

Idemitsu Kosan

# Idemitsu Sustainability Report 2019

**Idemitsu Kosan Co.,Ltd.**

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<https://www.idemitsu.com/>

## Management Vision

We are an energy co-creation company that values diversity and inclusion, creates new values with customers and stakeholders, and seeks harmony with the environment and society.

- We will deliver various forms of energy and materials in a sustainable manner.
- We will expand and share our problem-solving capabilities with the world.
- We will grow stronger by anticipating change and responding flexibly.

## Action Mindset



## CONTENTS

2	Management Vision, Action Mindset, Contents	GOVERNANCE
3	Editorial Policy	49
4	Message from President	50
7	Medium-term Management Plan	Directors, Audit & Supervisory Board Members and Executive Officers
10	Review of Operations	52
11	Idemitsu Group's Sustainability	56
		57
		59
	ENVIRONMENT	
15	Environmental Management / Environmental Policy	ESG Data
17	Overview of Environmental Impacts Through Our Business Activities	61
18	Response to Climate Change	70
23	Response to Circular Economy	75
24	Waste Reduction	76
25	Water Management	Environmental Data of Refineries and Complexes
26	Conservation of Biodiversity	Comparative Table
27	Land Use Change	78
28	Management of Chemical Substances and Reduction of Hazardous Substances	88
29	Pollution Prevention	90
		Independent Practitioner's Assurance Report
	SOCIAL	
30	Human Resources Policy	
32	Stimulating Self-Growth Motivation and Providing Growth Opportunities	
33	Creating a Workplace Where Diverse Employees Can Create Together and Hiring Human Resources	
35	Efforts to Improve Workplace Culture and Motivation	
36	Establishment of Personnel Systems That are Rewarding and That Enable Employees to Focus on Their Work with Peace of Mind	
38	Promotion of Employees' Health	
39	Ensuring Safety	
42	Quality Control and Quality Assurance	
43	Collaboration with Partners	
45	Social Contribution Activities	



## Editorial Policy

In order to deepen stakeholders' understanding of Idemitsu Group's management and corpo-rate activities as a whole, information is provided through the "Idemitsu Integrated Report," "Idemitsu Sustainability Report" and the "Sustainability Website" on our website.

Idemitsu Group and Showa Shell Group are disclosing the results of their efforts in FY2018 under the unified reporting standards wherever possible.

### Idemitsu Integrated Report (Booklet version)

It includes financial and non-financial information, the vision of the new integrated company, and an explanation of its business operations, all of which are aimed at helping people understand our group from a medium to long-term perspective.

### Idemitsu Sustainability Report (Web version)

The non-financial information in the Idemitsu Integrated Report is provided in greater detail to help people understand our environmental, social, and governance initiatives for realizing a sustainable society.

### Sustainability Website

We disclose information on a wide range of topics from the environmental, social, and governance perspectives.

We also provide information on the results of our efforts in a timely manner.

<https://sustainability.idemitsu.com/en>

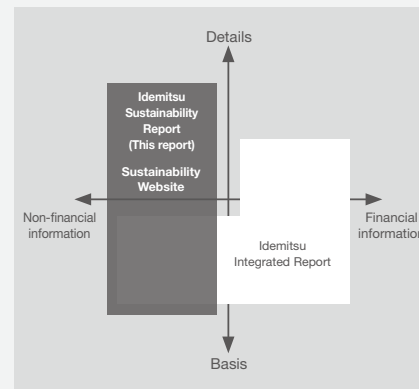


### Scope of the reporting

As a general rule, this report covers Idemitsu Kosan Co.,Ltd. and its 239 group affiliates (major affiliates, general affiliates, subsidiaries, and equity-method affiliates) as of April 1, 2019. However, if the scope is different, this fact is noted.

### Reporting period

This report covers Idemitsu Group's performance for the period from April 1, 2018 to March 31, 2019 (FY2018). However, the reporting period for the Showa Shell Group for FY2018 is 15 months from January 1, 2018 to March 31, 2019 due to the change in the accounting period. When the reporting period differs, statement to that effect is included. Some activities after April 2019 are also included.



