



We manage information about raw materials of chemical substances, and our products in an exhaustive manner under the system. For each chemical substance, our Chemicals Assessment and Management Center collects extensive hazard and regulatory information and evaluates the collected information in a professional manner to ensure high information quality. Also, by updating the regulatory database in a timely manner and regularly reviewing the information stored in the database, we ensure the availability of the latest information. By making use of the functions of this system, which stores high-quality information in an exhaustive manner and provides the latest regulatory information, we efficiently and effectively deal with legal issues to ensure compliance.

For example, by making use of the search function to easily identify and list specific substances and products, we make appropriate responses to the revision of laws in each country. Further, we manage production/import volume and provide necessary notifications in Japan and abroad by linking the tabulation function of the system with another in-house core system. We also make use of the function to create safety data sheets (SDSs) to create and submit SDSs in line with laws and regulations.

As chemical substance-related laws and regulations are now being enacted and revised in an accelerated manner across the world, we will enhance and expand the management system to ensure our own compliance and also fulfill our responsibility as a member of the supply chain.

Human resource management

Human Resource Strategies

Development of human resources

Labor Practice

Promotion of diversity and inclusion

Employees' Health

Human Resource Strategies

Basic ideas and policies

Based on the purpose and values that constitute its corporate philosophy, Showa Denko believes that its human resource strategies should focus on fostering co-creative human resources and cultivating the associated corporate culture. This approach will be crucial to proposing creative resolutions to issues through co-creation founded on autonomous bonds with customers and other stakeholders, shaped by mutual understanding and a resonance of values. Such human resources are a wellspring of value for the Company. Based on this recognition, we aim to develop an organization in which all employees can feel tangible growth through the career paths that suit them.

Policies and Promotion system

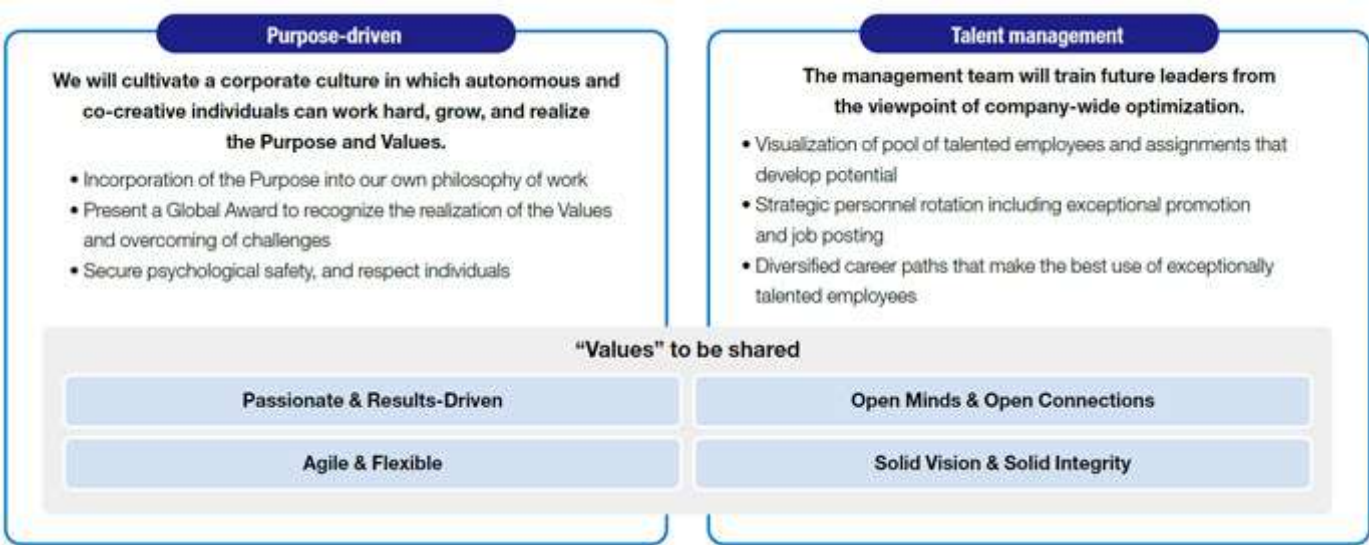
A substantive integration of the management teams of Showa Denko and Showa Denko Materials took place in 2022. To unite employees around the world and orient them toward a single shared goal, we also established a corporate philosophy, which defines our purpose and values, as the most important guideline for the newly integrated company. In addition, a new culture and communication division was established under the control of the CHRO with the goal of helping employees form an intimate and personal connection to our purpose and values. It is anticipated that such connections will help employees to maintain a sense of their purpose and aspirations, as well as those of the Company, even in times plagued with uncertainty. At the same time, we recognize that acting in accordance with our corporate philosophy will require us to secure a diverse staff and to aggregate the insight of these diverse individuals into a greater body of collective knowledge. Based on this recognition, our diversity and inclusion promotion team will be integrated into the aforementioned culture and communication division to play a leading role in the development of our corporate culture.

There is also a need for management to foster leaders from the perspective of Companywide

optimization. For this reason, we are strengthening systems to clearly identify candidates for future leadership roles and boost the competitiveness of our human resources through strategic job rotations. In addition, human resource business partnership systems are being reinforced to facilitate the growth and endeavors of businesses, from the perspectives of people and organizations, together with the general managers of business divisions.

Strategies

A top priority in fostering a corporate culture based on a shared understanding of our purpose and values will be to create a platform that underpins this culture, by aggregating the insight of diverse individuals into a greater body of collective knowledge. Specifically, we will implement measures to promote the dissemination of and personal connection with our purpose and values, which should serve as the basis for the judgments of all officers and employees, eradicate unconscious biases, and promote diversity. We thereby aim to develop an organization in which employees feel the psychological safety necessary to engage in constructive discussion, regardless of their rank, division, or affiliated company. Furthermore, a global award program to accelerate the embrace of our purpose and values is slated for launch in 2022. Conducted jointly by Showa Denko and Showa Denko Materials, this award program will offer an opportunity to recognize initiatives that embody our corporate philosophy and to provide stimulation and motivation to employees of all organizations and from all countries.



Sustainable procurement

Management system

Evaluation of Suppliers

White Logistics

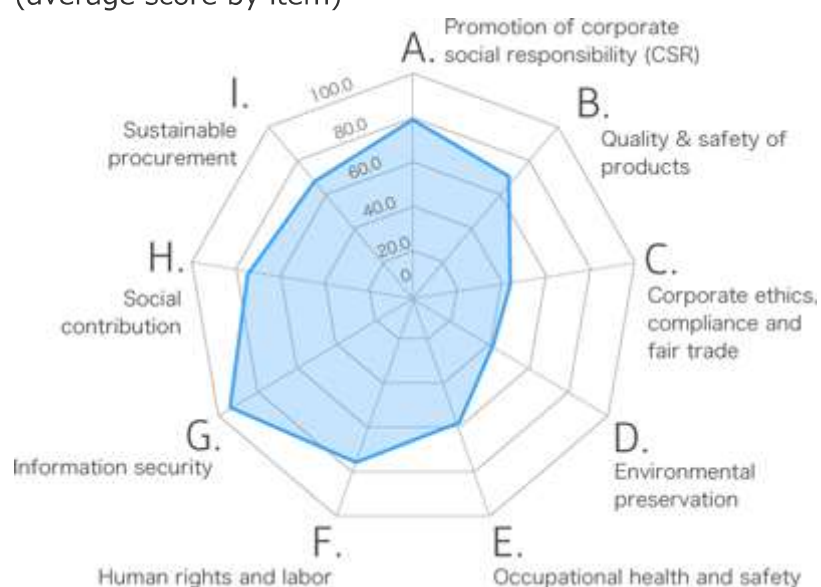
Evaluation of Suppliers

Activities in 2021

Self-assessments

Each year we ask about 400 business suppliers to fill out the self-assessment questionnaires regarding the Showa Denko Group's CSR Procurement Guidelines and thereby self-check their CSR activities. We ask major business suppliers to do it once every three years and all new suppliers to do it when starting business with us. In 2021, the total response rate came to 92%.

■ Results of CSR self-assessments made in 2021
(average score by item)



CSR visits

Since we launched this initiative in 2010, we have visited a total of 504 suppliers. We engage in dialogue with the suppliers

to check their CSR activities and introduce them to some examples of our excellent CSR activities. In 2020, we visited 41 suppliers and found no serious cases of human rights infringement or noncompliance for these companies.

If a noncompliance is detected concerning a supplier, we will discuss with the supplier and implement necessary measures for early improvement. We will also review our business relations with suppliers who we think do have a serious negative impact on our business continuity. According to the level of negative impact that might be caused by a supplier, we will stop requesting quotes from and placing orders with the supplier for a certain period, reduce the trade volume, or cancel the sales contracts concluded with the supplier. We will decide whether to resume transactions with the supplier or not after our purchasing personnel check how the supplier has made improvements by interviewing the supplier and confirm that our concerns about the negative impact have been mitigated or eliminated.

Follow up

We scored the CSR measures taken by the suppliers who conducted CSR self-assessments and those to whom we made CSR visits. We clearly indicated to each their CSR level against the total average and industry average. We also sent feedback reports to all the suppliers who performed CSR self-assessments to give them advice for improvements.

Total average score for the 2021 CSR self-assessments and measures taken for improvements
 Number of suppliers respondent: 327 companies, average score 65.4 points
 (Sent a feedback report (including a comparison with the total average score and industry average score, and requests for improvements) to each of the respondent companies)



	Number of cases	Rate	Measures for improvements
50 and higher	239	73%	Requested improvements for the items for which problems were identified while working to further increase the scores for the items with high scores.
From 30 to below 50	78	24%	Requested improvements for the items for which problems were identified and proposed improvement measures. *Made visits as required to exchange views about each other's measures. Will check the status of improvements in the next round of self-assessments.

	Number of cases	Rate	Measures for improvements
Below 30	10	3%	Requested improvements for the items for which problems were identified and proposed improvement measures. *Made visits as required to discuss measures for early improvements. Will check the status of improvements in the next round of self-assessments.

Participation in Community Activities

Basice ideas and policies

The Showa Denko Group will proactively participate in community activities with an eye to becoming a “social contribution company,” as stated in the Group’s CSR Policy. We will also deepen mutual understanding with local residents through sincere dialogue and will collaborate with them to solve local issues for the sustainable development of their communities.

Promotion system

At the head office, members from the General Affairs Department, the Human Resources Department and the Sustainability Department are holding meetings to discuss the social contribution activities to be conducted and the system for the activities to be implemented by the newly integrated company.

We collect information about social issues recognized by local stakeholders by communicating with them and implementing measures to solve these issues. Specifically, based on past activities conducted by our sites and affiliated companies, we implement the following measures according to the situation of each local community:

- (1) Identify the issues through communication with local communities
- (2) Set the medium- to long-term vision and priority themes (toward 2025)
- (3) Formulate and implement annual action plans

Also, in 2021, to prevent the further spread of COVID-19, we canceled many of the activities that had been planned at our sites. In 2022, we are continuing to work to contribute to the solution of local issues by implementing the action plans while giving due consideration to the COVID-19 situation

2021 Results of our local and social contribution activities

Details of the activities		Results(Showa Denko (consolidated in Japan))	Results(Showa Denko Materials (consolidated))	Results
Education (Developing Human Resources to Lead the Next Generation)	Dispatched employees as instructors	12 cases; Dispatched 143 man-hours	0	12 cases; Dispatched 143 man-hours
	Accepted interns	29 events implemented; Accepted 58 interns	3 events implemented; Accepted 14 interns	32 events implemented; Accepted 72 interns
	Offering guided plant tours (For students)	424 persons	2 persons	426 persons
Improvement of the environment around the worksites	Cleaning activities	109 cases; Conducted for 5,411 man-hours in total	131 cases; Conducted for 2,396 man-hours in total	240 cases; Conducted for 7,807 man-hours in total
Promotion of arts, culture and sports	Cooperation for and granting subsidies to arts, culture and sports: spend	Spent 1,805,000 yen	Spent 3,105,000 yen	Spent 4,910,000 yen
Exchange with local communities	Events	210 residents participated	35 residents participated	245 residents participated
	Facilities rented	Rented for 988 hours in total	Rented for 918 hours in total	Rented for 1,016 hours in total
	Offering guided plant tours (For Local communities and authorities, and the families of employees)	328 residents visited plants	0	328 residents visited plants
Community development and social welfare	Harmonizing with local economy: spend	Spent 1,217,000 yen	0	Spent 1,217,000 yen

Details of the activities		Results(Showa Denko (consolidated in Japan))	Results(Showa Denko Materials (consolidated))	Results
	Aluminum can recycling: proceeds *Donated to a range of facilities and organizations, including local social welfare councils	1,123,368 yen	0	1,123,368 yen
	Collaborating with NPOs and local organizations	Spent 268,000 yen	Spent 2,900,000 yen	Spent 3,168,000 yen
Social Contribution Expenditures	Social Contribution Expenditures including above	29,591,000 yen	57,312,000 yen	86,903,000 yen

Local and social contribution activities—Example(1)

Conducting an aluminum can recycling activity with the participation of all employees

The Showa Denko Group has been continuously conducting an aluminum can recycling activity with the participation of its employees as well as employees from partner companies.

A part of the proceeds from this activity is donated to various facilities and organizations, including local social welfare councils, welfare facilities and circles of people with disabilities, and the activity has been established as one of the regular social contribution activities conducted by the Group.



Donation to the local social welfare council
(Kitakata Plant)

Local and social contribution activities—Example(2)

Acquiring the right to name the stadium in Oita Sports Park

The multi-purpose stadium in Oita Sports Park is one of the representative facilities of Oita Prefecture, where Showa Denko houses its Oita Complex as a central base for one of its core businesses. The stadium is used for a range of sports events, such as J. LEAGUE football matches. Showa Denko acquired the naming rights for the stadium from Oita Prefecture. As a result, the stadium was named “Showa Denko Dome Oita” in 2019, and will continued to be called by this name for five years until 2024. The fees for the naming rights will partially be used for the prefecture’s “partnership project,” through which we can make local contributions, promote local sports, and revitalize local communities.



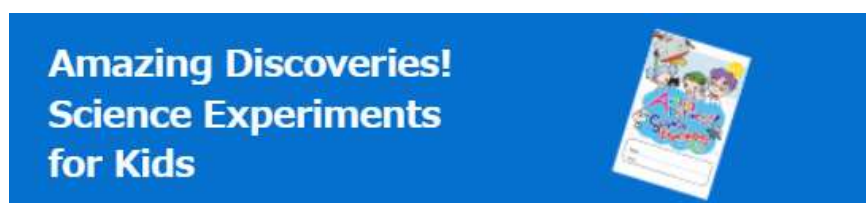
Multi-purpose stadium in the center of Oita Sport Park named “Showa Denko Dome Oita

Moreover, we decided to become a uniform sponsor for Oita Trinita from 2020, believing that the football club is making great contributions to local revitalization and sports promotion as an Oita-based football team belonging to the Japan Professional Football League (J.LEAGUE). We believe that providing support to the team will in turn help us to improve our CSR activities.

Local and social contribution activities—Example (3)

Developing Human Resources to Lead the Next Generation

In order to address the social issue of declining interest in science among children, the Showa Denko Group provides kindergartens, nursery schools and elementary and junior high schools located around its sites with texts and materials for experiment classes and also provides instructors for such classes from among its own employees, with the aim of helping children discover the joys of learning about science and chemistry. Moreover, on our official website, we post videos offering easy-to-understand explanations about how to conduct experiments like those included in the experiment classes at home, as well as the teaching materials (in PDF format) on the wonders of chemistry that we created and published for the classes.



Local and social contribution activities—Example (4)

Environmental Rehabilitation Activity around Kasumigaura

The Showa Denko Group obtains water for industrial use from Kasumigaura. In order to deal with the social issue of deteriorating water quality in Kasumigaura, we are working with an NPO named “Asaza Fund” to improve both water quality and the local biodiversity. Specifically, since fiscal 2012, we have been carrying out activities to regenerate the Satoyama environment (undeveloped woodland near populated areas) by planting asaza (aquatic algae) in Kasumigaura while also

growing rice and improving the environment on abandoned cultivated land in Sakuragawa City, Ibaraki Prefecture. (Since 2020, we have been refraining from conducting face-to-face activities to prevent the further spread of COVID-19.)



Participants in the activity

Local and social contribution activities—Example (5)

Green Curtain Project

We are conducting this activity to deal with the social issue of global warming. Specifically, we are working to create more “green curtains” on and around the premises of our sites in and outside Japan. In this activity, participants can enjoy creating green curtains that will help them stay comfortable without relying on air conditioners. (Cooperation by an NPO named “Midorinoka-ten Oendan”)



Governance

Corporate Governance

[Corporate Governance \(Link to "About Us"\)](#)

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Human Rights

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Risk Management and Compliance

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Evaluation of the Board of Directors' Effectiveness

Basic ideas and policies

Showa Denko aims to achieve sustainable corporate growth and to increase its medium- to long-term corporate value. To this end, as its responsibility and role, the Board of Directors is expected to build a system to make decisions in a transparent, fair, prompt, and resolute manner and to supervise the management of the system. The Company issues a questionnaire survey to directors and Audit & Supervisory Board members to evaluate the effectiveness of the Board of Directors as a whole and whether it has fulfilled that responsibility and role. Based on the survey results, issues to be resolved are discussed by the Board of Directors.

Results for 2021

Evaluation Method

Regarding the effectiveness of the Board of Directors in 2021, we conducted a survey in December 2021 in which the directors and Audit & Supervisory Board members answered questions and made free comments. Then, in March 2021, the Board of Directors held a meeting for all directors and Audit & Supervisory Board members to discuss the collected self-evaluation results, create a summary of the evaluation results for fiscal 2021, and formulate an action plan for fiscal 2022. To ensure the objectivity of the survey and further boost the effectiveness of the Board of Directors, the survey is conducted and the results are tabulated by an external organization.

Evaluation Results

The evaluation results have determined that, in Board of Directors' meetings, highly effective Board members with a broad perspective and values reflecting a variety of experiences and expertise are engaged in discussions that help to increase corporate value. Handouts and explanations about agendas are standardized and provided beforehand to encourage the members to take part in vigorous and constructive discussions and allow sufficient time for discussions. With regard to the action plan for

2021, which was made based on the results of evaluation of overall effectiveness of the Board of Directors for 2020, members of the Board of Directors and Audit & Supervisory Board have confirmed facts and issues as follows.

Regarding preparations for the substantial integration of Showa Denko and Showa Denko Materials in January 2022, important issues including the optimization of the business portfolio were discussed sufficiently at the Board of Directors' meetings, at meetings involving exchanges of views among all directors and corporate officers, and at other opportunities to discuss these issues.

Taking into account the expansion of the Showa Denko Group and the progress in globalization of business activities of the Group, the Board of Directors will continue discussing how the governance and compliance systems of the Group should be developed to boost effectiveness.

To facilitate the evolution into a "Co-creative Chemical Company," as put forth in the long-term vision, further discussion from a broader perspective is required with regard to management strategies and the ideal state of the Board of Directors.

The Board of Directors should revise the internal rules and regulations on the referring of proposals to Board of Directors' meetings to secure sufficient time to discuss issues effectively and efficiently, even when a Board of Directors' meeting is held by teleconference.

In the action plan for fiscal 2022, the Board of Directors decided to ensure thorough discussion of management strategies for realizing the long-term vision, the ideal state of the Board of Directors, and the management of the Group at Board of Directors' meetings by securing sufficient time and opportunities for such discussion. The Board of Directors also decided to continue taking measures to improve the effectiveness and efficiency of proceedings at the Board of Directors' meetings and other meetings of executives.

(Additional comments)

For the optimization of the business portfolio, measures are being taken based on the results of discussions held as required on the direction of corporate strategies and medium- to long-term outlooks at the opinion exchange meetings as well as at the Board of Directors' meetings. These measures can be said to be substantially sufficient.

As for the governance of overseas subsidiaries, it is necessary to conduct in-depth discussions on how to build an effective governance system to enhance the relevant functions.

For the two years beset with the COVID-19 crisis, we were unable to engage in the full-scale exchange of information, but we are being given a range of opportunities to foster cooperation, not limited to those provided at the meetings of the Board of Directors.

Risk Management

Basic ideas and policies

The Showa Denko Group is striving to build a system to control risks in both ordinary times and emergencies and to minimize the detected risks. Also, aiming to take actions before the materialization of risks, we are working on the establishment of a system to manage risk-related information in a collective and central manner for the efficient and effective escalation of important information to top managers, thereby supporting them in making decisions on business strategies and resource allocation.

Promotion system

Important issues related to risk management are discussed and examined at the Risk Management Committee, which is an advisory body for the Chief Risk Officer (CRO). The Committee reports the results of deliberations on important management issues to the Management Committee and the Board of Directors.