## Reference guidelines

In the compilation of this report, reference has been made to the International Integrated Reporting Framework published by the International Integrated Reporting Council (IIRC), GRI's Sustainability Reporting Guidelines (Standard), SDGs, ISO 26000, TCFD (Task Force on Climate-related Financial Disclosures), and METI's Value Creation Guidance.

## Publication information

Japanese version: Published annually since 2001, and the previous edition was published in November 2018.

English version: Published annually since 2003, and the previous edition was published in January 2019.

## Performance data with independent practitioner's assurance

To ensure the reliability of the numerical data, we obtained independent practitioner's assurance of the data indicated with  in the Japanese version of this report by Deloitte Tohmatsu Sustainability Co., Ltd. The Independent Practitioner's Assurance Report is presented at the end of this report.

\* Any plans, projections or targets contained in this report that are not historical facts are based on decisions and assumptions of our company with the information currently available. Actual results may differ substantially from forecasts due to various factors. Factors that may affect the results of operations include economic situations, crude oil prices, trends in petroleum products, market conditions, and currency exchange rates, but are not limited to these factors.

\* As of April 1, 2019, Idemitsu Kosan Co.,Ltd. became the wholly owning parent company and Showa Shell Sekiyu K.K. became the wholly owned subsidiary through the share exchange. Both companies also entered into an absorption-type company split agreement in which Idemitsu becomes the succeeding company to the absorption-type company split, effective on July 1, 2019. Both companies are proceeding with the business integration and aim to create even more synergies by transferring Showa Shell's assets, liabilities, and rights and obligations to Idemitsu through the Company Split, and integrating their organizations and businesses.

\* Shell has licensed its brand to Showa Shell. Under this license, Showa Shell uses the Shell Trademark. The opinions expressed in this report are those of Showa Shell and are not stated on behalf of any other Shell Group company. Furthermore, these opinions do not necessarily reflect the opinions of the Shell Group.

## Contact point for inquiries about Idemitsu Sustainability Report

Idemitsu Kosan Co.,Ltd.

Contact form on the official website: <https://www.idemitsu.com/contact/flow/>





## Message from President



## Aiming to Become an Energy Co-Creation Company

### What do you think of the new integrated company's Management Vision?

We chose the path of business integration in order to build a strong management base capable of bearing the heavy responsibility of energy security in Japan.

Now that we have integrated, it is natural that we aim to create integration synergies and enhance competitiveness through economies of scale. However, business integration is a means, not a goal. It is putting the cart before the horse if the integration loses what each company has cherished. We have carefully discussed what our company should become, based on fundamental questions such as why we exist, what our stakeholders expect from us, and what points are unique, while watching the history of both companies.

#### Management Vision

**We are an energy co-creation company that values diversity and inclusion, creates new values with customers and stakeholders, and seeks harmony with the environment and society.**

Both Idemitsu Kosan Co.,Ltd., and Showa Shell Sekiyu K.K., the predecessors of the new integrated company, were established in Japan in the Meiji era (1868-1912). Both companies have a long history of selling petroleum products and fighting for energy security in Japan during and after the turbulent times of the war. We have always been challenging ourselves to create new values in order to realize the ideal society. For example, in Japan, Marcus Samuel, one of the founders of Showa Shell Sekiyu K.K., started selling kerosene oil (kerosene) for heating and lighting. Sazo Idemitsu, the founder of Idemitsu Kosan, led the Nisshou Maru Incident, which triggered the start of free international trade in oil. Since then, Sazo Idemitsu has continued to work on the construction of the world's largest tanker and the world's first heavy oil direct hydrodesulfurization unit. The new integrated company will inherit the DNA of these founders and make it the core value of the company.

Japan's environmental and safety regulations and standards for quality and service are among the strictest in the world. We intend to contribute to the development of each country and region outside of Japan and to the resolution

of social issues by utilizing the technological capabilities, products and services, and business know-how that we have developed and accumulated for over 100 years. One example is building petroleum products supply chains in emerging countries, particularly in Asia, where economic growth is booming.

"Co-creation" expresses our determination to create new values together with our customers, local communities, all our business partners, and employees, who are our group's strengths and assets by standing at a new starting point. I believe that there is no future as an extension of the past. Collaboration with diverse stakeholders is essential to creating new values.

We will discuss "Diversity & inclusion" and "Harmony with the environment and society" in another section.

### Please tell us about "People-centered management."

There is another common value that both companies have valued. The idea is that "People-centered management." To be clear, I believe that our group's ultimate goal is to develop people who are useful and respected in society, and our business is a means to this end. This is different from the idea of developing human resources to maximize corporate value. For example, we may be able to increase our corporate value by making investments with limited risks and high returns. However, we basically do not make investments that do not lead to human development. We place a high priority on the process in which our employees engage directly in each business and work hard, overcome numerous difficulties, and grow vigorously through various experiences.

This is not just about naive thinking or idealism. In a turbulent business environment, it is difficult for management alone to respond quickly and appropriately to a variety of simultaneous and frequent issues. In many cases, it is more efficient and effective to trust experienced employees who are familiar with the workplace and leave decisions to them. Also, in order to create a future that is not in line with the present, it is necessary for employees with diverse backgrounds to constantly breathe new life into the company. "Human development" is not only the ultimate management objective, but also the principles of management indispensable to the development of our group.

With this in mind, the new integrated company's slogan is "Hitowa, Mugenno Energy. (People have limitless energy.)" This means that each



## Message from President

employee can make the best use of his or her abilities without limiting them. At the same time, the team strength of the entire organization and supply chain is enhanced to contribute to the development of society, thereby enriching one's own life. Also, it expresses the preciousness of energy in humans and our group's mission as an energy company.

Based on the idea that human resources are the source of management vitality, we believe that the greatest responsibility of management is to create an environment in which employees can work energetically. As a result, we believe that we will be able to promote sustainable growth, which in turn will increase our attractiveness in the capital market.

## What is the basic policy of the medium-term management plan?

Domestic demand for petroleum products peaked out in 1999 and has been on a gradual decline due to a dwindling of population and the spread of eco-cars. This trend is expected to accelerate even in the future, and is expected to decline by 30% in 2030 due to the shift from car ownership to shared use. As an energy supplier, responding to climate change issues is important and urgent, and we recognize that it is difficult to continue to be overly dependent on our petroleum products, oil exploration and production and coal business. Accordingly, in order to remain a strong corporate group 30 years from now, in 2050, our group embarked on the formulation of the current medium-term management plan from the perspective of how, what, and by when it must change. In November 2019, the company announced its first medium-term management plan (FY2020-2022) after the business integration. To begin with, we drew up several business environment scenarios up to 2050 based on the Paris Agreement. As a result, although the environmental forecast for 2050 is extremely uncertain, all scenarios are on the same track until 2030. Therefore, we have decided to set management targets with 2030 as a milestone. We have set 2030 as a turning point, and we intend to establish a system that will enable us to respond flexibly to any changes in the environment that occur after that. We then backcast our 2030 management targets into a medium-term management plan.

Our 2 basic policies for 2030 are "Realization of resilient business portfolio" and "Building a business platform that meets the needs of society." Let's talk about the former.

I would like to reiterate that our basic philosophy is to promote "Structural reform of the revenue base business," "Expansion of growth businesses" and "Creation of next-generation businesses" in order to be a company that can respond flexibly and resiliently to any environmental change. In the revenue base business, we will take various measures to secure cash flow in the petroleum business for the next 10 years. We will maximize integration synergies and

strengthen the international competitiveness of our refineries to achieve world-class operational reliability and maintenance cost efficiency in FY2030. Based on this, we will continue to expand our overseas business in response to growing demand in Asia, taking advantage of the potential of our competitive refineries. At the Nghi Son Refinery, we will make an early contribution to earnings. In growth businesses, we will use cash generated from our revenue base business to expand our business scope and scale while making use of M&As in our functional materials business. Our business portfolio for 2030 consists of operating income from revenue base businesses such as petroleum products, oil exploration and production, coal business, and equity in earnings of affiliated companies which account for less than half of the total, compared to 60% in FY2019. Our goal is to expand our functional materials business, which includes lubricants, advanced materials & performance chemicals, Electronic materials; especially OLED materials, agri-bio products, and all-solid lithium-ion rechargeable battery materials, to more than 30% of the total operating income.