The Showa Denko Group has adopted a risk assessment, response, and review process that is compliant with the ISO 31000 standard. Once a year, a comprehensive identification of risks, including potential risks associated with business activities, and an evaluation of risks (risk inventory) are conducted at more than 140 frontline organizations, such as sections and groups. Results of risk inventory activities are reviewed at the site level by the top leadership of the respective division, plant, or Group company before being registered in the Group's risk management system. Registered risks may be identified as serious risks based on their potential frequency or degree of impact. The Risk Management Committee deliberates on the directions of countermeasures for identified serious risks and their appropriateness before reporting its findings to the Management Committee and the Board of Directors. The risk management departments of business sites then carry out the measures approved through this process. Of the risks examined by the Risk Management Committee, strategy risks are overseen by the CSO and the CFO, while operational and hazard risks are overseen by the CRO. These officers coordinate with business divisions to address the respective risks. Moreover, the perspective of risks management is installed within the scenario planning and business intelligence functions of the CSO, to effectively embed risk management into management strategies. The chief officer organizations act as risk oversight divisions by drafting risk scenarios and countermeasures for their respective areas of risk responsibility. Business divisions, meanwhile, take risk inventory of the subsidiaries they oversee. In these ways, risk management is conducted on a Groupwide scale.



Showa Denko's Definition of Risks

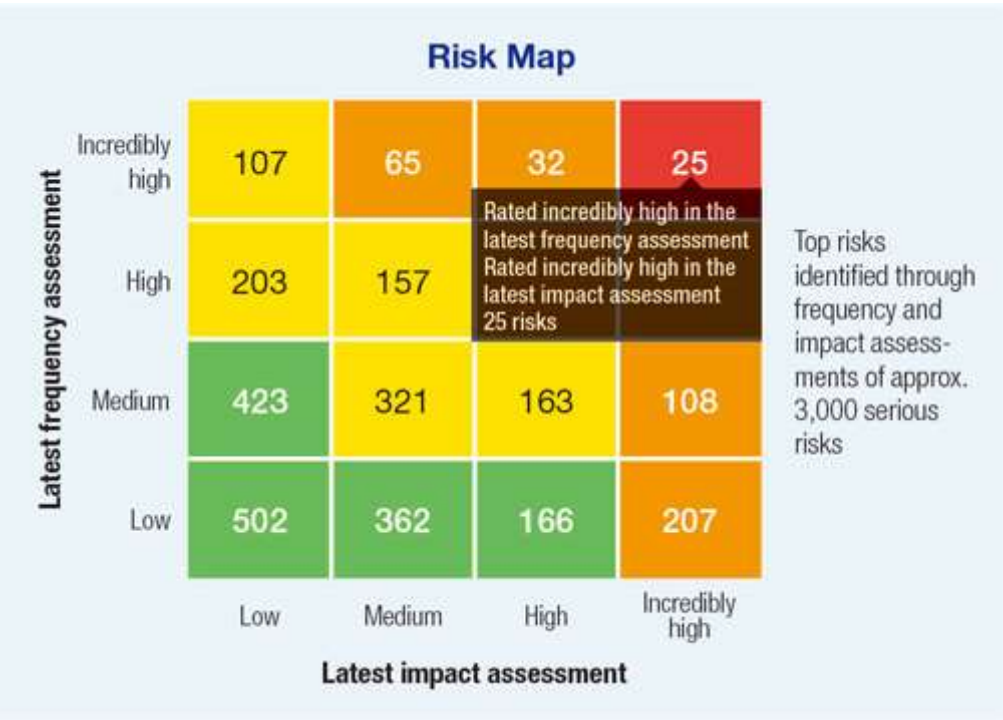
Showa Denko divides risks into three categories: strategy risks, operational risks, and hazard risks. Strategy risks are then further subdivided into risks of changes in the assumptions on which strategies are based and risks that the established strategies cannot be implemented as intended. Passive risk management based on the conventional focuses of safety and compliance will not be enough to ensure ongoing improvements in corporate value; it will also be necessary to engage in aggressive risk management that entails promoting appropriate risk taking. Based on this recognition, the newly integrated company will judge risks from a comprehensive perspective and reflect these judgments in management strategies.



Risk Inventory Activities

In 2021, the RSA Archer® Suite* was introduced as a shared tool for integrated management for use by both Showa Denko and Showa Denko Materials. This decision was made after a comparative assessment of the risk management systems of both companies. Approximately 3,000 serious risks from among the risks threatening both companies have been registered in this system. These risks were then categorized based on their potential frequency and degree of impact, to identify serious and priority risks. Risks that are judged to have both an incredibly high frequency and a potential degree of impact have been positioned as top risks. The risk phenomena and response plans for the top risks were discussed among the relevant divisions, with information shared, and reports were issued to the management committee. Moreover, the results of assessments through the system were shared with Companywide managers to help mitigate frontline risks.

* A risk management system provided by RSA Security LLC



Specific Risks and Countermeasures

Specific Risks and Countermeasures

<p>Accidents</p> <p>Risk of impediments to product supply due to damages to the production facility or loss of employee safety as a result of accidents, etc.</p> <p>Countermeasures</p> <ul style="list-style-type: none">• Extensive utilization of the safety management system• Analyses and training based on case studies of past accidents occurring inside and outside the Company, etc.	<p>Information security risks</p> <p>Risk of leaks of confidential or personal information, halts to operation of internal systems due to cyberattacks, alteration of corporate websites, etc.</p> <p>Countermeasures</p> <ul style="list-style-type: none">• Training programs to improve information security awareness• Measures to prevent information security incidents• Response measures to limit the impact of incidents, etc.	<p>Supply chain risks (Natural disasters, infectious diseases, environmental and human rights issues, conflicts, trade friction, etc.)</p> <p>Risk of impediments to product supply due to damages to production facilities as a result of earthquakes, floods, or other natural disasters; pandemics; environmental or human rights issues; conflicts; or trade friction occurring in areas of the Company's supply chains</p> <p>Countermeasures</p> <ul style="list-style-type: none">• Preemptive identification of multiple risks and implementation of swift response measures• Establishment of risk mitigation regulations and rules, and dissemination to business partners• Identification of priority products, establishment of business continuity plan manuals, institution of training programs, etc.
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Enhancement of business continuity plans (BCPs)

We at the Showa Denko Group are aware of the importance of ensuring our business continuity as our responsibility as a supplier, recognizing the fact that the availability of our products has an impact on society at large. While expanding our business domain, we have been making BCPs based on the idea that we need to build a business system that is highly resistant to disasters and other crises both in Japan and overseas.

We make specific BCPs in consideration of the features of each of our businesses and products and work to implement equipment-related measures and build systems for disaster control and mitigation, and improve stockpiling plans in preparation against possible disasters, and to clarify and solve problems by continuing the aforementioned “risk inventory” activity to make risk assessments. We are thereby managing our business in a manner that enables us to continue it while giving first priority to people’s lives. Moreover, we regularly conduct drills to foster collaboration for BCPs between the divisions, plants and Group companies, through which participants can share the lessons learned, problems and best practices. We also incorporate the findings made through the drills in our BCPs.

Information Security

Basic ideas and policies

The Showa Denko Group has established information security rules to be applied across the company both in Japan and outside the country to maintain and improve its level of information security. We handle our own information assets and those entrusted to us by those outside the company in strict compliance with the rules under the leadership of the Chief Digital Officer (CDO), who is in charge of information security across the board. We thereby protect such information assets from various threats and treat them appropriately regarding information security.

Management system

We have a department devoted to information management and protection, have established an information security system to be operated organizationally on a company-wide basis, and have clarified the roles and responsibilities to be fulfilled under the system. Moreover, we regularly evaluate our information security management system and measures for continuous improvement so that we can respond to changes in the management environment and society at large and ensure compliance with various laws and regulations with regard to information security.

Security measures

We set our basic information security measures to protect the Group's information assets from external threats, including using anti-virus software, conducting access control and limiting the use of external storage media, and have introduced these measures to our sites in Japan and abroad. We regularly monitor the implementation of these measures at the sites.

Employee education

We provide all employees with e-learning opportunities, including training with regard to targeted e-mail attacks, with a view toward helping them to increase their information security awareness and prepare against more skillful targeted attacks.

Management of outsourcing companies

Employee education

Before outsourcing operations to other companies, we check their information security risk-related education, enlightenment and initiative levels to confirm that they are on par with the Showa Denko Group in terms of information security.

Compliance

Basic ideas and policies

The Showa Denko Group believes that compliance provides the basis of its business continuity and is essential for the achievement of its vision. Accordingly, we comply with social norms of each country and region, and corporate ethics as well as laws and regulations. In addition, we are implementing the system and conducting a range of activities to spread ethical values based on honesty, impartiality, and integrity.

Corporate Ethics Hotline

We operate the Corporate Ethics Hotline so as to be able to detect from across the Showa Denko Group any incidents of noncompliance or unfair and other behaviors that contravene corporate ethical standards at an early stage in order to resolve them.

Employees can make a report via Showa Denko's website and intranet as well as through the external law firm designated by the company. Not only Group employees but also all other stakeholders, including suppliers and local residents, can make reports to the Group through the hotline. We operate the Corporate Ethics Hotline so as to be able to detect from across the Showa Denko Group any incidents of noncompliance or unfair and other behaviors that contravene corporate ethical standards at an early stage in order to resolve them.

Employees can make a report via Showa Denko's website and intranet as well as through the external law firm designated by the company. Not only Group employees but also all other stakeholders, including suppliers and local residents, can make reports to the Group through the hotline.

For national staff of Group companies outside Japan, we have also been providing a multilingual hotline service (external service in 12 languages). The hotline service can be used anonymously both within and outside Japan, and we clearly state that we respect the privacy of service users and prohibit any disadvantageous treatment of users by their companies. For each of the reports made to the hotline internally and via the external contact, we talk to the company/site in question, and the department in charge conducts a survey on the issue to confirm the facts. If noncompliance with laws, regulations and others is confirmed as a result of the survey, we promptly take corrective actions. For serious issues, reports are made to the Board of Directors, including details of the internal report made to the hotline, the survey, corrective actions, and measures to be taken to prevent the recurrence of similar problems.

The secretariat of the Corporate Ethics Hotline received 99 reports and requests for consultation in 2021. After prompt and careful investigation of the details, we took corrective measures as necessary. Regarding the cases of harassment, including those involving sexual harassment and abuse of power, which account for about 50% of the cases for which requests for consultation were made, we conduct relevant training for managers of Group companies toward the reduction of such cases.

[Corporate Ethics Hotline](#)

Tax compliance

The Showa Denko Group set the tax code of conduct based on the recognition that it is one of the social responsibilities of an enterprise to contribute to society's growth through tax payment in all countries and regions where it conducts business activities. We will make appropriate and prompt responses to the taxation system and regulations of each country and region, while continuing to provide employees with training to maintain and raise their tax compliance awareness.

Related link [Showa Denko Group's Tax Code of Conduct](#)

Compliance education

The Showa Denko Group annually translates the Group CEO's message for Corporate Ethics Month into multiple languages to share it with Group employees both in and outside Japan. In 2021, based on Our Code of Conduct, which was revised in 2020, and with a focus on themes familiar to each workplace, we held workplace meetings to talk about how we felt in our daily operations and what we needed to pay attention to with regard to ethics and compliance.

Anti-corruption

Basic ideas and policies

The Showa Denko Group takes the expectations of all stakeholders seriously and is committed to fulfilling its promises to them in a sincere manner. In all countries and regions, we will eliminate acts of corruption, such as breach of loyalty, abuse of authority, forcible transactions using undue influence, bribery, embezzlement, concealment, obstruction of justice, and money laundering as well as other unfair and anti-social actions. We clearly state our policies on “Anti-corruption” and “Compliance with competition laws” in the respective sections of Our Code of Conduct, which sets out the basic behavioral rules that all Group employees are expected to follow when performing their day-to-day duties. Moreover, we work to ensure the implementation of the policies by all employees.

Compliance with anti-bribery laws and regulations, and prevention of corruption

Bribery of public servants, etc. (including executives and employees of companies under substantial control of national and local governments, executives and employees of public international organizations, candidates for public office and others) or executives and employees of companies in the private sector and the compulsion, offer, and inducement to bribe are acts that cause corruption in national economy and politics, and prevent the sustainable growth of the international community. The Showa Denko Group has formulated the Showa Denko Group’s Global Anti-Bribery Policy, and we are implementing drastic measures to comply with anti-bribery laws and regulations enforced in each country. The Showa Denko Group has also been holding an e-learning seminar to provide basic knowledge on bribery to its employees in Japan and abroad, and a total of over 800 employees have participated so far. Through this e-learning seminar, we clearly explain that it is a violation of the bribery regulations enforced in each country and of the Group’s internal rules to provide government officials or executives/employees of companies in the private sector with excessive entertainment or gifts, either directly or through third parties, for the purpose of unfairly obtaining sales orders or to receive entertainment or gifts, engage in collusion or make facilitation payments for such purpose. The Group also educates employees on how to avoid bribery-related risks.

Also, for the provision of benefits and exchange/entertainment opportunities that do not constitute bribery, we conduct sufficient examinations as to the reason why we need to provide them, recognizing that providing them for the purpose of making profit unfairly may lead to corruption. Moreover, we

prohibit, in principle, individual employees and workplaces from accepting any money or gifts from suppliers and other related parties. Specifically, we prohibit in our in-house rules the provision and receipt of benefits, exchange/entertainment opportunities, and gifts that could be suspected as being intended to produce unfair profit. We also set an upper limit on the amount of money that can be spent for the purpose of socializing, thereby preventing the provision of excessive benefits. We have also set an approval process for the provision of such benefits.

Furthermore, we are enhancing anti-corruption measures targeting businesses and transactions with high corruption-related risks. In particular, for transactions with governmental agencies, we ensure through internal audits that no form of bribery—including the provision and receipt of entertainment or gifts—collusion or embezzlement has occurred. In addition, through the Sustainable Procurement Guidelines, we raise the awareness of all our suppliers, agents, consultants, distributors and other intermediaries about Showa Denko's anti-corruption policy, which prohibits the entertaining of government officials and giving/receiving of inappropriate benefits. Also, in the self-check questionnaire on CSR that we ask suppliers to fill out, we include questions about corruption risks to evaluate the suppliers in regard to such risks and prevent their materialization.

[Showa Denko Group's Global Anti-Bribery Policy](#) (108kB)

[Showa Denko Group's Sustainable Procurement Guidelines](#) (316kB)

Compliance with competition laws

For complying with competition laws, which are designed to ensure fair and open competition, in each country, we formulated our own anti-cartel rules in 2010 and have been implementing the rules to control cartel risks appropriately in our daily business operations. Also, since 1999, we have been carrying out internal audits every year to check for illegal sales activities to ensure compliance with competition laws and reported the results to top management. We also published a range of guidelines, including the handbook on antimonopoly laws for sales personnel, the Antitrust Compliance Guideline, and the Compliance Program of EU Competition Laws, with an eye to raising employees' compliance awareness regarding competition laws across the Group. Furthermore, we have been holding an annual seminar on competition laws for the Group's sales personnel (including national staff of Group companies outside Japan), inviting external experts in competition law to serve as lecturers. (Cancelled in 2020 due to the COVID-19 pandemic)

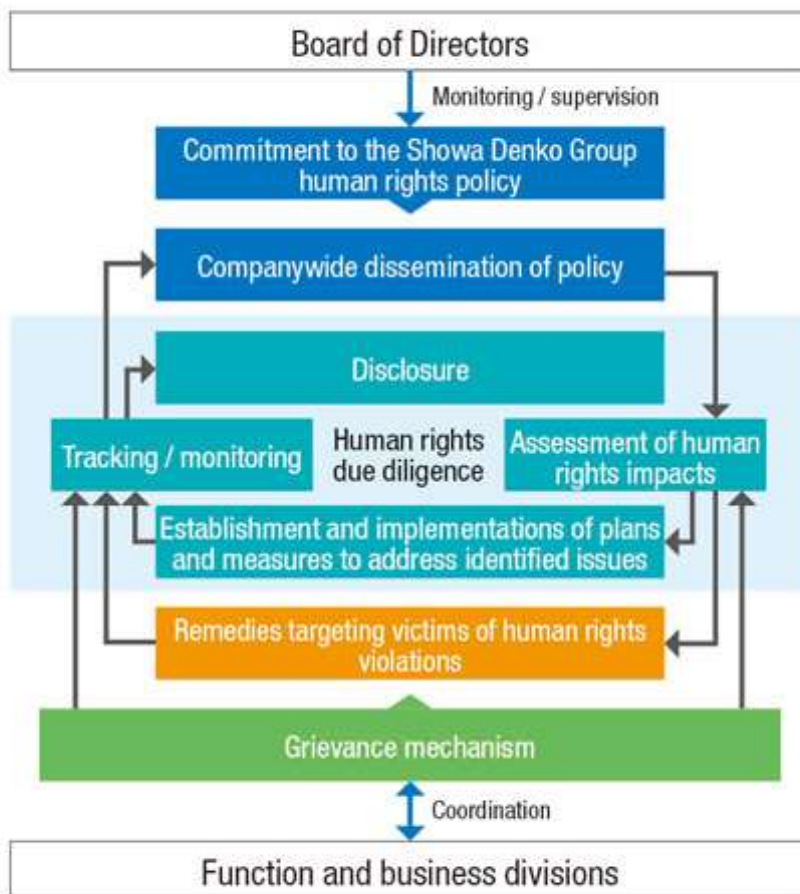
Respect for Human Rights

Basic ideas and policy

The Showa Denko Group Human Rights Policy was established in 2021. All employees are expected to conform their actions to this policy, and we request that suppliers and all other business partners adopt the spirit of the policy. We also continue to build upon human rights due diligence activities in accordance with this policy.

In 2021, focus was placed on risk assessments of Showa Denko Group employees in Japan and on process assessments of sustainable procurement activities. Any human rights issues discovered through these assessments will be addressed through concrete improvement activities, including training to raise awareness, revisions to regulations, and reforms to procurement processes. In 2022, we expanded the scope of human rights due diligence activities to include overseas Group employees, workers with non-direct employment schemes in Japan and overseas, and the supply chain in its entirety. This move was made based on the rising geopolitical risks and on our need to act as a newly integrated company. Through this expanded scope of activities, we have begun identifying high-risk areas.

Priority measures	Targets for 2025	Results in 2021
Human rights	Establishment of human rights due diligence processes and implementation frameworks	Commencement of human rights policy establishment, issue identification in Japan, and response measure formulation



The Showa Denko Group Human Rights Policy

The Showa Denko Group aims to contribute to the sustainable development of a global society based on its significance of existence (purpose) of "changing society with the potential of chemistry."

The Showa Denko Group has human rights as the basis of its business activities in all countries and regions where it operates in order to realize a society in which the dignity of all people is ensured and everyone is equally respected without being left behind.

We have clarified these ideas and attitudes, and have formulated a human rights policy (hereinafter referred to as this policy) here as a promise to our stakeholders.

Scope of human rights policy

This policy applies to all officers and employees (including contract employees) working in the Showa Denko Group. We also expect all business partners, including our suppliers, to understand and support the content of this policy, and will continue to work to ensure that this policy is respected by them.

Commitment to respect for human rights

We are aware that the businesses of the Showa Denko Group and all business partners including

suppliers, directly or indirectly affect human rights in each process of the value chain from product development to procurement, manufacturing, distribution, use, final consumption, and disposal. The Showa Denko Group is committed to prohibiting all discrimination and harassment, providing a safe working environment and reducing excessive working hours, ensuring minimum wages, and respecting freedom of association and the right to collective bargaining. We also do not allow child labor, forced labor or human trafficking for the purpose of labor exploitation, especially in the field of supply chain management.

- Support for international human rights principles

The Showa Denko Group supports internationally recognized human rights principles ("International Bill of Human Rights", the International Labour Organization's (ILO's) "Declaration on Fundamental Principles and Rights at work", "the Children's Rights and Business Principles", etc.) and make them our own standards.

In addition, as a UN Global Compact signatory company, we will respect human rights in all aspects of our business activities and strive to prevent and mitigate adverse impacts by operating our business in accordance with the "the Ten Principles of the UN Global Compact" and "the UN Guiding Principles on Business and Human Rights."

- Remediation

In the unlikely event that the operations, products and services of the Showa Denko Group and its business partners including suppliers, have an adverse impact on the human rights of our customers, local communities and other stakeholders, we will endeavor to provide for remediation through appropriate procedures.

- Compliance with applicable laws and regulations

In making business decisions, the Showa Denko Group will comply with all applicable laws and regulations in each country and region in which it operates. In the unlikely event that the laws and regulations of the country or region differ or conflict with the internationally recognized human rights principles, or when faced with conflicting requirements, we will pursue ways to respect the internationally recognized human rights principles. In the context of stakeholders and circumstances where the Showa Denko Group cannot control decision-making, we will strive to exert influence so that this policy will be respected, and will continue to work to avoid complicity in human rights violations.

Governance

In order to fulfill our responsibility to respect human rights, the Showa Denko Group will maintain an internal system to steadily implement human rights due diligence initiatives based on this policy.

In addition, we will reflect this policy in relevant policies, procedures and operations so that it can be properly incorporated into our business activities.

Human rights due diligence

In accordance with the UN Guiding Principles on Business and Human Rights, the Showa Denko Group will establish a process to properly assess the impact of business decision-making and execution on human rights, identify, prevent and mitigate risks that cause or contribute to serious human rights violations, and strive to provide for remediation.

In addition, in order to verify whether the adverse impact on human rights is being dealt with, we will continuously track and evaluate the effectiveness of the response.

Grievance mechanism

The Showa Denko Group will establish grievance mechanisms both internally and externally with the aim of early detection of concerns, including adverse impacts on human rights, and the resolution of problems. The grievance mechanisms are available to all stakeholders such as employees, business partners including suppliers, and local communities. We will ensure the anonymity of the person making the report and the confidentiality of the content of the report. In addition, we will prohibit unfavorable treatment and retaliation against the whistleblowers, and will thoroughly protect them.

Stakeholder engagement

The Showa Denko Group recognizes that it is important to understand the adverse impacts on human rights from the perspective of those affected. Therefore, we will endeavor to utilize it in our efforts to respect human rights by continuously conducting dialogues and discussions with our stakeholders.

Information disclosure

The Showa Denko Group regularly discloses information on initiatives on respecting human rights and human rights due diligence taken based on this policy through its website and other means.

Dissemination / education

The Showa Denko Group will not only continue to provide appropriate education and training to all officers and employees (including contract employees) but also work on capability building necessary to put this policy into practice so that this policy will permeate the company. In addition, we will strive to respect human rights throughout the value chain by thoroughly communicating the contents of this policy to our business partners, including suppliers.

Human rights policy formulation process and review.

This policy is informed by the advice of external experts who have expertise and practical experience in human rights and has been formulated based on internationally recognized human rights principles, "the Ten Principles of the UN Global Compact", and "the UN Guiding Principles on Business and Human Rights" with the approval of the Board of Directors.

We will review this policy on a regular basis in light of changes in the social environment and dialogues and discussions with stakeholders, and strive to enhance efforts to respect human rights.

Showa Denko K.K.
Group CEO
Hidehito Takahashi
October 1, 2021

[The Showa Denko Group Human Rights Policy](#) (205KB)

Promotion system

The management team and the organization in charge of human rights are working together to foster human rights-related measures. The organization is composed of the secretariat (department in charge)

and project members selected from each of the divisions that play a central role for human rights-related measures.



Related link: [Sustainability Promotion Council](#)

Due diligence for human rights

The Showa Denko Group is committed to fostering due diligence for human rights so that it can identify any events that might lead to the infringement of human rights and deal with the identified issues in an appropriate manner to prevent human rights violations and any complicit acts.

In 2021, for due diligence for human rights, we conducted a risk survey on employees of the Showa Denko Group companies in Japan and a survey for CSR-oriented procurement in consideration of our present situation regarding respect for human rights and the magnitude of the adverse impact that we might have on human rights. For the human rights-related issues thus detected, we are raising the awareness of employees through training, reviewing the related rules, improving the procurement process, and conducting specific measures for improvement. For this initiative, we are receiving professional advice from KPMG AZSA Sustainability Co., Ltd.

In 2022, in addition to the aforementioned measures, we will expand our target of due diligence for human rights to include Group employees outside Japan, those working for the Group through indirect employment, and the supply chain, and will start by identifying problems in high-risk areas.

Human rights education

During Human Rights Week in December 2021, we provided all employees with education on the basic concept of respect for human rights as described in the Showa Denko Group Human Rights Policy, important human rights-related issues and on how business activities are related to human rights through e-learning and workplace discussions.

The education was provided in Japanese, English and (traditional and simplified) Chinese, and 89.9% of employees (of Showa Denko and its consolidated subsidiaries) received the education in Japan.

Human rights throughout the supply chain

In order to conduct business that takes human rights into consideration throughout our supply chain, we ask suppliers to respect basic human rights, prohibit discrimination, ensure proper working conditions and protect the rights of their workers. We are continuously working with suppliers to help them comply.

Related link: [Sustainable Procurement](#)

Related link: [Compliance](#)

Data Collection

[ESG Performance Data Collection](#)

[Editorial policies & Report Scope](#)

[Third-party Verification](#)

[List of Data Collection Boundaries](#)


[List of Declarations and Certifications](#)

ESG Performance Data

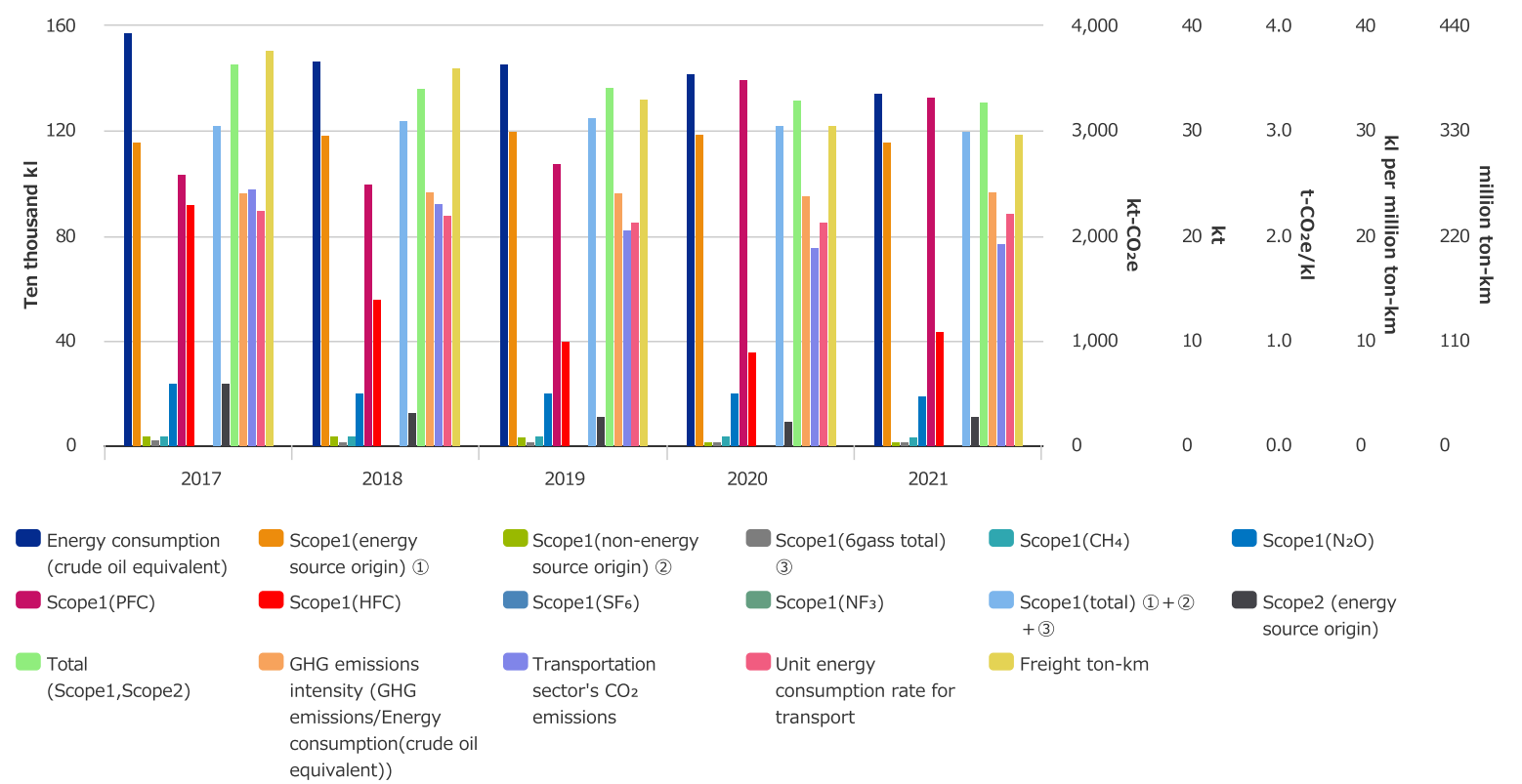
Environment, society and governance (ESG)-related data are posted in this website section. Data for fiscal 2017 to fiscal 2021 as well as for fiscal 2021 are posted for Showa Denko and Showa Denko Materials, respectively. The data can be downloaded in Excel/PDF format.

For the scope of data collection, please refer to [List of Data Collection Boundaries](#).

We receive third-party verification for Showa Denko's environment- and safety-related data. For details, please refer to [the "Third-party Verification" section](#).

For Showa Denko Materials' data for fiscal 2019 and before, details are disclosed in [Showa Denko Materials Sustainability Databook 2020](#) .

Showa Denko



		2017	2018	2019	2020	2021
Energy consumption (crude oil equivalent)	Ten thousand kl	158	147	146	142	135
Scope1 (energy source origin) ①	kt-CO ₂ e	2,901	2,955	3,001	2,979	2,911
Scope1 (non-energy source origin) ②	kt-CO ₂ e	100	96	91	41	46
Scope1 (6gass total) ③	kt-CO ₂ e	56	45	43	45	44
Scope1 (CH ₄)	kt	1	1	1	1	1
Scope1 (N ₂ O)	kt	6	5	5	5	5
Scope1 (PFC)	kt	26	25	27	35	33
Scope1 (HFC)	kt	23	14	10	9	11
Scope1 (SF ₆)	kt	0	0	0	0	0
Scope1 (NF ₃)	kt	0	0	0	0	0
Scope1 (total) ① + ② + ③	kt-CO ₂ e	3,056	3,095	3,135	3,064	3,001
Scope2 (energy source origin)	kt-CO ₂ e	597	322	284	236	282
Total (Scope1, Scope2)	kt-CO ₂ e	3,654	3,416	3,419	3,300	3,283
GHG emissions intensity (GHG emissions/Energy consumption (crude oil equivalent))	t-CO ₂ e/kl	2.42	2.43	2.42	2.39	2.43
Transportation sector's CO ₂ emissions	kt	24.6	23.1	20.6	19.0	19.3
Unit energy consumption rate for transport	kl per million ton-km	22.4	22.0	21.4	21.3	22.2
Freight ton-km	million ton-km	415	397	364	337	328

Notes

1.Scope1(CH₄) - Includes values less than 3kt that are not subject to warm-to-war method aggregation

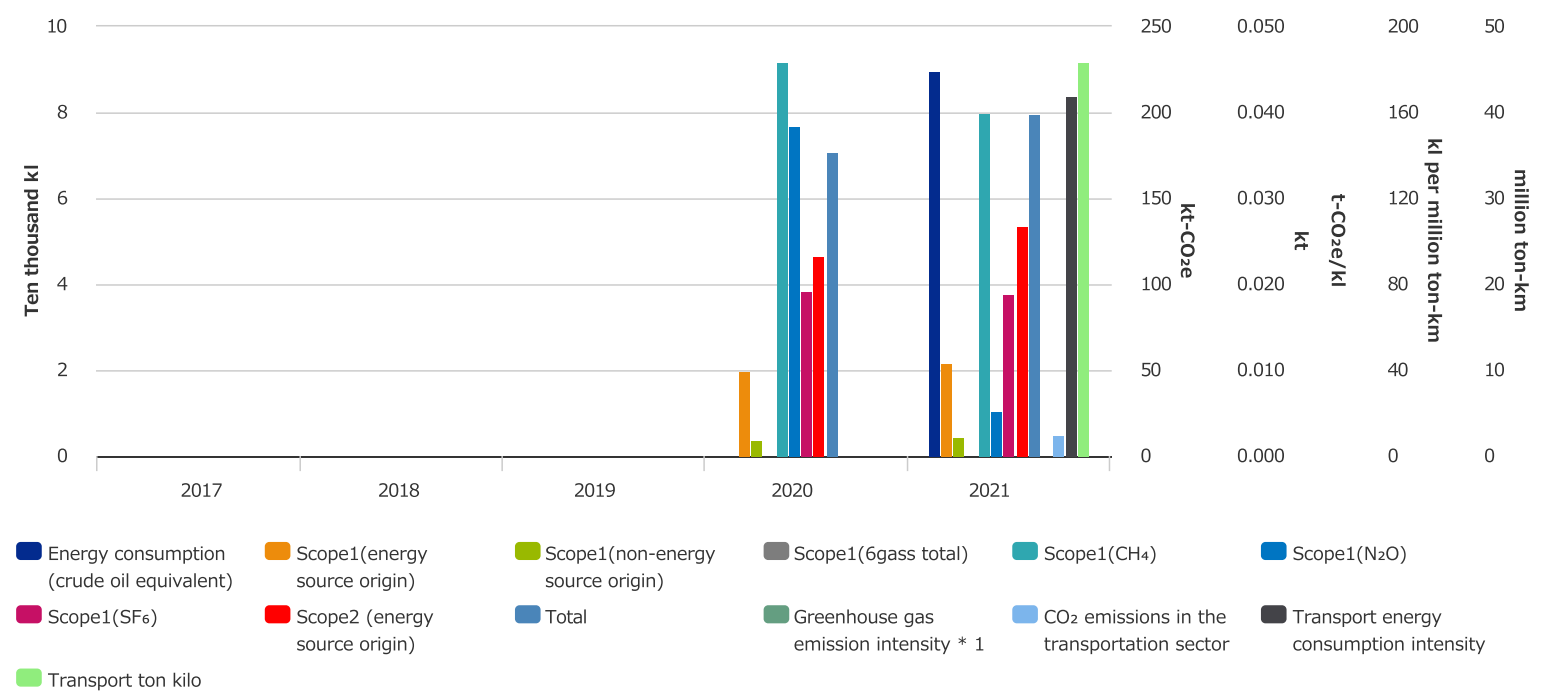
2.Scope1(N₂O) - Includes values less than 3kt that are not subject to warm-to-war method aggregation

3.GHG emissions intensity (GHG emissions/Energy consumption (crude oil equivalent)) - The greenhouse gas emission intensity is the value obtained by dividing the greenhouse gas emission amount by the energy consumption (crude oil equivalent).

4.If there is no note, Showa Denko is a domestic group connection (excluding Showa Denko Materials), and Showa Denko Materials is a single data.

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Showa Denko Materials



		2017	2018	2019	2020	2021
Energy consumption (crude oil equivalent)	Ten thousand kl	-	-	-	-	9
Scope1(energy source origin)	kt-CO2e	-	-	-	50	54
Scope1(non-energy source origin)	kt-CO2e	-	-	-	9.88	11.40
Scope1(6gass total)	kt-CO2e	-	-	-	0.10	0.11
Scope1(CH4)	kt	-	-	-	0	0
Scope1(N2O)	kt	-	-	-	0	0
Scope1(SF6)	kt	-	-	-	0	0
Scope2 (energy source origin)	kt-CO2e	-	-	-	117	134
Total	kt-CO2e	-	-	-	177	199
Greenhouse gas emission intensity * 1	t-CO2e/kl	-	-	-	-	-
CO2 emissions in the transportation sector	kt-CO2e	-	-	-	-	12
Transport energy consumption intensity	kl per million ton-km	-	-	-	-	168
Transport ton kilo	million ton-km	-	-	-	-	46

Notes

1.Scope1(CH4) - Includes values less than 3kt that are not subject to warm-to-war method aggregation

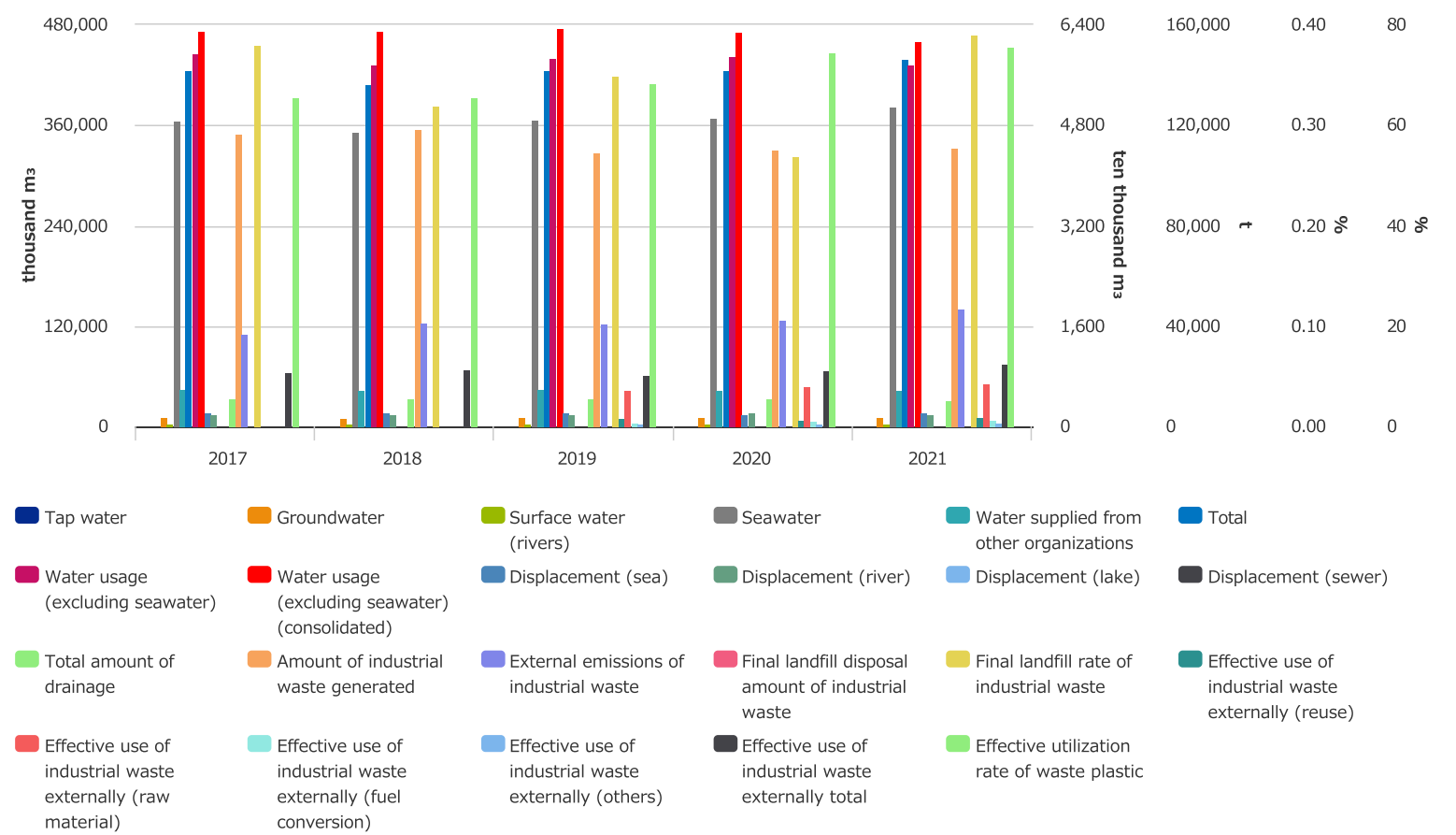
2.Scope1(N2O) - Includes values less than 3kt that are not subject to warm-to-war method aggregation

3.Greenhouse gas emission intensity * 1 - The greenhouse gas emission intensity is the value obtained by dividing the greenhouse gas emission amount by the energy consumption (crude oil equivalent).