Furthermore, in order to create next-generation businesses, while keeping an eye on changes in society, diversification of customer needs, and progress in decarbonization, we will develop new business models to meet new energy demands, such as the development of next-generation service stations, the development of decentralized energy businesses, and the development of circular businesses.

I will also touch on our response to the digital innovation. Our group established the "Digital Innovation Department" in January 2020 as a specialized department. The purpose of the establishment is to increase operational efficiency through digitalization of core businesses, create new customer value, and create entirely new businesses. I expect these activities will take place across the group.

## What is your view on cash balance in the medium-term management plan?

Under the current medium-term management plan, we forecast a 3 year cumulative net profit of ¥480 billion, and cash in will secure ¥1.03 trillion, including depreciation and amortization, asset sales.

Cash out is calculated on the assumption that ¥630 billion will be allocated for capital investment, including M&As, and ¥200 billion will be allocated for shareholder returns. Free cash after shareholder return is expected to be ¥200 billion. After comprehensively considering such factors as income and expenditure, we intend to allocate these resources to strategic investments in growth areas, to strengthen our financial position, or to expand the source of returns to shareholders from FY2022 onwards.

Our group recognizes the return of profits to shareholders as an important

management issue. Accordingly, from FY2019 to 2021, we plan to return profits to shareholders with a return ratio of at least 50%. Policies for FY2022 and beyond will be determined in FY2021.

## What is your approach to the ESG (Environment, Society and Governance)?

Another basic policy of our medium-term management plan is "building a business platform that meets the needs of society."

As an energy supplier, our group recognizes that harmony with the global environment and society is a top priority. The goals of the SDGs (Sustainable Development Goals) were first linked to respective businesses in the current medium-term management plan, and then priority issues (materiality) that our group should focus on and address specifically were clarified. Next, we set GHG (Greenhouse Gas) reduction targets.

Our specific target for 2030 is to reduce CO<sub>2</sub> emissions from Scope 1 + 2 by 2 million t-CO<sub>2</sub> (▲15% of 2017 levels). This target exceeds the level of the reduction targets (1 million kl crude oil equivalent, about ▲2.7 million t-CO<sub>2</sub> compared to 2010) set by the national oil industry in light of Japan's draft commitments to the Paris Agreement. This is a very challenging target, but we intend to achieve it with all our group's resources.

It goes without saying that "Ensuring safety" and "Quality assurance" are the most important issues. Our group recognizes that its social mission and the foundation of its management are to continue safe and stable operations at refineries and complexes and to supply a stable supply of energy while earning the trust of local communities. We will continue to work to improve safety and foster a safety culture with the goal of achieving zero accidents. The number of group refineries increased due to the management integration. There has already been active communication among refineries, creating opportunities to learn from each other about common issues at production sites, such as safety, security, quality, and maintenance, based on risk management. I feel that safety and quality management have been further strengthened. We will continue to pay close attention to the wide range of our group products and concentrate our energies on ensuring product safety and quality throughout the entire supply chain.

Finally, let's talk about "Progress in governance." To revitalize and strengthen the functions of the Board of Directors, we will continue to have at least 1/3 of the Board of Directors as independent outside directors. In addition to these external standards, we will use a skill matrix to optimize the overall structure of the Board of Directors. At present, 5 out of 13 directors are outside directors, and when formulating the medium-term management plan, they gave advice from their respective specialized perspectives.



## Message from President

### Please tell us about your initiatives for diversity, work style reform, and business reform.

At the outset of our management vision is "Diversity & inclusion." There is no future as an extension of the present situation, and if we try to transform our business structure in this context, sometimes our past successes and knowledge become obstacles. Also, the strengths that the company has worked hard to accumulate may turn into weaknesses in an instant. How should we deal with it in such an era? I believe that one solution is to initiate chemical reactions while drawing out the full potential of each individual by incorporating diverse viewpoints, values, and powers. That's why diversity & inclusion is important.

Diversity & inclusion is generally defined as recognizing and accepting diversity, but it is ambiguous. At our group, we are promoting diversity & inclusion by creating an environment that enables our employees to achieve a good work-life balance that they can make time to improve their individual capabilities, streamlining existing operations for the employees to interact with people outside the company, and combining knowledge to create new values. In addition, the strength of each individual can be demonstrated only when he or she is healthy as well as when he or she enriches his or her personal life. Along with the promotion of diversity & inclusion, we are also promoting healthy management by positioning the promotion of healthy working conditions for both physical and mental health as a management issue.