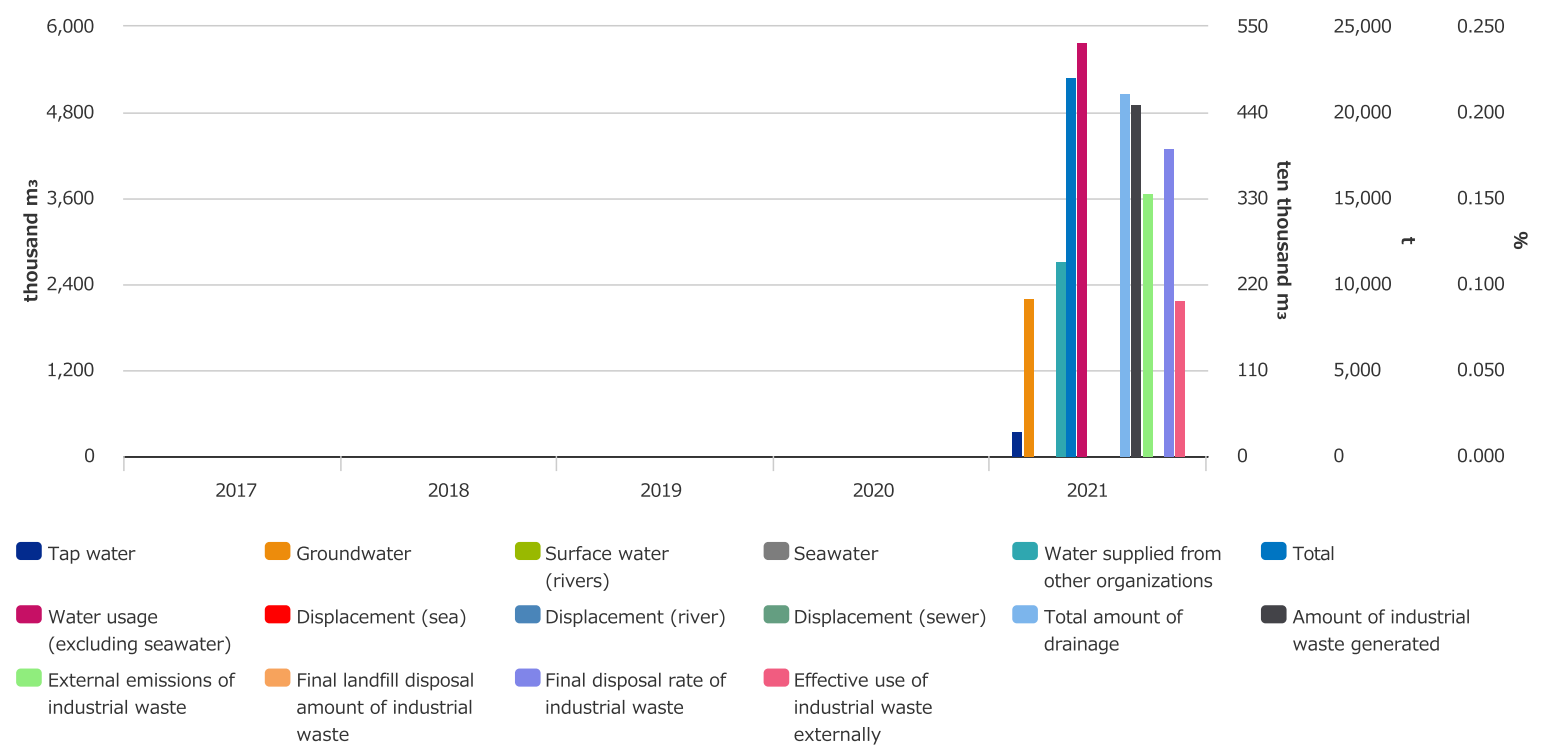
4.If there is no note, Showa Denko is a domestic group connection (excluding Showa Denko Materials), and Showa Denko Materials is a single data.

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Showa Denko



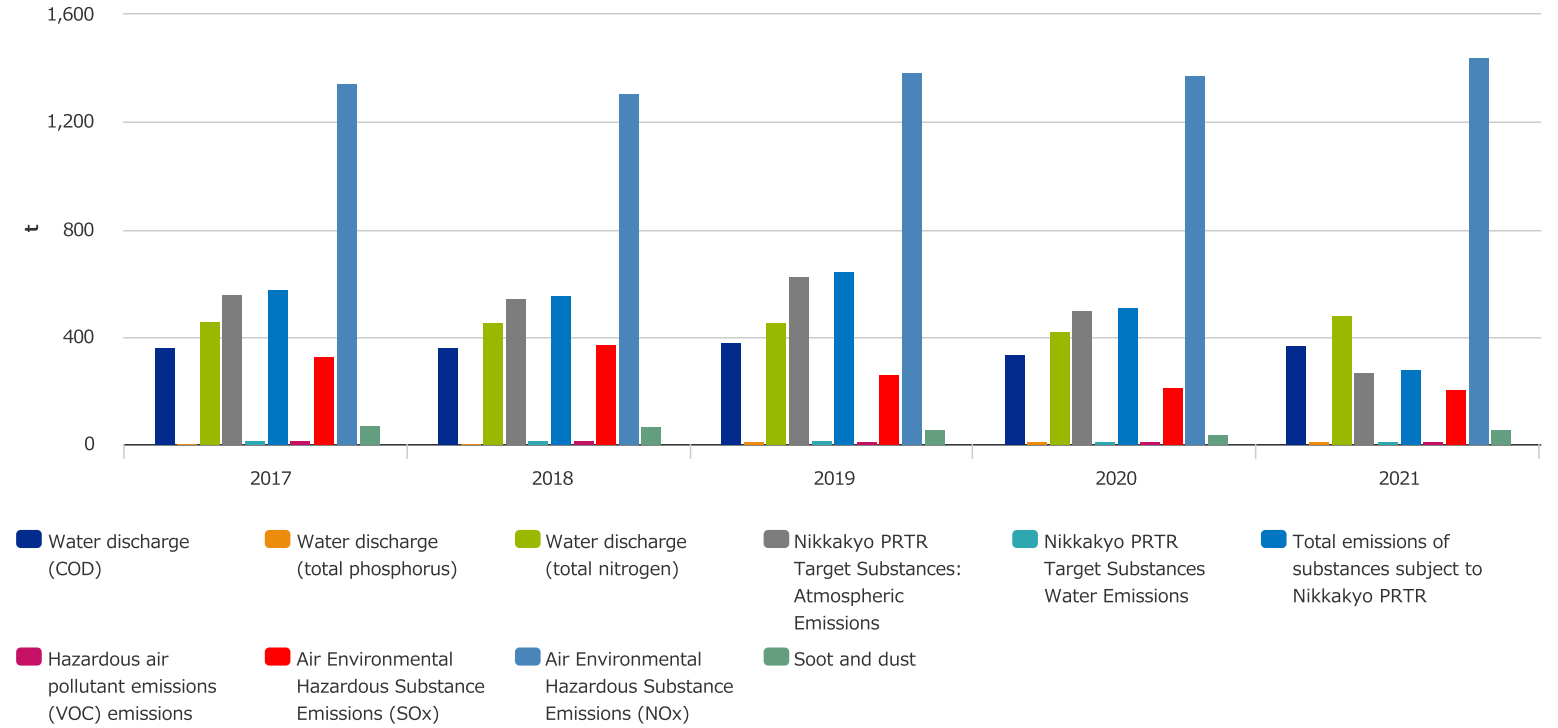
Showa Denko Materials



Notes
1.If there is no note, Showa Denko is a domestic group connection (excluding Showa Denko Materials), and Showa Denko Materials is a single data.

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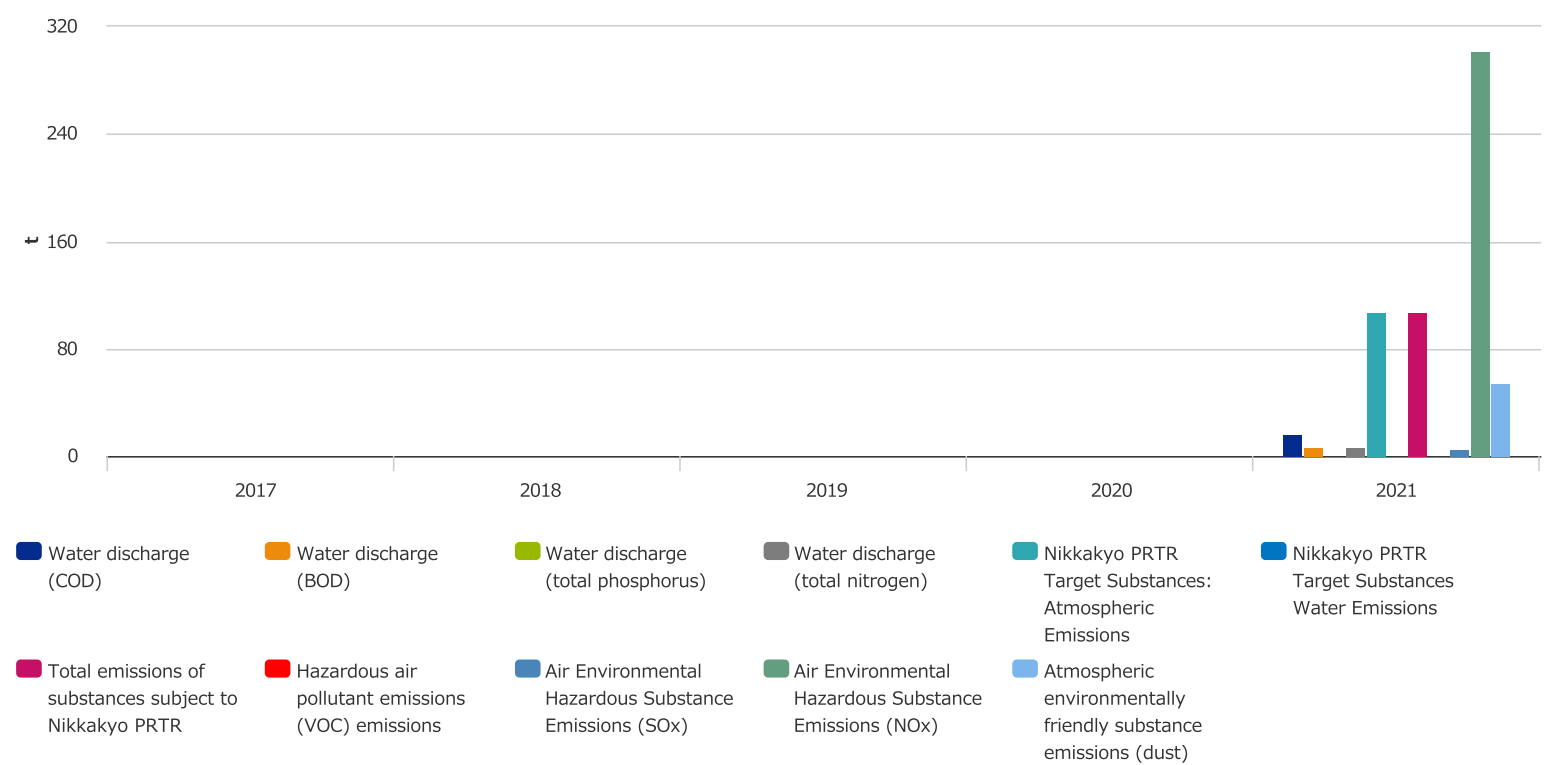
Showa Denko



		2017	2018	2019	2020	2021
Water discharge (COD)	t	364	365	380	338	370
Water discharge (total phosphorus)	t	8	8	9	9	10
Water discharge (total nitrogen)	t	459	457	452	422	481
Nikkakyo PRTR Target Substances: Atmospheric Emissions	t	561	542	628	500	268
Nikkakyo PRTR Target Substances Water Emissions	t	16	16	15	13	13
Total emissions of substances subject to Nikkakyo PRTR	t	577	558	643	513	280
Hazardous air pollutant emissions (VOC) emissions	t	15	17	13	13	13
Air Environmental Hazardous Substance Emissions (SOx)	t	330	376	266	215	207
Air Environmental Hazardous Substance Emissions (NOx)	t	1,345	1,310	1,384	1,375	1,446
Soot and dust	t	72	66	58	38	55

Notes
1.Water discharge (COD) - No discharge to sewer
2.Water discharge (total phosphorus) - No discharge to sewer
3.Water discharge (total nitrogen) - No discharge to sewer
4.If there is no note, Showa Denko is a domestic group connection (excluding Showa Denko Materials), and Showa Denko Materials is a single data.

Showa Denko Materials



		2017	2018	2019	2020	2021
Water discharge (COD)	t	-	-	-	-	17
Water discharge (BOD)	t	-	-	-	-	7
Water discharge (total phosphorus)	t	-	-	-	-	0
Water discharge (total nitrogen)	t	-	-	-	-	7
Nikkakyo PRTR Target Substances: Atmospheric Emissions	t	-	-	-	-	108
Nikkakyo PRTR Target Substances Water Emissions	t	-	-	-	-	0.00
Total emissions of substances subject to Nikkakyo PRTR	t	-	-	-	-	108
Hazardous air pollutant emissions (VOC) emissions	t	-	-	-	-	0
Air Environmental Hazardous Substance Emissions (SOx)	t	-	-	-	-	6
Air Environmental Hazardous Substance Emissions (NOx)	t	-	-	-	-	302
Atmospheric environmentally friendly substance emissions (dust)	t	-	-	-	-	55

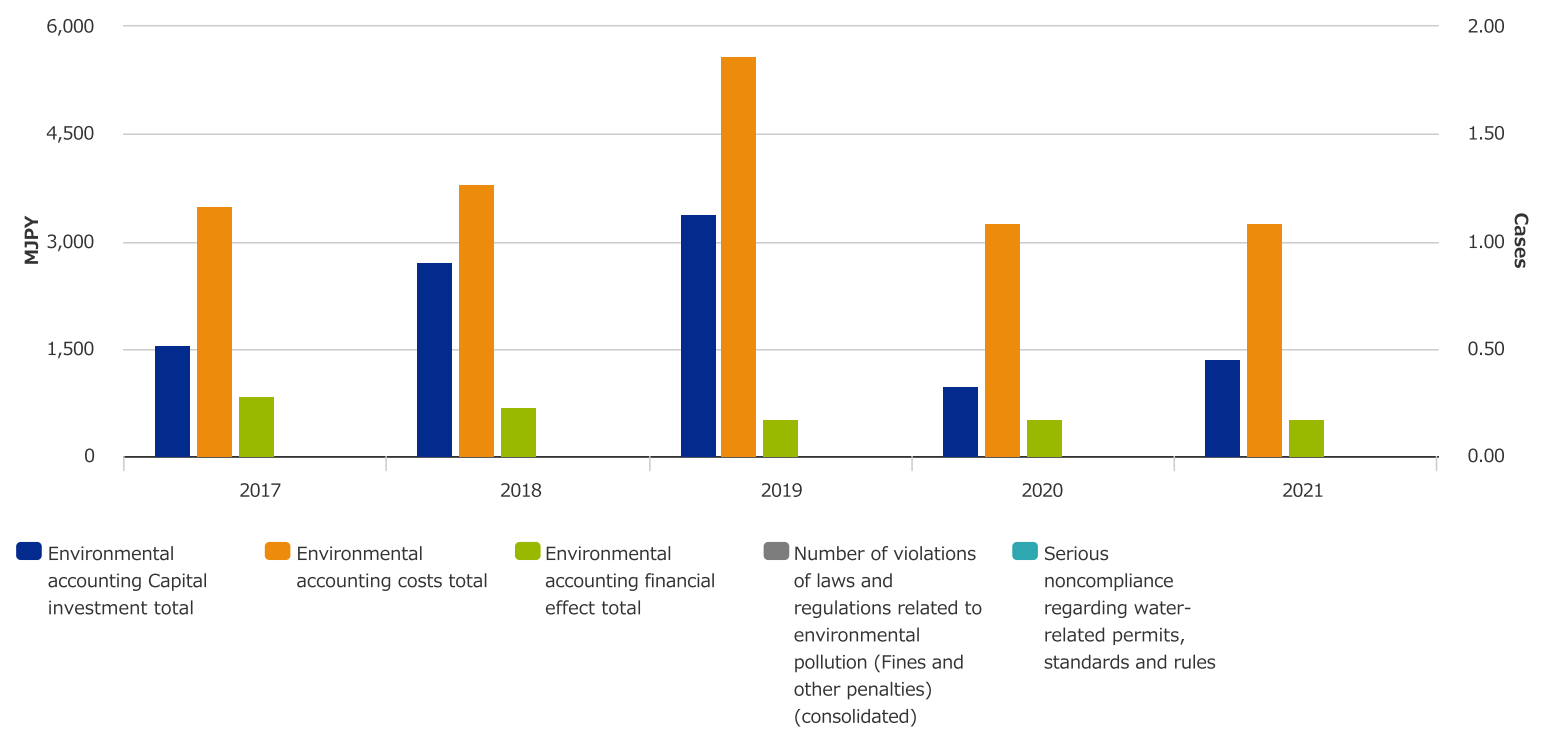
Notes

1.Water discharge (total phosphorus) - No discharge to sewer

2.Water discharge (total nitrogen) - No discharge to sewer

3.If there is no note, Showa Denko is a domestic group connection (excluding Showa Denko Materials), and Showa Denko Materials is a single data.

Showa Denko

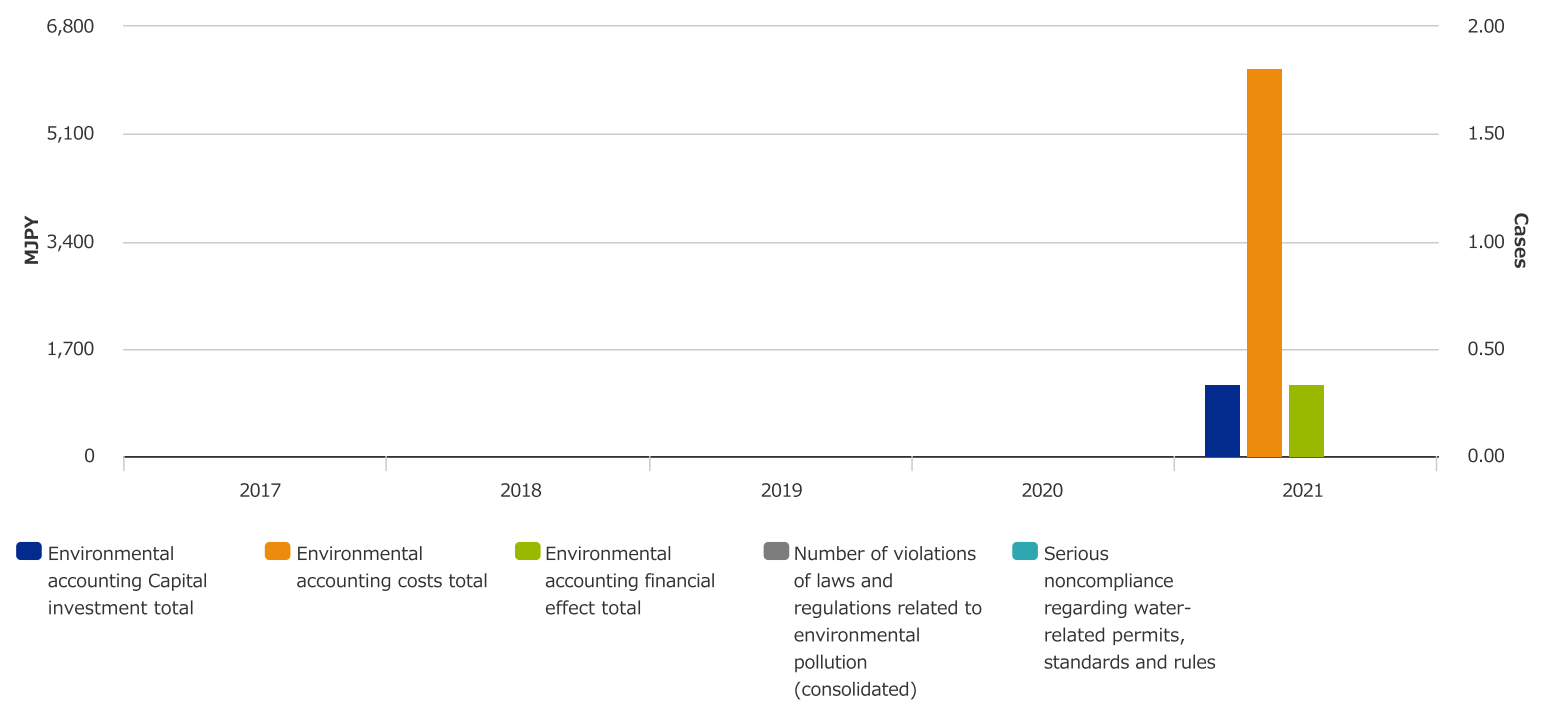


		2017	2018	2019	2020	2021
Environmental accounting Capital investment total	MJPY	1,560	2,708	3,392	982	1,376
Environmental accounting costs total	MJPY	3,488	3,815	5,590	3,270	3,253
Environmental accounting financial effect total	MJPY	851	697	524	533	532
Number of violations of laws and regulations related to environmental pollution (Fines and other penalties) (consolidated)	Cases	0	0	0	0	0
Serious noncompliance regarding water-related permits, standards and rules	Cases	0	0	0	0	0

Notes

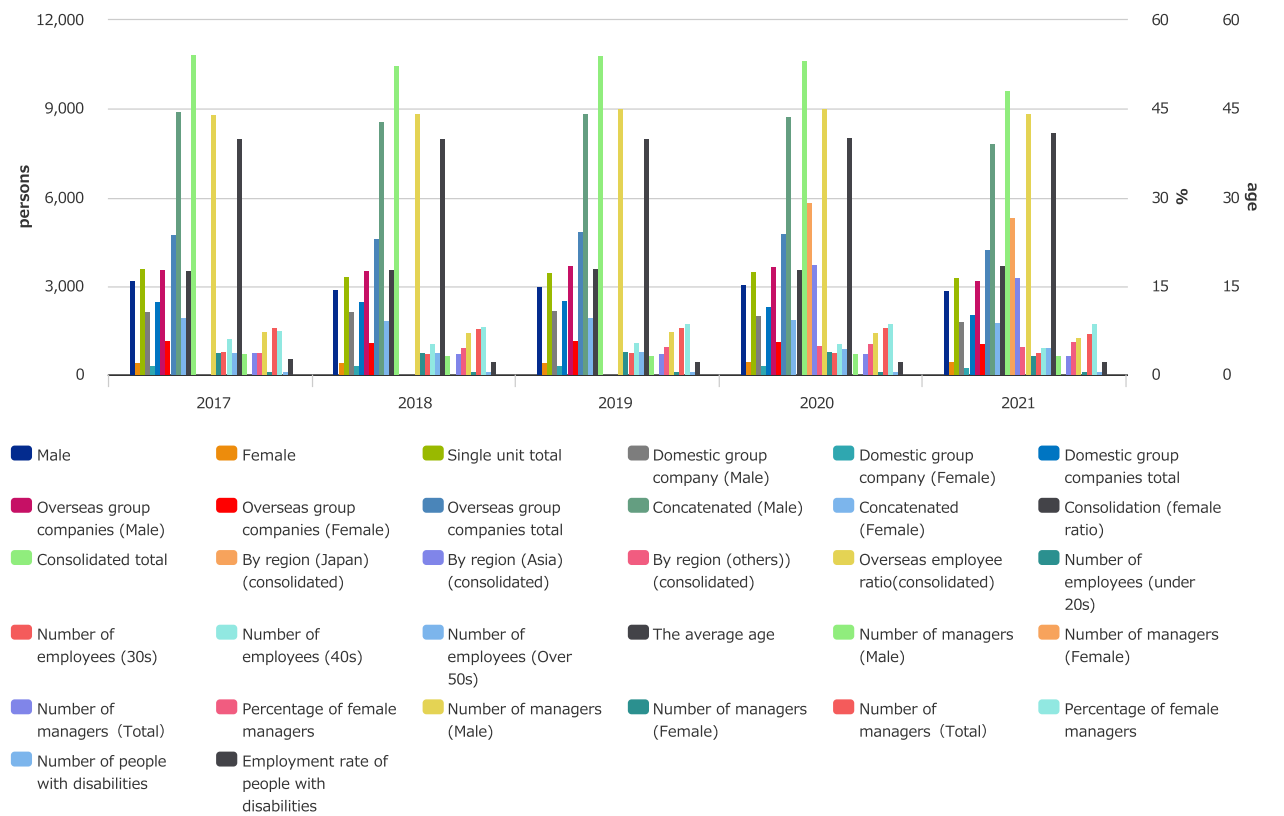
1.If there is no note, Showa Denko is a single data, and Showa Denko Materials is a single data.

Showa Denko Materials



		2017	2018	2019	2020	2021
Environmental accounting Capital investment total	MJPY	-	-	-	-	1,153
Environmental accounting costs total	MJPY	-	-	-	-	6,166
Environmental accounting financial effect total	MJPY	-	-	-	-	1,152
Number of violations of laws and regulations related to environmental pollution (consolidated)	Cases	-	-	-	-	0
Serious noncompliance regarding water-related permits, standards and rules	Cases	-	-	-	-	0

Notes
1.If there is no note, Showa Denko is a single data, and Showa Denko Materials is a single data.



		2017	2018	2019	2020	2021
Male	persons	3,198	2,919	2,995	3,060	2,852
Female	persons	418	428	442	455	446
Single unit total	persons	3,616	3,347	3,437	3,515	3,298
Domestic group company (Male)	persons	2,147	2,160	2,172	2,008	1,804
Domestic group company (Female)	persons	324	336	342	320	263
Domestic group companies total	persons	2,471	2,496	2,514	2,328	2,067
Overseas group companies (Male)	persons	3,599	3,526	3,695	3,673	3,192
Overseas group companies (Female)	persons	1,178	1,107	1,167	1,117	1,071
Overseas group companies total	persons	4,777	4,633	4,862	4,790	4,263
Concatenated (Male)	persons	8,944	8,605	8,862	8,741	7,848
Concatenated (Female)	persons	1,920	1,871	1,951	1,892	1,780
Consolidation (female ratio)	%	17.7	17.9	18.0	17.8	18.5
Consolidated total	persons	10,864	10,476	10,813	10,633	9,628
By region (Japan) (consolidated)	persons	-	-	-	5,843	5,365
By region (Asia) (consolidated)	persons	-	-	-	3,759	3,303
By region (others)) (consolidated)	persons	-	-	-	1,031	960
Overseas employee ratio(consolidated)	%	44.0	44.2	45.0	45.0	44.3
Number of employees (under 20s)	persons	777	747	784	795	673
Number of employees (30s)	persons	804	736	762	776	744
Number of employees (40s)	persons	1,240	1,067	1,101	1,057	940
Number of employees (Over 50s)	persons	764	767	790	887	936
The average age	age	40.0	39.9	40.1	40.2	41.1
Number of managers (Male)	persons	724	684	683	696	654
Number of managers (Female)	persons	28	33	35	39	39
Number of managers (Total)	persons	752	717	718	735	693
Percentage of female managers	%	3.7	4.6	4.9	5.3	5.6
Number of managers (Male)	persons	1,464	1,416	1,457	1,444	1,283
Number of managers (Female)	persons	121	127	137	136	120
Number of managers (Total)	persons	1,585	1,543	1,594	1,580	1,403
Percentage of female managers	%	7.6	8.2	8.6	8.6	8.6
Number of people with disabilities	persons	136	114	125	126	128
Employment rate of people with disabilities	%	2.64	2.39	2.28	2.29	2.36

Notes

1. By region (Asia) (consolidated) - Excluding Japan

2. Number of managers (Male) - Manager or above

3. Number of managers (Female) - Manager or above

4. Number of managers (Total) - Manager or above

5. Percentage of female managers - Manager or above

6. Number of managers (Male) - Manager or above

7. Number of managers (Female) - Manager or above

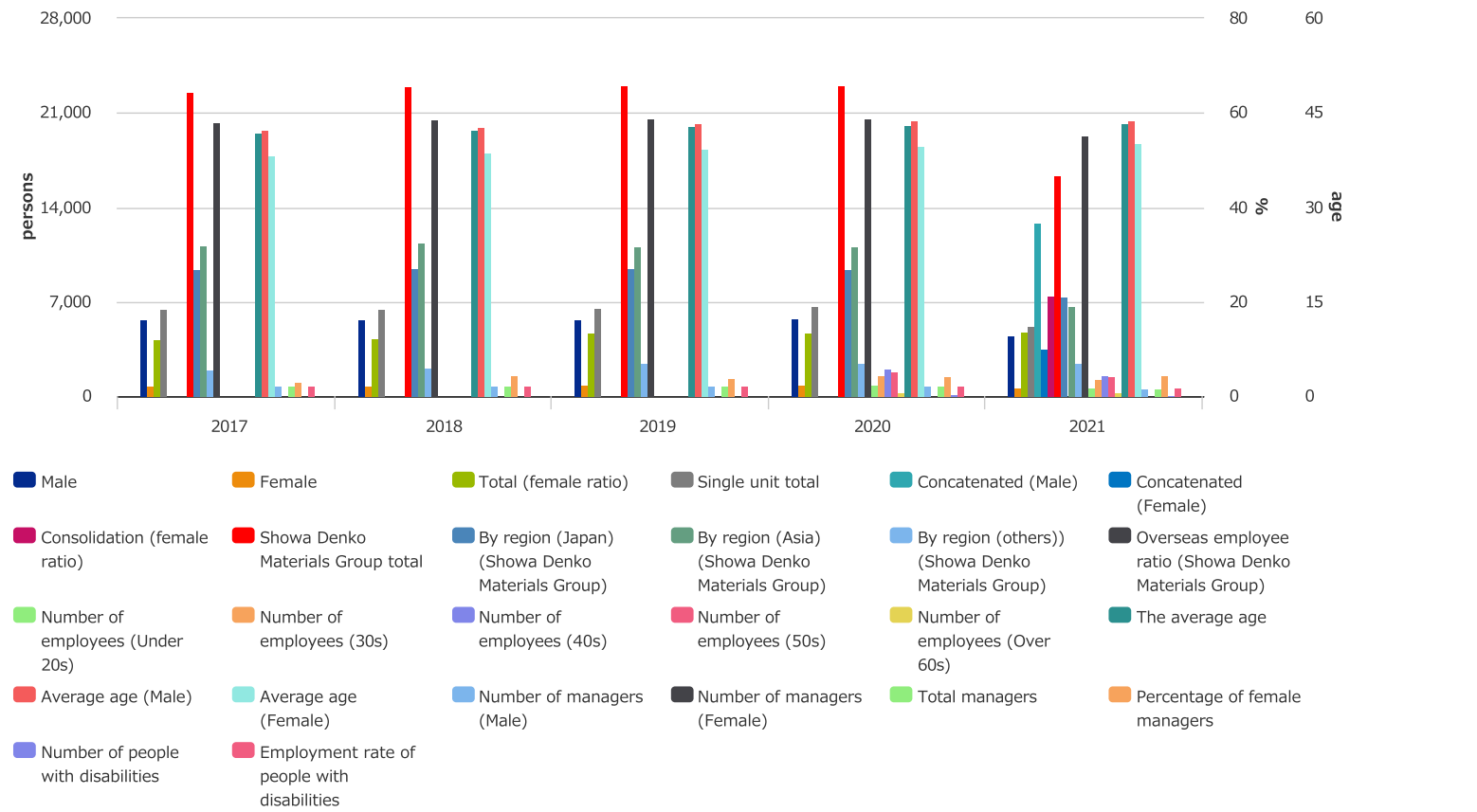
8. Number of managers (Total) - Manager or above

9. Percentage of female managers - Manager or above

10.If there is no note, it will be single data.

11.Showa Denko's domestic group and consolidated data do not include Showa Denko Materials' data.

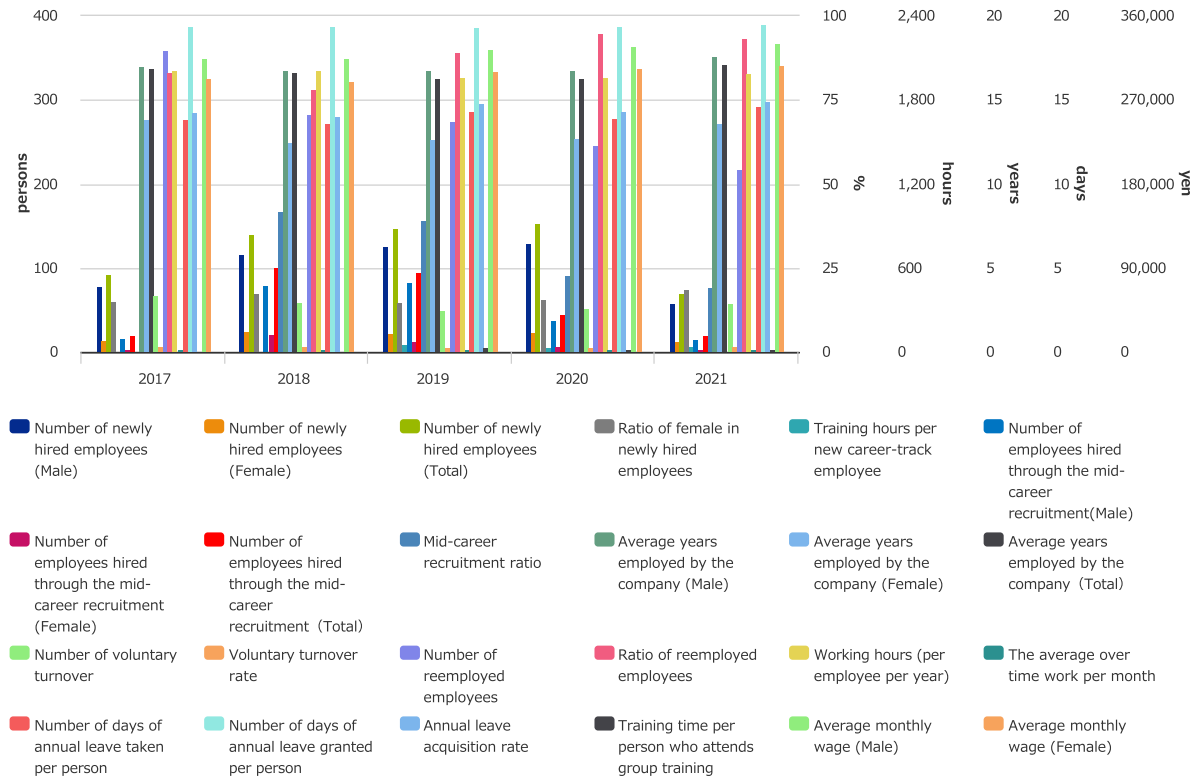
Showa Denko Materials



		2017	2018	2019	2020	2021
Male	persons	5,693	5,716	5,718	5,812	4,519
Female	persons	787	812	897	917	718
Total (female ratio)	%	12.1	12.4	13.6	13.6	13.7
Single unit total	persons	6,480	6,528	6,615	6,729	5,237
Concatenated (Male)	persons	-	-	-	-	12,909
Concatenated (Female)	persons	-	-	-	-	3,517
Consolidation (female ratio)	%	-	-	-	-	21.4
Showa Denko Materials Group total	persons	22,623	22,989	23,095	23,051	16,426
By region (Japan) (Showa Denko Materials Group)	persons	9,465	9,499	9,496	9,447	7,362
By region (Asia) (Showa Denko Materials Group)	persons	11,185	11,355	11,133	11,130	6,633
By region (others)) (Showa Denko Materials Group)	persons	1,973	2,135	2,466	2,474	2,431
Overseas employee ratio (Showa Denko Materials Group)	%	58.2	58.7	58.9	59.0	55.2
Number of employees (Under 20s)	persons	-	-	-	881	667
Number of employees (30s)	persons	-	-	-	1,604	1,286
Number of employees (40s)	persons	-	-	-	2,046	1,524
Number of employees (50s)	persons	-	-	-	1,869	1,510
Number of employees (Over 60s)	persons	-	-	-	329	250
The average age	age	41.9	42.3	42.9	43.2	43.3
Average age (Male)	age	42.4	42.8	43.4	43.7	43.8
Average age (Female)	age	38.4	38.8	39.3	39.8	40.2
Number of managers (Male)	persons	778	751	784	781	609
Number of managers (Female)	persons	25	35	33	34	28
Total managers	persons	803	786	817	815	637
Percentage of female managers	%	3.1	4.5	4.0	4.2	4.4
Number of people with disabilities	persons	-	-	-	170	141
Employment rate of people with disabilities	%	2.28	2.31	2.29	2.27	1.95

Notes

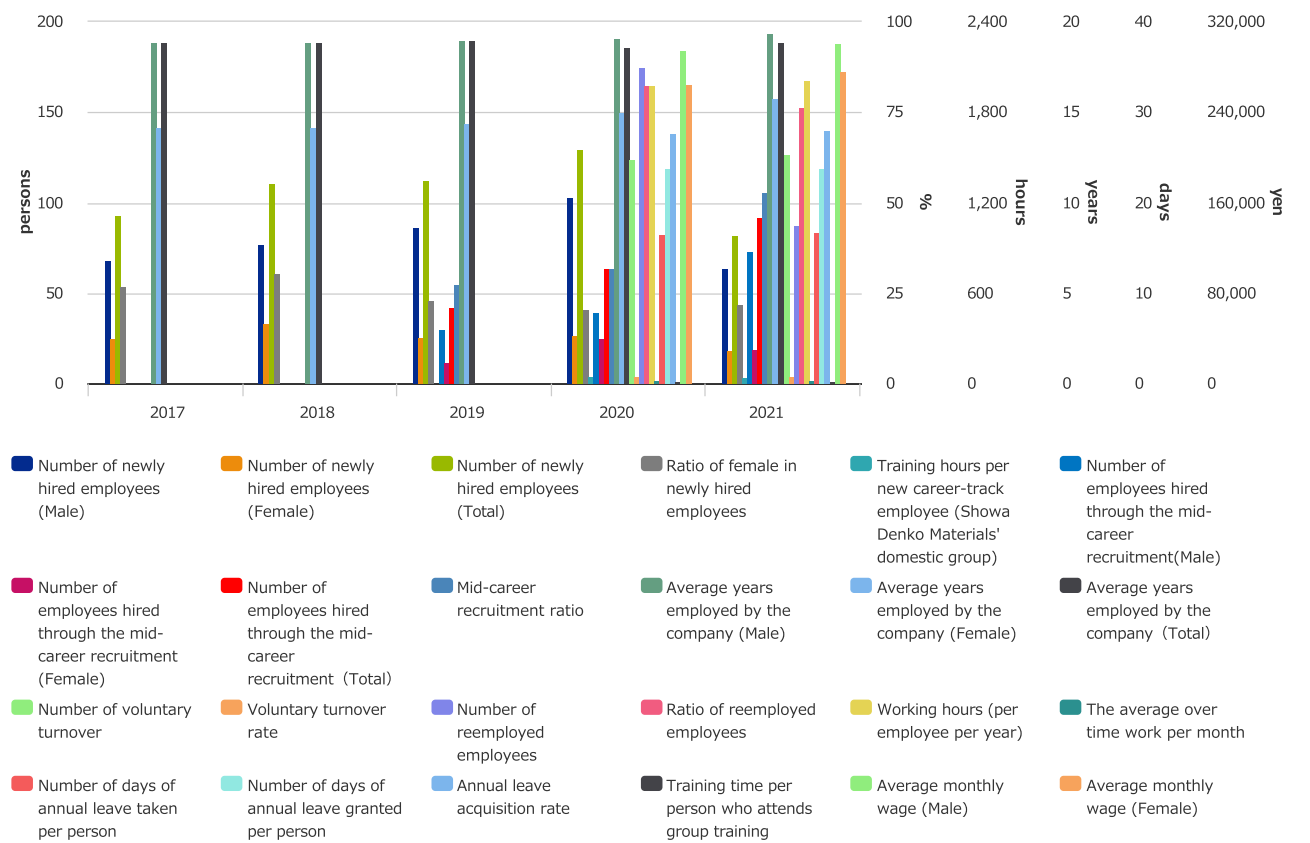
- 1.By region (Asia) (Showa Denko Materials Group) - Excluding Japan
- 2.Number of managers (Male) - Manager or above
- 3.Number of managers (Female) - Manager or above
- 4.Total managers - Manager or above
- 5.Percentage of female managers - Manager or above
- 6.If there is no note, it will be single data.
- 7.Showa Denko's domestic group and consolidated data do not include Showa Denko Materials' data.



Notes

1. Number of newly hired employees (Male) - Data revised back to 2018
2. Number of newly hired employees (Female) - Data revised back to 2018
3. Number of newly hired employees (Total) - Data revised back to 2018
4. Ratio of female in newly hired employees - Data revised back to 2018
5. Training hours per new career-track employee - Average hours of attendance among career-track employees at the head office (in their 1st to 5th years at the company)
6. Number of employees hired through the mid-career recruitment(Male) - Data revised back to 2018
7. Number of employees hired through the mid-career recruitment (Female) - Data revised back to 2018
8. Number of employees hired through the mid-career recruitment (Total) - Data revised back to 2018
9. Number of reemployed employees - Data revised back to 2018
- 10.Ratio of reemployed employees - Data revised back to 2018
- 11.Average monthly wage (Male) - Mager and minor career path
- 12.Average monthly wage (Female) - Mager and minor career path
- 13.If there is no note, it will be single data.
- 14.Showa Denko's domestic group and consolidated data do not include Showa Denko Materials' data.

Showa Denko Materials



Notes

1.Training hours per new career-track employee (Showa Denko Materials' domestic group) - Average hours of attendance among career-track employees at the head office.