At the same time, the acceleration of business change is essential to improving our group's competitiveness. To this end, "Next Forum" plays a major role. In February 2019, we began holding Next Forum, where employees and the top management communicate directly.

Forum committee members selected from each department gather opinions from the workplace and form a group of 7 to 8 members on a theme that is considered to be the company-wide issue. Directors also participate in this group to actively exchange opinions and finally compile proposals. One of the results of these efforts was the launch of "DTK(Dattara Ko Shiyō)Project(=Business Process Redesign)" triggered by Next Forum and other events.

DTK Project is aimed at developing a corporate culture that not only unifies work procedures and systems, but also promotes sustainable and autonomous business reform activities. The name reflects the desire of all employees to make their work more efficient and reform the way they work, to thoroughly discuss any issues they face, to come up with solutions based on flexible ideas and to carry out the decisions as a whole.

We hope that the time saved by these activities can be used to encourage individuals to pursue higher-value-added work, to spend time on their own development, and to enhance their personal lives, thereby increasing their motivation and capabilities, which in turn will lead to the expansion of growth fields and the creation of next-generation businesses. At the same time, we have

started digitization, BPR (Business Process Redesign), and smart work initiatives that enable a variety of work styles, including the introduction of RPA (Robotic Process Automation).

I believe that no matter what changes occur in the business environment, as long as we nurture well-trained and respected people, we will be able to overcome any difficulties and open a new era.

### What is the role of the Idemitsu Group in the society?

Recently, disasters such as earthquakes and typhoons hit the Japanese archipelago, threatening the lifeline of the people. Our group's social mission is to support energy security in Japan and protect the lifeline of its people. We will work to maintain and strengthen our supply chain in the event of an emergency. To fulfill this responsibility, we must create new services and business models that meet the needs of each region without further reducing our nationwide service station network.

The number of service stations has halved from the peak of approximately 60,000 to around 30,000 as a result of excessive competition for many years under the name of free competition. In particular, service stations in rural areas such as mountainous areas have decreased. Assuming that demand for petroleum products will decline by 30% over the next 10 years, the number of service stations is certain to decline further if we remain idle. Our group is working to maintain and strengthen its network by thoroughly pursuing what service stations can do and increasing the added value of their services. Service stations play an important part as social infrastructure in rural towns and villages, where public transportation is not available and automobiles are a vital means of transportation, and in sparsely populated areas where the population is aging. As an example, we have begun a demonstration of the MaaS (Mobility as a Service) business that utilizes ultra-small EVs. This initiative has received high praise from various parties as a reassuring initiative for the elderly and other people with poor transportation. We are also taking on the challenge of creating new services based on the needs of our customers by making full use of digital technology. From "Last Mile" perspective, we believe that service stations have great potential and has room to expand into a variety of businesses.

### What is your message to stakeholders?

In formulating this medium-term management plan, our group conducted scenario analysis focusing on energy demand through 2050.

This hypothesis was created based on the information obtained at present, and it is necessary to continue to collect, analyze, and refine this information.



We intend to build a resilient business portfolio that can respond flexibly and resiliently to any environmental change. We will report on the progress of our medium-term business plan to our stakeholders in a timely manner. We will also promptly report any changes in our strategic assumptions.

Energy is indispensable for the people of the world to lead cultural lives. At present, oil and coal are the primary energy sources required. However, for our group, whose main product is fossil fuels, responding to climate change is an inevitable challenge. The fact that our group has set a GHG emission reduction target despite its difficulties is an indication of our determination. In addition, we are actively engaged in renewable energy-related businesses such as solar, geothermal, biomass, and wind power. Our medium-term management plan sets a target of achieving a total of 5GW of renewable energy development overseas by 2030. We will assess changes in the structure of energy demand and work to ensure a stable supply of energy required in each region, while boldly addressing global environmental issues.

As a "Energy co-creation company," we will strive to create new values together with all our stakeholders while maximizing the synergies of people and businesses resulting from the management integration. We look forward to hearing your frank opinions and requests regarding our group. Thank you very much for your continued understanding and support.