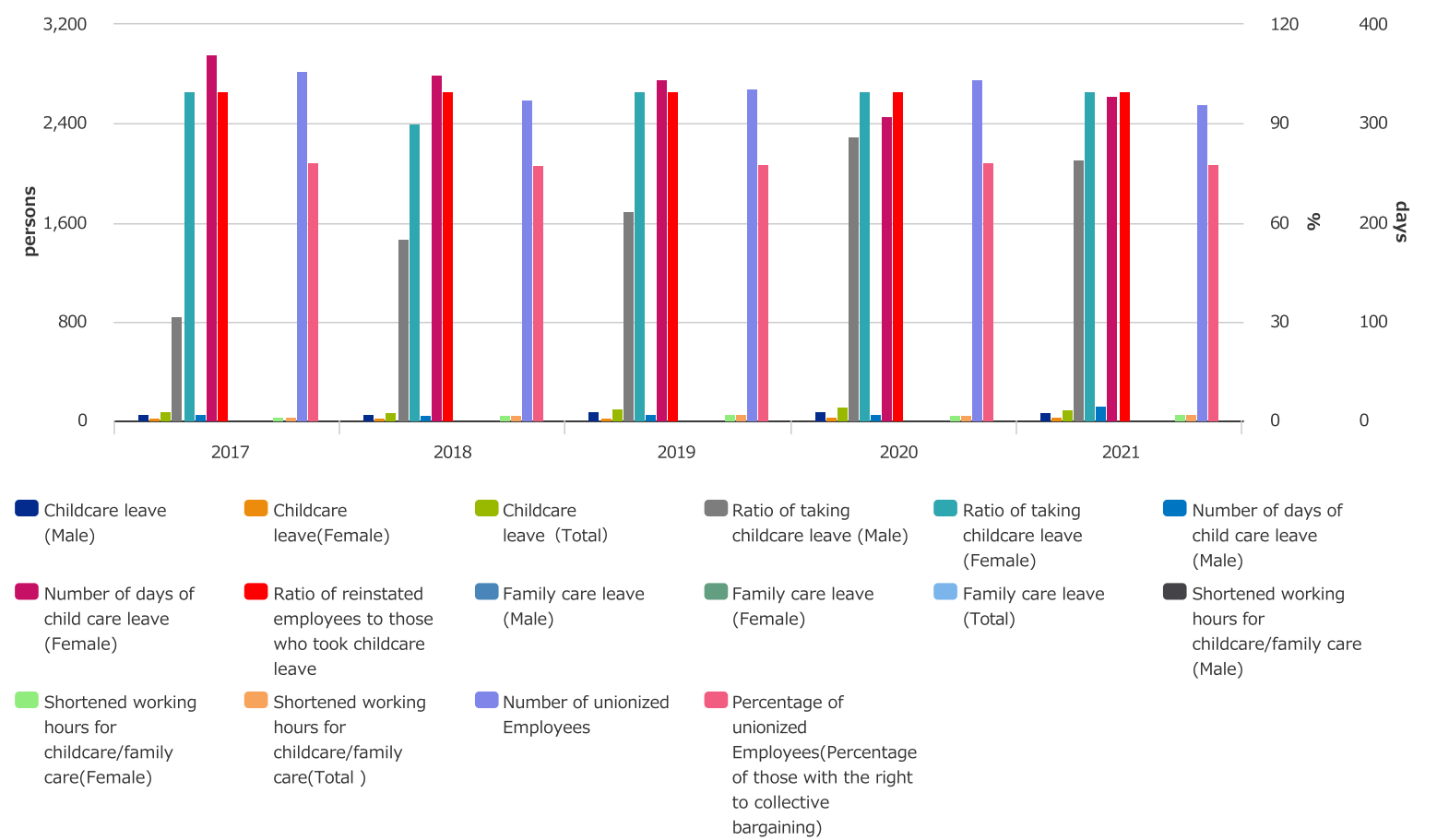
2.Average monthly wage (Male) - Mager and minor career path

3.Average monthly wage (Female) - Mager and minor career path

4.If there is no note, it will be single data.

5.Showa Denko's domestic group and consolidated data do not include Showa Denko Materials' data.

Showa Denko



		2017	2018	2019	2020	2021
Childcare leave (Male)	persons	56	52	74	82	64
Childcare leave(Female)	persons	24	18	24	32	30
Childcare leave (Total)	persons	80	70	98	107	94
Ratio of taking childcare leave (Male)	%	31.7	55.2	63.6	86.3	79.0
Ratio of taking childcare leave (Female)	%	100	90	100	100	100
Number of days of child care leave (Male)	days	7	6	7	7	15
Number of days of child care leave (Female)	days	371	350	345	307	329
Ratio of reinstated employees to those who took childcare leave	%	100	100	100	100	100
Family care leave (Male)	persons	2	0	0	0	0
Family care leave (Female)	persons	1	0	1	1	0
Family care leave (Total)	persons	3	0	1	1	0
Shortened working hours for childcare/family care (Male)	persons	0	0	0	0	3
Shortened working hours for childcare/family care(Female)	persons	33	45	57	41	53
Shortened working hours for childcare/family care(Total)	persons	33	45	57	41	56
Number of unionized Employees	persons	2,832	2,590	2,678	2,760	2,561
Percentage of unionized Employees(Percentage of those with the right to collective bargaining)	%	78.3	77.4	77.9	78.5	77.7

Notes

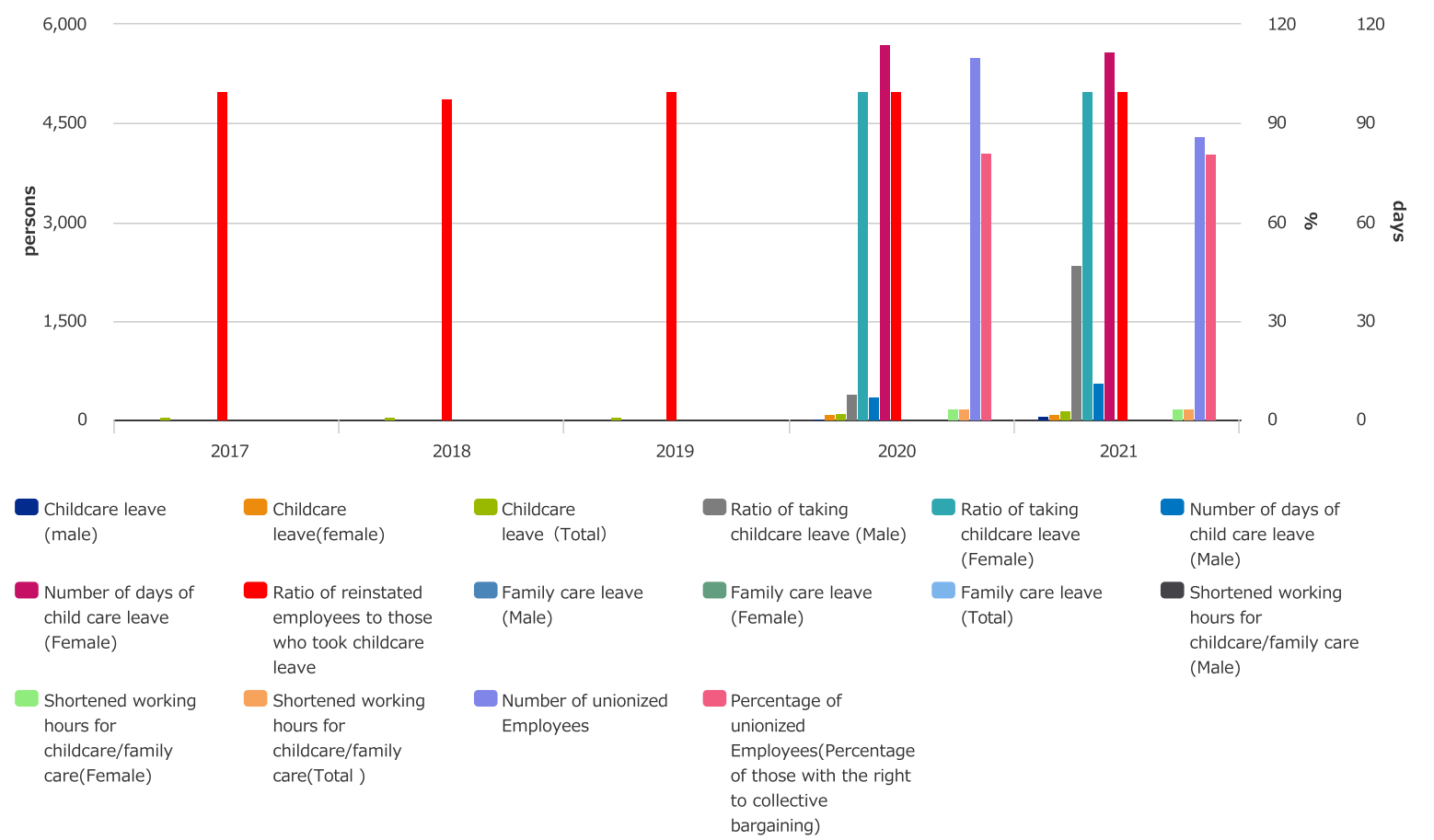
1.If there is no note, it will be single data.

2.Showa Denko's domestic group and consolidated data do not include Showa Denko Materials' data.

3.The number of employees taking childcare leave, the number of days taken, and the rate of taking childcare leave are counted including employees who have not born children during the year.

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Showa Denko Materials



		2017	2018	2019	2020	2021
Childcare leave (male)	persons	-	-	-	28	55
Childcare leave(female)	persons	-	-	-	84	89
Childcare leave (Total)	persons	40	43	46	112	144
Ratio of taking childcare leave (Male)	%	-	-	-	8.1	47.0
Ratio of taking childcare leave (Female)	%	-	-	-	100	100
Number of days of child care leave (Male)	days	-	-	-	7	12
Number of days of child care leave (Female)	days	-	-	-	114	112
Ratio of reinstated employees to those who took childcare leave	%	100	98	100	100	100
Family care leave (Male)	persons	-	-	-	4	0
Family care leave (Female)	persons	-	-	-	9	1
Family care leave (Total)	persons	-	-	-	13	1
Shortened working hours for childcare/family care (Male)	persons	-	-	-	3	3
Shortened working hours for childcare/family care(Female)	persons	-	-	-	158	174
Shortened working hours for childcare/family care(Total)	persons	-	-	-	161	177
Number of unionized Employees	persons	-	-	-	5,525	4,314
Percentage of unionized Employees(Percentage of those with the right to collective bargaining)	%	-	-	-	81.3	81.0

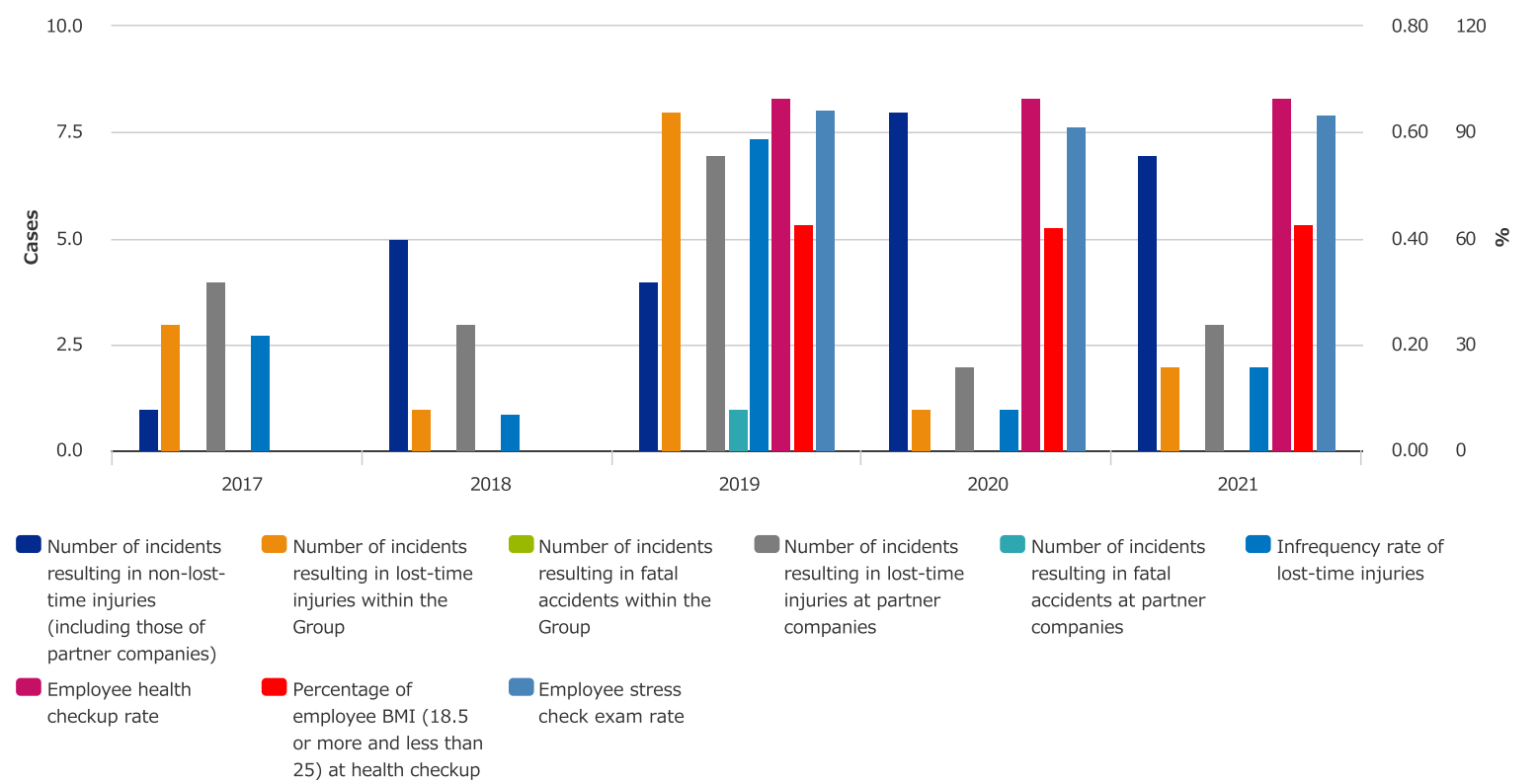
Notes

1.If there is no note, it will be single data.

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Showa Denko



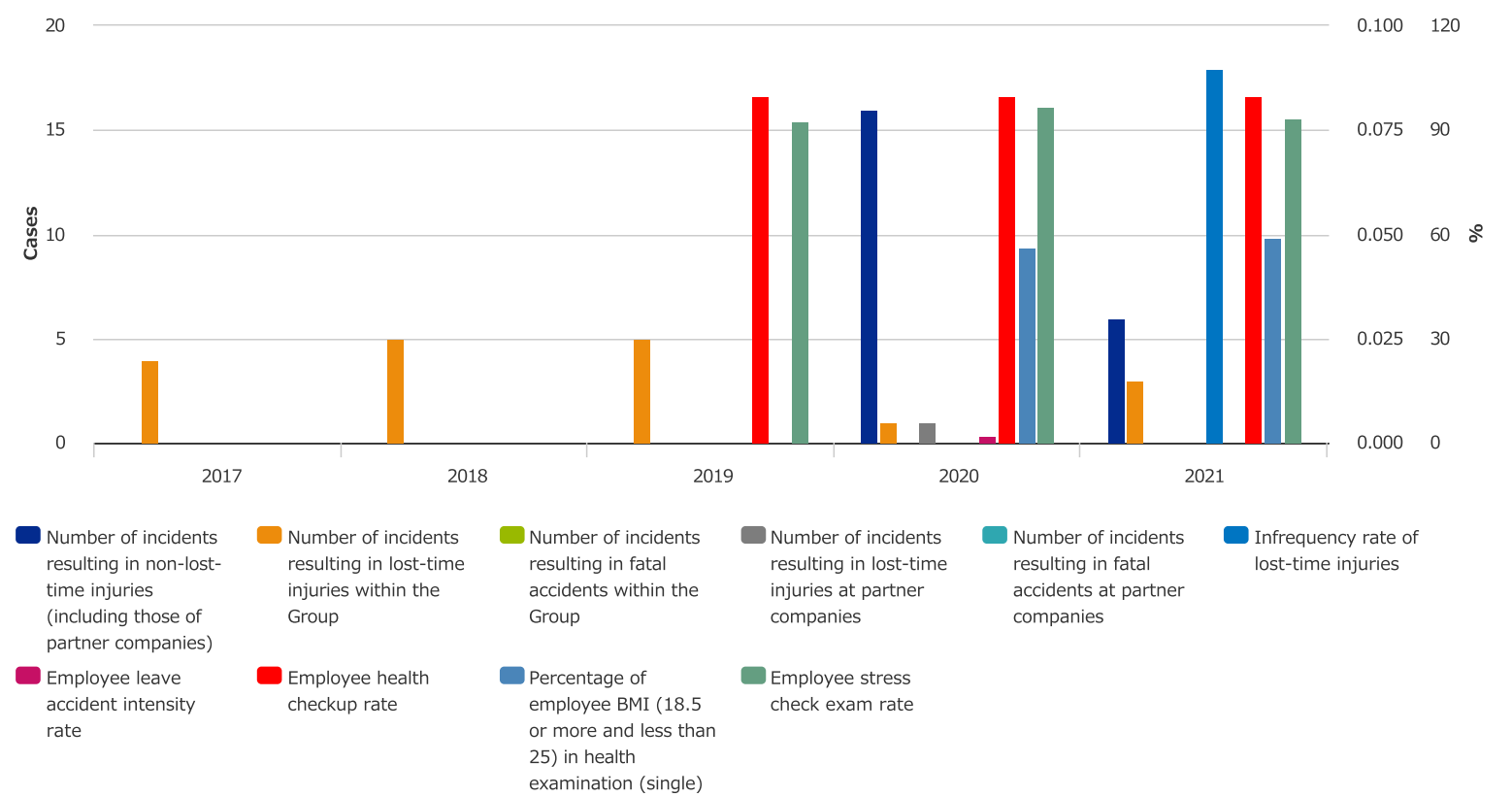
		2017	2018	2019	2020	2021
Number of incidents resulting in non-lost-time injuries (including those of partner companies)	Cases	1	5	4	8	7
Number of incidents resulting in lost-time injuries within the Group	Cases	3	1	8	1	2
Number of incidents resulting in fatal accidents within the Group	Cases	0	0	0	0	0
Number of incidents resulting in lost-time injuries at partner companies	Cases	4	3	7	2	3
Number of incidents resulting in fatal accidents at partner companies	Cases	0	0	1	0	0
Infrequency rate of lost-time injuries		0.22	0.07	0.59	0.08	0.16
Employee health checkup rate	%	-	-	100	100	100
Percentage of employee BMI (18.5 or more and less than 25) at health checkup	%	-	-	64.1	63.3	63.8
Employee stress check exam rate	%	-	-	96.5	92.0	95.1

Notes

1.If there is no note, the data will be for domestic group consolidation.

2.Showa Denko's domestic group and consolidated data do not include Showa Denko Materials' data.

Showa Denko Materials



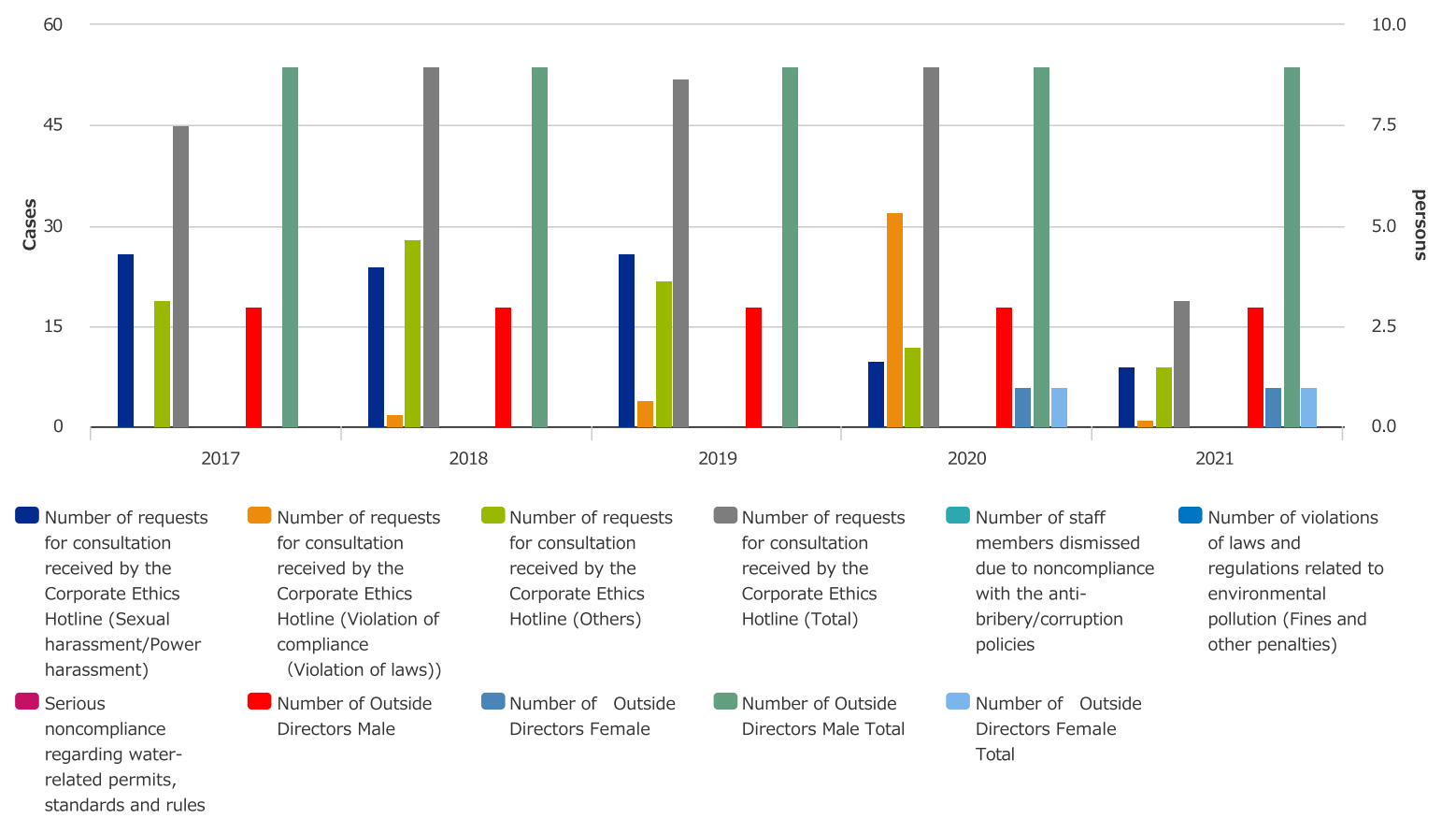
		2017	2018	2019	2020	2021
Number of incidents resulting in non-lost-time injuries (including those of partner companies)	Cases	-	-	-	16	6
Number of incidents resulting in lost-time injuries within the Group	Cases	4	5	5	1	3
Number of incidents resulting in fatal accidents within the Group	Cases	-	-	-	0	0
Number of incidents resulting in lost-time injuries at partner companies	Cases	-	-	-	1	0
Number of incidents resulting in fatal accidents at partner companies	Cases	-	-	-	0	0
Infrequency rate of lost-time injuries		-	-	-	0.00	0.09
Employee leave accident intensity rate		-	-	-	0.00	0.00
Employee health checkup rate	%	-	-	100	100	100
Percentage of employee BMI (18.5 or more and less than 25) in health examination (single)	%	-	-	-	56.5	59.0
Employee stress check exam rate	%	-	-	92.6	97.0	93.6

Notes

1.If there is no note, the data will be for domestic group consolidation.

2.Showa Denko's domestic group and consolidated data do not include Showa Denko Materials' data.

Showa Denko



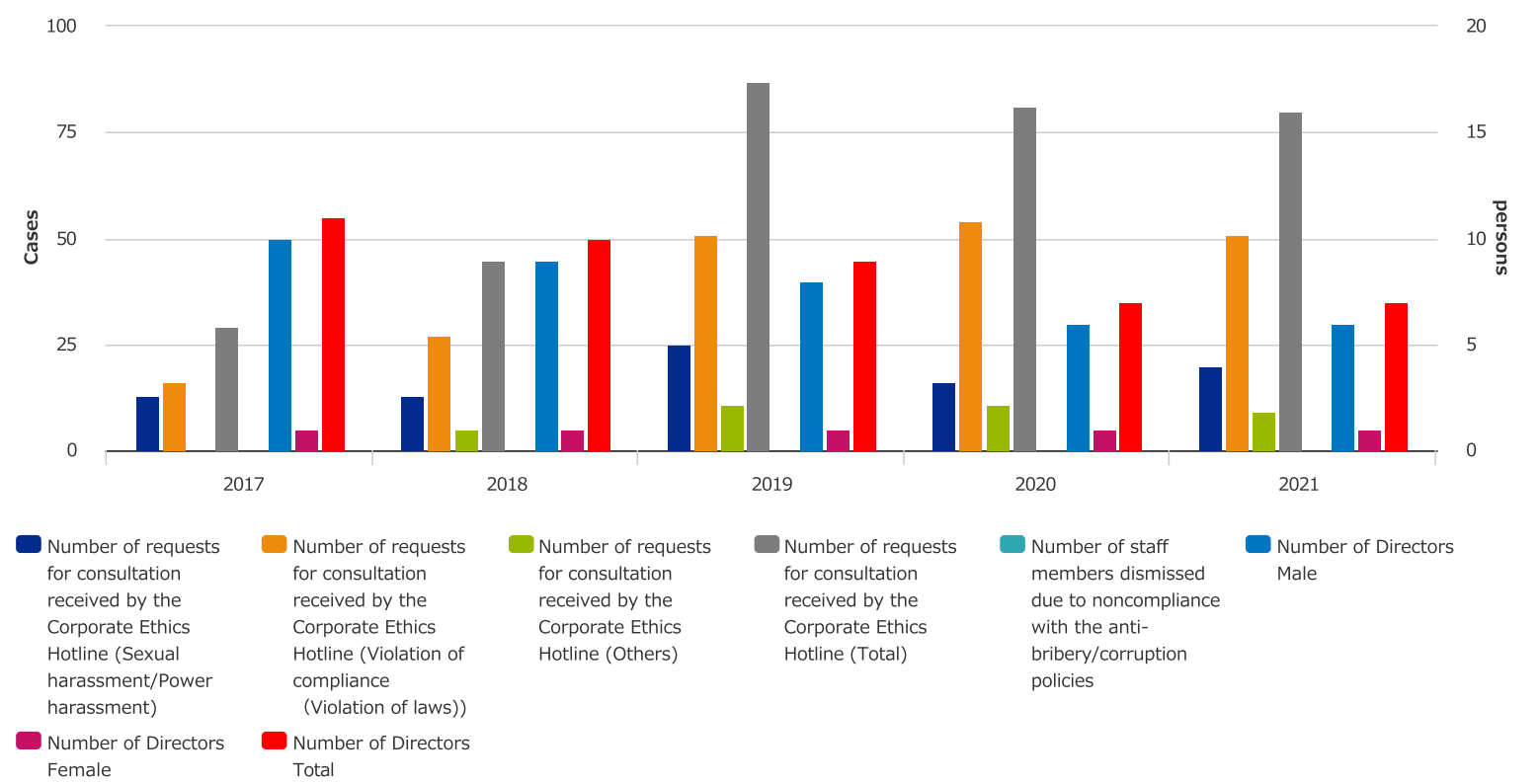
		2017	2018	2019	2020	2021
Number of requests for consultation received by the Corporate Ethics Hotline (Sexual harassment/Power harassment)	Cases	26	24	26	10	9
Number of requests for consultation received by the Corporate Ethics Hotline (Violation of compliance (Violation of laws))	Cases	0	2	4	32	1
Number of requests for consultation received by the Corporate Ethics Hotline (Others)	Cases	19	28	22	12	9
Number of requests for consultation received by the Corporate Ethics Hotline (Total)	Cases	45	54	52	54	19
Number of staff members dismissed due to noncompliance with the anti-bribery/corruption policies	persons	0	0	0	0	0
Number of violations of laws and regulations related to environmental pollution (Fines and other penalties)	Cases	0	0	0	0	0
Serious noncompliance regarding water-related permits, standards and rules	Cases	0	0	0	0	0
Number of Outside Directors Male	persons	3	3	3	3	3
Number of Outside Directors Female	persons	0	0	0	1	1
Number of Outside Directors Male Total	persons	9	9	9	9	9
Number of Outside Directors Female Total	persons	0	0	0	1	1

Notes

1.If there is no note, it will be concatenated data.

2.The number of outside directors and the number of directors are data only for the relevant company. The number of directors includes outside directors.

Showa Denko Materials



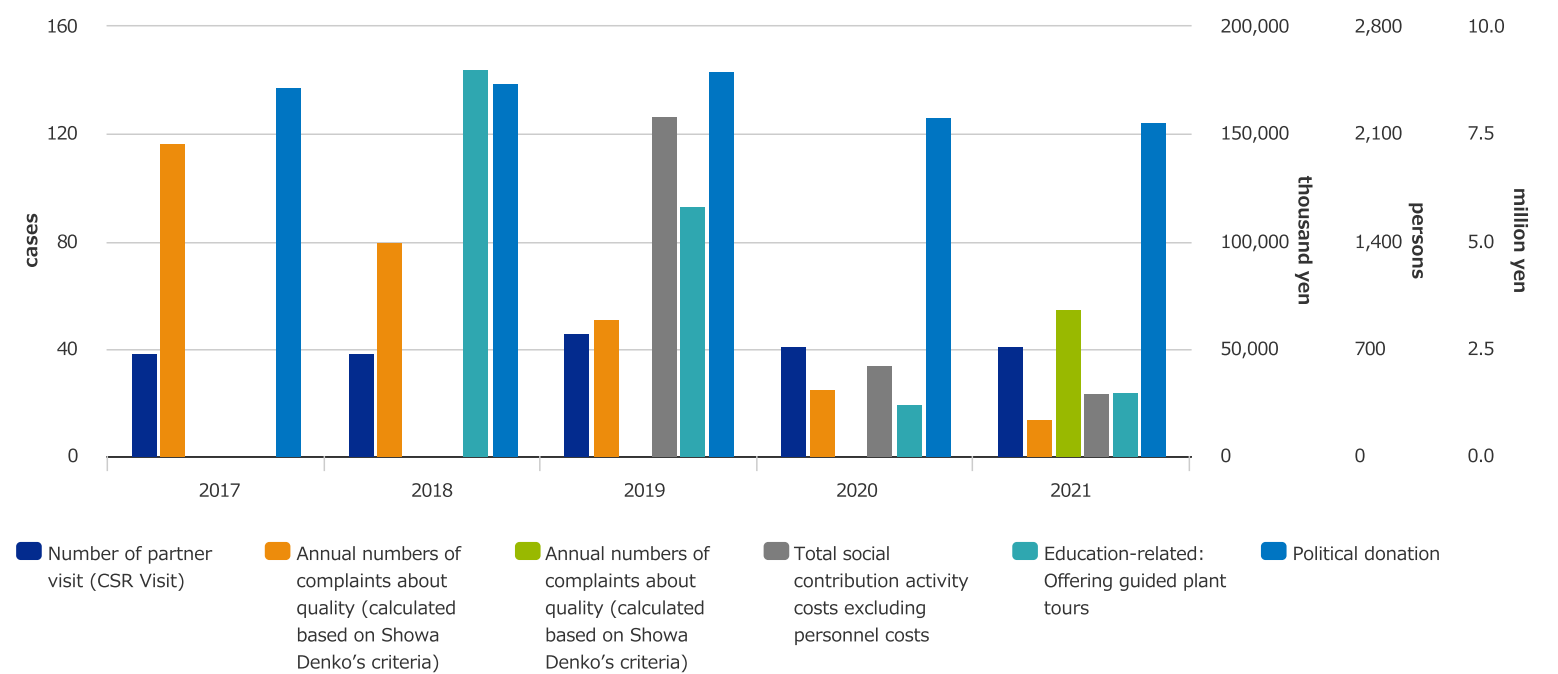
		2017	2018	2019	2020	2021
Number of requests for consultation received by the Corporate Ethics Hotline (Sexual harassment/Power harassment)	Cases	13	13	25	16	20
Number of requests for consultation received by the Corporate Ethics Hotline (Violation of compliance (Violation of laws))	Cases	16	27	51	54	51
Number of requests for consultation received by the Corporate Ethics Hotline (Others)	Cases	0	5	11	11	9
Number of requests for consultation received by the Corporate Ethics Hotline (Total)	Cases	29	45	87	81	80
Number of staff members dismissed due to noncompliance with the anti-bribery/corruption policies	persons	0	0	0	0	0
Number of Directors Male	persons	10	9	8	6	6
Number of Directors Female	persons	1	1	1	1	1
Number of Directors Total	persons	11	10	9	7	7

Notes

1.If there is no note, it will be concatenated data.

2.The number of outside directors and the number of directors are data only for the relevant company. The number of directors includes outside directors.

Showa Denko



		2017	2018	2019	2020	2021
Number of partner visit (CSR Visit)	cases	39	39	46	41	41
Annual numbers of complaints about quality (calculated based on Showa Denko's criteria)	cases	117	80	51	25	14
Annual numbers of complaints about quality (calculated based on Showa Denko's criteria)	cases	-	-	-	-	55
Total social contribution activity costs excluding personnel costs	thousand yen	-	-	158,882	43,089	29,591
Education-related: Offering guided plant tours	persons	-	2,522	1,628	346	424
Political donation	million yen	8.6	8.7	9.0	7.9	7.8

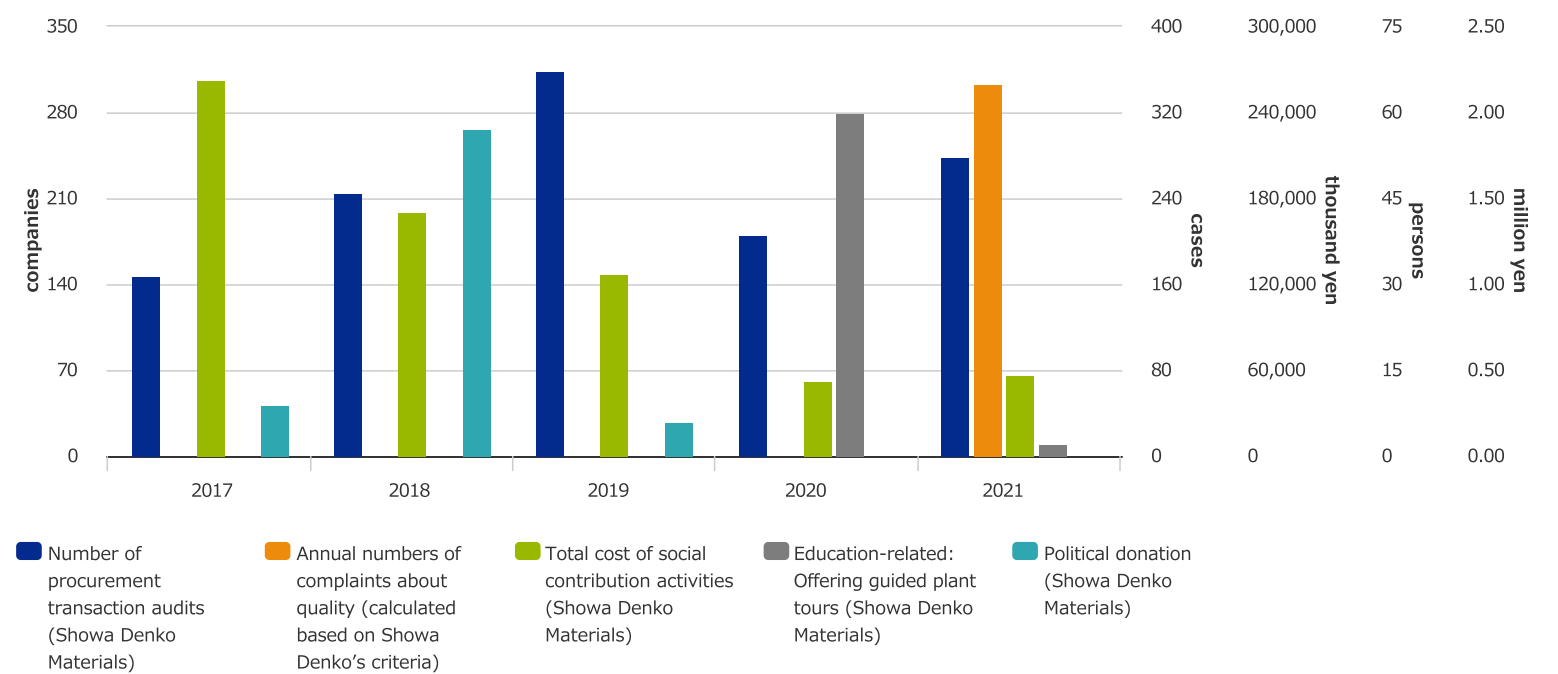
Notes

1.If there is no note, the data will be for domestic group consolidation.

2.Showa Denko's domestic group and consolidated data do not include Showa Denko Materials' data.

3.Social contribution activity costs were calculated based on the Keidanren standard. The cost of Showa Denko in 2019 has been retroactively revised.

Showa Denko Materials



		2017	2018	2019	2020	2021
Number of procurement transaction audits (Showa Denko Materials)	companies	147	215	314	181	245
Annual numbers of complaints about quality (calculated based on Showa Denko's criteria)	cases	-	-	-	-	346
Total cost of social contribution activities (Showa Denko Materials)	thousand yen	262,805	170,730	127,642	52,732	57,312
Education-related: Offering guided plant tours (Showa Denko Materials)	persons	-	-	-	60	2
Political donation (Showa Denko Materials)	million yen	0.3	1.9	0.2	0.0	0.0

Notes

1.If there is no note, the data will be for domestic group consolidation.

2.Showa Denko's domestic group and consolidated data do not include Showa Denko Materials' data.

3.Social contribution activity costs were calculated based on the Keidanren standard. The cost of Showa Denko in 2019 has been retroactively revised.

Editorial Policies/ Report Scope

Editorial policies

In this CSR section of Showa Denko's official website, we are committed to posting information about the Showa Denko Group's initiatives including those for the environment, society and governance (ESG) and showcasing the Group's ideas, policies, systems, activity details and numerical data in an exhaustive manner.

In our integrated report (Showa Denko Report), we publish both financial and nonfinancial information to help our stakeholders understand the Showa Denko Group's value creation story. We invite you to read this report along with the CSR section of the website.

Related link [Integrated report "SHOWA DENKO Report"](#)

Report scope

Publication date

As for sustainability information (in English), we made an annual update on August 31, 2022 to disclose the actual results for 2021. In order to provide our stakeholders with the latest information, we will continue to update the information from time to time in and after August 2022 as well.

Period covered by this report

This report covers information for the period from January 1 to December 31, 2021, with some information also provided for April 1, 2021 to March 31, 2022.

Organizations covered by this report

Showa Denko made Showa Denko Materials a consolidated subsidiary in 2020 and our current sustainability information includes some pertaining to Showa Denko Materials. For more information about this subsidiary, please also refer to the company's official website.

"The Showa Denko Group" or "the Group" as used in the text of this report refers to the entire Showa Denko Group including Showa Denko Materials, while we use "Showa Denko" to refer to Showa Denko K.K. on an unconsolidated basis and "Showa Denko Materials" to refer to Showa Denko Materials Co., Ltd. on an unconsolidated basis.

Related link [List of Data Collection Boundaries](#)

Related link [Showa Denko Materials' website \(Sustainability\)](#)

Third-party certification of the performance data

Our environment- and safety-related performance data are annually certified by a third party.

Related link [Verification report by a third party](#)



Prepared by
Sustainability Department, Showa Denko K.K.
13-9, Shiba Daimon 1-chome,
Minato-ku, Tokyo 105-8518, Japan
<https://www.sdk.co.jp/english/contact.html>

Third-party Verification

We receive third-party verification for Showa Denko's environment- and safety-related data from SGS Japan Inc. in July 2022.