Idemitsu Kosan Co.,Ltd.  
President and Representative Director

**Shunichi Kito**

## Medium-term Management Plan

### Medium-term Management Plan Theme "Co-creation"

Idemitsu Group operates in 42 countries and regions. It is said that Japan's environmental and safety regulations and quality and service requirements are the most stringent in the world. Based on the technological capabilities, products and services, and business know-how that have been developed and accumulated in Japan through these efforts, we will create new values to many important and serious issues that we face both in Japan and overseas. For the issues which cannot be easily solved, we will use innovative and flexible ideas such as "Dattara Ko Shiyō (DTK)."

Collaboration with stakeholders is essential to creating new values. With all of its customers in Japan and overseas, members of the communities in which it operates, closely linked distributors and dealers, logistics and maintenance subcontracting companies, business partners in Japan and overseas, including oil-producing countries, and our employees with diverse backgrounds, we are taking on the challenge of creating those new values. "Co-creation" expresses our passion.

### Long-term Energy Business Environment Scenario

The climate change issue will have a significant impact on the management and business continuity of Idemitsu group, whose core business is energy. We have therefore set 2050 as a long-term target based on the Paris Agreement, and has prepared a number of long-term energy business environment scenarios towards that year.

Scenario analysis identifies energy demand and the effects of climate change in the Asia-Pacific region and the business environment in 2050 is assumed. Four scenarios were prepared, including a scenario in which the increase in energy demand exceeds the trend toward low-carbon emissions due to the high growth of the Asian economy, and a scenario in which the targets of the Paris Agreement are achieved. (Figure 1) We are drawing up the medium-term management plan and examining specific priority topics with a strong awareness of the "Prism" scenario (Cases where the power to seek environmental measures has increased and the government or companies have responded to such demands), in which the company is expected to take stronger environmental measures.

Figure1 Long-term Scenarios for Conditions of the Energy Business in the Run-up to 2050

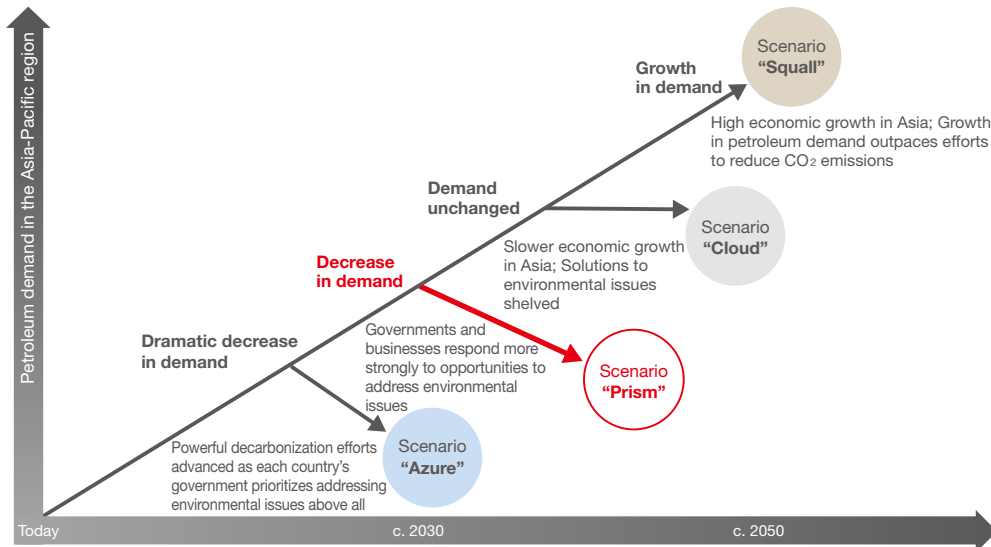


Figure2 Long-term Changes in Conditions of the Energy Business (Asia-Pacific region)