[Third-party Verification Report](#) (299KB)

GRI Sustainability Reporting Guideline

Our website refers to "GRI Sustainability Reporting Standards 2016". (As of September 2022)

Related documents

- [Integrated Report "SHOWA DENKO Report 2022"](#) (8.1MB)
- [113th Securities Report \(Japanese only\)](#) (1.7MB)
- [Corporate Governance Basic Policies](#) (115KB)
- [Corporate Governance Report \(Last updated: March 31, 2022\)](#) (959KB)
- [Showa Denko Group Sustainable Procurement Guidelines](#) (316KB)
- [SHOWA DENKO FINANCIAL REPORT 2021](#) (802KB)

GRI 102:General Disclosures

Indicator		References (As of September 2022)
102-1	Name of the organization	Profile
102-2	Activities, brands, products, and services	Profile Company History Business Segments Showa Denko Group's Technological Lineage Products
102-3	Location of headquarters	Profile
102-4	Location of operations	Profile Locations (SHOWA DENKO K.K.) Locations (Subsidiaries / Affiliates (Japan)) Locations (Subsidiaries / Affiliates (Overseas))
102-5	Ownership and legal form	Profile

Indicator		References (As of September 2022)
102-6	Markets served	Profile Locations (SHOWA DENKO K.K.) Locations (Subsidiaries / Affiliates (Japan)) Locations (Subsidiaries / Affiliates (Overseas))
102-7	Scale of the organization	Profile Locations (SHOWA DENKO K.K.) Subsidiaries / Affiliates(Japan) Subsidiaries / Affiliates(Overseas) Performance Trends (Tool for financial analysis) Financial Results Basic Stock Information Financial Report 2021: Financial Data (P.10) □
102-8	Information on employees and other workers	ESG Performance Data (Society: Number of employees) Securities Report: 5 Employees (Japanese only) (P.11) □
102-9	Supply chain	Sustainable procurement SHOWA DENKO Report 2022: Sustainable Procurement (P.68) □
102-10	Significant changes to the organization and its supply chain	News Releases in 2022: Showa Denko Signs Agreement on Simplified Absorption-type Company Split for Graphite Electrode Business Showa Denko Decides on Absorption-type Merger & Company Split, Trade Name Change, and Partial Amendment to Articles of Incorporation to Prepare for Its Transformation into Holding Company Structure
102-11	Precautionary Principle or approach	Risk Management
102-12	External initiatives	Participation in Initiatives

Indicator		References (As of September 2022)
102-13	Membership of associations	Participation in Initiatives

2.Strategy






Indicator		References
102-14	Statement from senior decision-maker	Message from CEO
102-15	Key impacts, risks, and opportunities	Measures against Climate Change (Disclosure in Line with TCFD) Risk Management Financial Report 2021: Risk Factors (P.8)







3.Ethics and Integrity

Indicator		References
102-16	Values, principles, standards, and norms of behavior	Corporate philosophy Our Code of Conduct
102-17	Mechanisms for advice and concerns about ethics	Corporate Ethics Hotline

4.Governance

Indicator		References
102-18	Governance structure	Corporate Governance Sustainability Management
102-19	Delegating authority	Corporate Governance Sustainability Management



Indicator		References
102-20	Executive-level responsibility for economic, environmental, and social topics	Sustainability Management Management Team
102-21	Consulting stakeholders on economic, environmental, and social topics	Materiality for sustainability of the newly integrated company Stakeholder communications
102-22	Composition of the highest governance body and its committees	Corporate Governance Corporate Governance Report: [Directors] (P.7)  Securities Report: 2 Status of Corporate Officers (Japanese only) (P.51) 
102-23	Chair of the highest governance body	Corporate Governance Notice of Convocation of the 113th Ordinary General Meeting of Shareholders (Proposal No. 3: Election of Ten Directors) (P.7) 
102-24	Nominating and selecting the highest governance body	Corporate Governance Corporate Governance Basic Policies: (3) Election (P.4)  Notice of Convocation of the 113th Ordinary General Meeting of Shareholders (Proposal No. 3: Election of Ten Directors) (P.7) 
102-25	Conflicts of interest	Corporate Governance Basic Policies: 5. Related Party Transactions (P.2) 
102-26	Role of highest governance body in setting purpose, values, and strategy	Sustainability Management
102-27	Collective knowledge of highest governance body	Corporate Governance
102-28	Evaluating the highest governance body's performance	Evaluation of the Board of Directors' Effectiveness


Indicator		References
102-29	Identifying and managing economic, environmental, and social impacts	Materiality for sustainability of the newly integrated company Measures against Climate Change (Disclosure in Line with TCFD)
102-30	Effectiveness of risk management processes	Risk Management Governance and risk management
102-31	Review of economic, environmental, and social topics	Sustainability Management Risk Management Governance and risk management
102-32	Highest governance body's role in sustainability reporting	Sustainability Management
102-33	Communicating critical concerns	Risk Management
102-34	Nature and total number of critical concerns	-
102-35	Remuneration policies	SHOWA DENKO Report 2022: New Remuneration System for Directors and Corporate Officers (P.89)  Securities Report: 4. Remuneration of executives (Japanese only) (P.63) 
102-36	Process for determining remuneration	SHOWA DENKO Report 2022: New Remuneration System for Directors and Corporate Officers (P.89)  Securities Report: 4. Remuneration of executives (Japanese only) (P.63) 
102-37	Stakeholders' involvement in remuneration	SHOWA DENKO Report 2022: New Remuneration System for Directors and Corporate Officers (P.89)  Securities Report: 4. Remuneration of executives (Japanese only) (P.63) 
102-38	Annual total compensation ratio	-
102-39	Percentage increase in annual total compensation ratio	-

5.Stakeholder Engagement


Indicator		References
102-40	List of stakeholder groups	Stakeholder communications
102-41	Collective bargaining agreements	ESG Performance Data (Society: Promoting sound work-life balance, Labor union)
102-42	Identifying and selecting stakeholders	Stakeholder communications
102-43	Approach to stakeholder engagement	Stakeholder communications
102-44	Key topics and concerns raised	Materiality for sustainability of the newly integrated company Participation in Community Activities

6.Reporting Practice

Indicator		References
102-45	Entities included in the consolidated financial statements	Locations (SHOWA DENKO K.K.) Securities Report: 4 Subsidiaries and Affiliates (Japanese only) (P.8) 
102-46	Defining report content and topic boundaries	Editorial Policies/ Report Scope Materiality for sustainability of the newly integrated company
102-47	List of material topics	Materiality for sustainability of the newly integrated company
102-48	Restatements of information	-
102-49	Changes in reporting	-
102-50	Reporting period	Report scope SHOWA DENKO Report 2022: Editorial Policies (P.101) 

Indicator		References
102-51	Date of most recent report	SHOWA DENKO Report 2022: Publication Date (P.101) 
102-52	Reporting cycle	Report scope SHOWA DENKO Report 2022: Editorial Policies (P.101) 
102-53	Contact point for questions regarding the report	Prepared by SHOWA DENKO Report 2022: Prepared by (Back cover)
102-54	Claims of reporting in accordance with the GRI Standards	SHOWA DENKO Report 2022: Referenced Guidelines (P.101) 
102-55	GRI content index	This table
102-56	External assurance	Third-party Verification SHOWA DENKO Report 2022: Third-Party Verification of Environmental and Safety Data (P.101) 

GRI 103:Management Approach

Indicator		References
103-1	Explanation of the material topic and its boundary	Materiality for sustainability of the newly integrated company 
103-2	The management approach and its components	Materiality for sustainability of the newly integrated company
103-3	Evaluation of the management approach	Materiality for sustainability of the newly integrated company

GRI 200:Economic

GRI 201:Economic Performance

Indicator		References
201-1	Direct economic value generated and distributed	ESG Performance Data (Society: Other) Participation in Community Activities Financial Report 2021: Financial Data (P.10) □
201-2	Financial implications and other risks and opportunities due to climate change	Measures against Climate Change (Disclosure in Line with TCFD)
201-3	Defined benefit plan obligations and other retirement plans	Financial Report 2021: (p) Accounting Policy for Retirement Benefits (P.17) □
201-4	Financial assistance received from government	-

GRI 202:Market Presence

Indicator		References
202-1	Ratios of standard entry level wage by gender compared to local minimum wage	-
202-2	Proportion of senior management hired from the local community	-

GRI 203:Indirect Economic Impacts

Indicator		References
203-1	Infrastructure investments and services supported	Participation in Community Activities
203-2	Significant indirect economic impacts	-

GRI 204:Procurement Practices

Indicator		References
204-1	Proportion of spending on local suppliers	-

GRI 205:Anti-corruption

Indicator		References
205-1	Operations assessed for risks related to corruption	-
205-2	Communication and training about anti-corruption policies and procedures	Anti-corruption
205-3	Confirmed incidents of corruption and actions taken	ESG Performance Data (Governance)

GRI 206:Anti-comPetitive Behavior

Indicator		References
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	-

GRI 207:Tax (2019)

Indicator		References
207-1	Approach to tax	Showa Denko Group's Tax Code of Conduct

Indicator		References
207-2	Tax governance, control, and risk management	Showa Denko Group's Tax Code of Conduct
207-3	Stakeholder engagement and management of concerns related to tax	Showa Denko Group's Tax Code of Conduct
207-4	Country-by-country reporting	-

GRI 300:Environmental

GRI 301:Materials

Indicator		References
301-1	Materials used by weight or volume	-
301-2	Recycled input materials used	ESG Performance Data (Environment: Resource recycling)
301-3	Reclaimed products and their packaging materials	-

GRI 302:Energy

Indicator		References
302-1	Energy consumption within the organization	ESG Performance Data (Environment: Prevention of global warming)
302-2	Energy consumption outside of the organization	-
302-3	Energy intensity	ESG Performance Data (Environment: Prevention of global warming)

Indicator		References
302-4	Reduction of energy consumption	Challenges to Realize Carbon Neutrality ESG Performance Data (Environment: Prevention of global warming)
302-5	Reductions in energy requirements of products and services	ESG Performance Data (Environment: Prevention of global warming)

GRI 303:Water and Effluents


Indicator		References
303-1	Interactions with water as a shared resource	Environmental Considerations; Water
303-2	Management of water discharge-related impacts	Environmental Considerations; Water
303-3	Water withdrawal	ESG Performance Data (Environment: Resource recycling)
303-4	Water discharge	ESG Performance Data (Environment: Resource recycling) Environmental Considerations; Water
303-5	Water consumption	ESG Performance Data (Environment: Resource recycling) Environmental Considerations; Water

GRI 304:Biodiversity

Indicator		References
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	-

Indicator		References
304-2	Significant impacts of activities, products, and services on biodiversity	-
304-3	Habitats protected or restored	Efforts for Preservation of Biodiversity
304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	-

GRI 305:Emissions

Indicator		References
305-1	Direct (Scope 1) GHG emissions	Measures against Climate Change (Disclosure in Line with TCFD) ESG Performance Data (Environment: Prevention of global warming)
305-2	Energy indirect (Scope 2) GHG emissions	Measures against Climate Change (Disclosure in Line with TCFD) ESG Performance Data (Environment: Prevention of global warming)
305-3	Other indirect (Scope 3) GHG emissions	Measures against Climate Change (Disclosure in Line with TCFD)
305-4	GHG emissions intensity	ESG Performance Data (Environment: Prevention of global warming)
305-5	Reduction of GHG emissions	Measures against Climate Change (Disclosure in Line with TCFD) Challenges to Realize Carbon Neutrality ESG Performance Data (Environment: Prevention of global warming) SHOWA DENKO Report 2022: Topics (P.64) 
305-6	Emissions of ozone-depleting substances (ODS)	-

Indicator		References
305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	Environmental Considerations; Atmosphere ESG Performance Data (Environment: Pollution prevention)

GRI 306:Waste (2020)

Indicator		References
306-1	Waste generation and significant waste-related impacts	-
306-2	Management of significant waste-related impacts	Waste Management
306-3	Waste generated	ESG Performance Data (Environment: Resource recycling)
306-4	Waste diverted from disposal	Waste Management ESG Performance Data (Environment: Resource recycling)
306-5	Waste directed to disposal	Waste Management ESG Performance Data (Environment: Resource recycling)

GRI 307:Environmental Compliance

Indicator		References
307-1	Non-compliance with environmental laws and regulations	ESG Performance Data (Environment: Other)

GRI 308:Supplier Environmental Assessment

Indicator		References
308-1	New suppliers that were screened using environmental criteria	Promotion of Sustainable procurement Evaluation of Suppliers
308-2	Negative environmental impacts in the supply chain and actions taken	Promotion of Sustainable procurement Evaluation of Suppliers

GRI 400:Social

GRI 401:Employment

Indicator		References
401-1	New employee hires and employee turnover	ESG Performance Data (Society: Recruitment, Labor Practices)
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	About the system
401-3	Parental leave	ESG Performance Data (Society: Promoting sound work-life balance, Labor union)

GRI 402:Labor/Management Relations

Indicator		References
402-1	Minimum notice periods regarding operational changes	-

GRI 403:Occupational Health and Safety (2018)

Indicator		References
403-1	Occupational health and safety management system	Management system Occupational health and safety management systems SHOWA DENKO Report 2022: Occupational Health and Safety (P.66)
403-2	Hazard identification, risk assessment, and incident investigation	Management system Prevention of Occupational Accidents Equipment safety
403-3	Occupational health services	-
403-4	Worker participation, consultation, and communication on occupational health and safety	Management system
403-5	Worker training on occupational health and safety	Management system Prevention of Occupational Accidents Equipment safety
403-6	Promotion of worker health	Employees' Health
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Prevention of Occupational Accidents Equipment safety
403-8	Workers covered by an occupational health and safety management system	Occupational health and safety management systems
403-9	Work-related injuries	Prevention of Occupational Accidents Equipment safety ESG Performance Data (Society: Safety, health)
403-10	Work-related ill health	-

GRI 404: Training and Education

Indicator		References
404-1	Average hours of training per year per employee	Development of human resources ESG Performance Data (Society: Recruitment, Labor Practices)
404-2	Programs for upgrading employee skills and transition assistance programs	Development of human resources Promotion of diversity and inclusion
404-3	Percentage of employees receiving regular performance and career development reviews	Development of human resources

GRI 405: Diversity and Equal Opportunity

Indicator		References
405-1	Diversity of governance bodies and employees	Promotion of diversity and inclusion ESG Performance Data (Society: Number of employees) ESG Performance Data (Governance) SHOWA DENKO Report 2022: Directors (P.82-83)
405-2	Ratio of basic salary and remuneration of women to men	ESG Performance Data (Society: Recruitment, Labor Practices)

GRI 406: Non-discrimination

Indicator		References
406-1	Incidents of discrimination and corrective actions taken	-

GRI 407:Freedom of Association and Collective Bargaining

Indicator		References
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	Promotion of Sustainable procurement Evaluation of Suppliers

GRI 408:Child Labor

Indicator		References
408-1	Operations and suppliers at significant risk for incidents of child labor	Promotion of Sustainable procurement Evaluation of Suppliers

GRI 409:Forced or Compulsory Labor

Indicator		References
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	Promotion of Sustainable procurement Evaluation of Suppliers

GRI 410:Security Practices

Indicator		References
410-1	Security personnel trained in human rights policies or procedures	-

GRI 411:Rights of Indigenous Peoples

Indicator		References
411-1	Incidents of violations involving rights of indigenous peoples	-

GRI 412:Human Rights Assessment

Indicator		References
412-1	Operations that have been subject to human rights reviews or impact assessments	Respect for Human Rights
412-2	Employee training on human rights policies or procedures	Respect for Human Rights
412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	-

GRI 413:Local Communities

Indicator		References
413-1	Operations with local community engagement, impact assessments, and development programs	Participation in Community Activities
413-2	Operations with significant actual and potential negative impacts on local communities	-

GRI 414: Supplier Social Assessment

Indicator		References
414-1	New suppliers that were screened using social criteria	Promotion of Sustainable procurement Evaluation of Suppliers
414-2	Negative social impacts in the supply chain and actions taken	Promotion of Sustainable procurement Evaluation of Suppliers

GRI 415:Public Policy

Indicator		References
415-1	Political contributions	ESG Performance Data (Society: Other)

GRI 416:Customer Health and Safety

Indicator		References
416-1	Assessment of the health and safety impacts of product and service categories	Management System
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	-

GRI 417:Marketing and Labeling

Indicator		References
417-1	Requirements for product and service information and labeling	Management System
417-2	Incidents of non-compliance concerning product and service information and labeling	-
417-3	Incidents of non-compliance concerning marketing communications	-

GRI 418:Customer Privacy

Indicator		References
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	-

GRI 419:Socioeconomic Compliance

Indicator		References
419-1	Non-compliance with laws and regulations in the social and economic area	-

External Evaluation

ESG Investment Indexes adopting Showa Denko

As of April 2022, Showa Denko is included in the following ESG investment indexes:

■ FTSE4Good Global Index



This socially responsible investment index was launched by FTSE International, Ltd., a subsidiary of the London Stock Exchange. The index is intended to foster investments in companies that are highly rated based on widely approved international criteria on corporate social responsibility.



■ FTSE Blossom Japan Index



Included in this index are Japanese companies that are excellent in terms of ESG-related performance. This ESG index is designed to be industry-neutral by weighting based on the FTSE Japan Index (parent index).



■ FTSE Blossom Japan Sector Relative Index



The new FTSE Blossom Japan Sector Relative Index is designed as a sector neutral benchmark that reflects the performance of companies demonstrating strong Environmental, Social and Governance (ESG) practices in Japan. The index selects companies with higher ESG Ratings within the top 50% of each sector and supports climate transition to a low carbon economy by evaluating companies' climate governance and climate change efforts via the Transition Pathway Initiative's Management Quality Score.



■ MSCI Japan Empowering Women Index (WIN)

2021 CONSTITUENT MSCI JAPAN EMPOWERING WOMEN INDEX (WIN)

Included in this index are companies that are highly rated for gender diversity among those included in the MSCI Japan IMI Top 500 Index (parent index).



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■ S&P/JPX Carbon Efficient Index



This index by S&P Dow Jones Indices and the Tokyo Stock Exchange overweights or underweights the companies comprising the index based on their disclosure of environmental information and the level of their carbon efficiency.



■ SNAM Sustainability Index



Launched by Sompo Japan Nipponkoa Asset Management (SNAM), this index comprises companies highly rated for ESG and is utilized to enable the company to make sustainable investments.



Certification

■ Certification as a good company in terms of balance between work and family life

SDK has been promoting a good balance between employees' work and family life so that employees with diversified backgrounds and lifestyles can continue working vigorously. SDK was certified by the health and labor minister as one of the good companies in Japan in this respect in 2008, 2013 and 2016.

Certification

■ Certification as a good company in terms of balance between work and family life

SDK has been promoting a good balance between employees, work and family life so that employees with diversified backgrounds and lifestyles can continue working vigorously. SDK was certified by the health and labor minister as one of the good companies in Japan in this respect in 2008, 2013 and 2016



■ “Good healthy company”

SDK has been certified since 2017 by the Ministry of Economy, Trade and Industry and Nippon Kenko Kaigi (Japan Health Conference) as a good corporation promoting employees’ health and productivity.



■ Excellent company in Gomez ESG site ranking 2021

SDK was selected as one of the excellent companies in “Gomez ESG site ranking 2021.” The ranking evaluates user-friendliness and richness of content of websites that transmit ESG information.



Library

The Showa Denko Group restructured its CSR report and annual report in 2017 to publish the Showa Denko Report as an integrated report.

Integrated Reports

[SHOWA DENKO Report \(2017-\),
Sustainability Website \(2020-\)](#)

Integrated Reports, Website

Latest Integrated Report





Full report

[A3-size](#) (8.1MB)

[A-4size](#) (12.5MB)

Back numbers

- [SHOWA DENKO Report 2021](#) (7.5MB)
- [SHOWA DENKO Report 2020](#) (4.0MB)
- [SHOWA DENKO Report 2019](#) (10.2MB)
- [SHOWA DENKO Report 2018](#) (9.7MB)
- [SHOWA DENKO Report 2017](#) (6.2MB)
- [SHOWA DENKO Report 2017 Digest Version](#) (4.5MB)
- [CSR Report \(2005-2016\)](#) 
- [Responsible Care Report\(2000-2004\)](#) 

Sustainability Website Archives

This Sustainability Site, which provides detailed information about the Showa Denko Group's efforts for environment, society and governance (ESG), is updated at the end of July every year centering on previous year's results. (As for information other than the previous year's results, we update the site from time to time in and after August.)

[Sustainability Website FY2020](#) (2.3MB)

[Sustainability Website FY2021\(As of March 2022\)](#) (2.9MB)

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Amazing Discoveries! Science Experiments for Kids

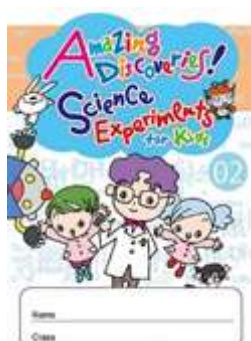
Amazing Discoveries! Science Experiments for Kids

Showa Denko Materials holds science experiment workshops, in which our employees volunteer as instructors, for children at kindergartens, nurseries, and elementary schools around our offices. We aim to offer children opportunities to have fun in science through demonstrating various experiments.

As an educational material for the "Science Workshops for Kids" program, which is part of our science education support for children at kindergartens and nurseries, we have produced and published the series of "Amazing Discoveries! Science Experiments for Kids," also making them available as PDF files.



[Amazing Discoveries! Science Experiments for Kids Vol.1](#)
(7.8MB)



[Amazing Discoveries! Science Experiments for Kids Vol.2](#)
(8.4MB)



[Amazing Discoveries! Science Experiments for Kids Vol.3](#)
(8.8MB)

Creation of the booklets was supervised by Kazuhiro Miyamoto, a Teacher at the Kaisei Junior & Senior High School, Tokyo. The booklets were produced to enable children to acquire the ability to discover wonders and solve problems through science experiments. Each booklet contains 11 kinds of fun experiments that can be enjoyed by children 5-6 years old.

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