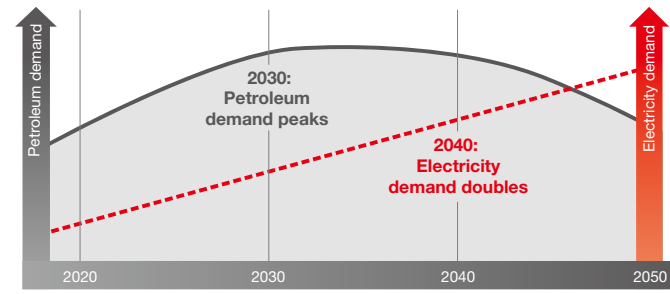
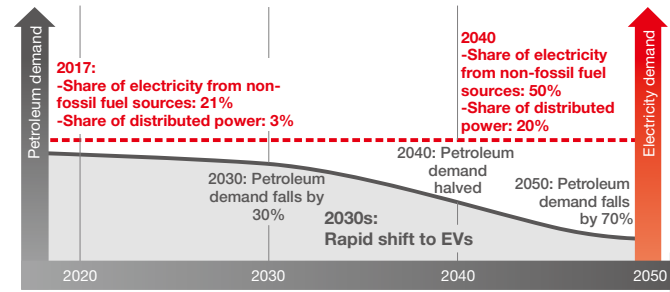


Figure3 Long-term Changes in Conditions of the Energy Business (Japan)



In the "Prism" scenario, energy demand in the Asia-Pacific region and Japan was estimated.

Figure 2 shows the outlook for demand for oil and electricity in the Asia-Pacific region. Although demand for oil will peak in 2030 and will be on a downward trend thereafter, demand is expected to remain almost unchanged in 2050. Electricity demand will double in 2040 and will continue to rise thereafter.

On the other hand, Figure 3, which shows the outlook for domestic demand for oil and electricity, shows that demand for oil is expected to decline by 30% in 2030, and then by 70% in 2050 as the population declines and the shift to EVs progresses. Although demand for electricity is expected to remain stable, the ratio of non-fossil power sources is expected to increase to 50% and the ratio of distributed power sources to 20% in 2040, indicating significant progress in the shift to renewable energy and the diversification of power sources.

Based on these projections, we recognize that the threats we face as an energy supplier coexist with opportunities for business expansion into 2050. Based on this recognition, we have formulated the medium-term management plan.

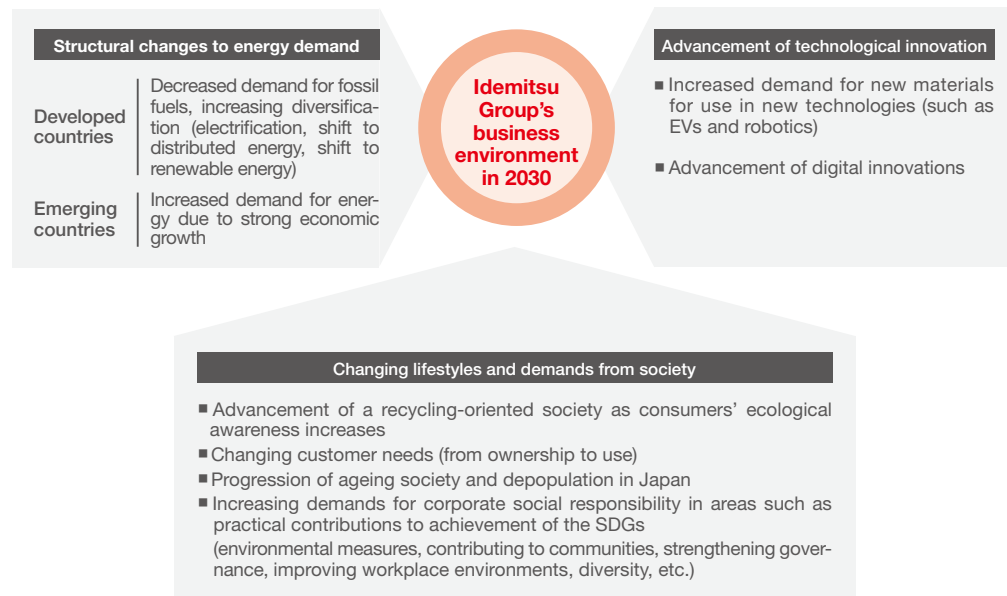


## Medium-term Management Plan

### Business Environment Recognition (Assumptions for 2030)

The environment surrounding Idemitsu group, including the energy situation, is complex and diverse, making it difficult to accurately forecast the 2050 year future. However, every scenario is expected to follow a similar trajectory through 2030. We have set 2030 as a relatively reliable milestone, aiming to become a company that is flexible and resilient no matter what future comes.

Based on these scenarios, we see the business environment in 2030 from 3 perspectives: "Structural changes to energy demand," "Advancement of technological innovation" and "Changing lifestyles and demands from society."



### Basic Policies and Priority Topics for 2030

Based on the recognition of the business environment given on page 12, Idemitsu group established 2 basic policies toward 2030: "Realizing a resilient business portfolio" and "Building a business platform suited to the needs of society." In addition to promoting business activities based on them, we will also work to resolve social issues.

Basic Policy	Priority Topics	Main Initiatives
Realizing a resilient business portfolio	Structural reforms to core revenue-generating businesses	<ul style="list-style-type: none"> <li>Pursuing profits in the petroleum business (maximizing integration synergies, making refineries more reliable)</li> <li>Enabling Nghi Son Refinery to contribute to profits</li> </ul>
	Expansion of growth businesses	<ul style="list-style-type: none"> <li>Expansion of business scale and domains (M&amp;As on a scale of ¥100 billion during the medium-term management plan period)</li> <li>Increasing the share of functional materials business to 30% by 2030</li> <li>Increasing total power generated from renewable energy to 5GW by 2030 (of which, 4GW is renewable energy)</li> <li>Transformation of solar-power business</li> </ul>
	Creation of next-generation businesses	<ul style="list-style-type: none"> <li>Creating new businesses with an eye on societal changes, diversifying customer needs, lessening environmental impact, etc.</li> </ul>

Over the next 10 years, we will steadily secure cash flow in the petroleum business, which is our revenue base. With this cashflow, we will use M&As in growth fields such as functional materials businesses to expand our business scale and scope. At the same time, with a view to responding to changes in society, diversifying customer needs, and reducing environmental impact, we are working to create next-generation businesses, including the development of next-generation service stations, the development of decentralized energy businesses, and the creation of circular businesses.

Basic Policy	Priority Topics	Main Initiatives
Building a business platform suited to the needs of society	Harmony with the global environment and society	<ul style="list-style-type: none"> <li>Efforts to reduce GHGs (2030: Down 2 million t-CO<sub>2</sub> vs. 2017(down 15%))</li> </ul>
	Progress in governance	<ul style="list-style-type: none"> <li>Enhancing roles and functions of the Board of Directors</li> </ul>
	Acceleration of digital innovations	<ul style="list-style-type: none"> <li>Utilizing digital technologies to create new values</li> </ul>

As specific targets for the harmony with the global environment, we have set quantitative reduction targets for GHG (Greenhouse Gas) and our own monitoring indicators. In particular, we will give top priority to reducing CO<sub>2</sub> emissions, which account for more than 90% of GHG emissions in Japan. In order to be a company that can earn the trust and expectations of shareholders and all other stakeholders, we will not only strengthen our governance functions, but also use digital technology to enhance our operations and create new values for our customers. We are also working to create an environment in which every employee can continue to work and grow according to his or her life stage.



## Medium-term Management Plan

### Quantitative Targets for 2030

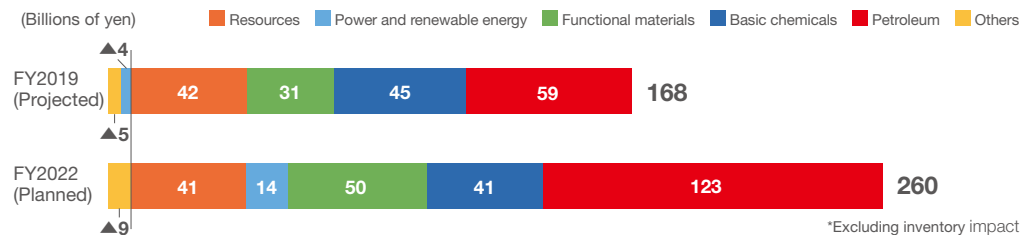
Operating income and equity in earnings of affiliates for FY2030 are set at ¥300billion, and we are transforming our business portfolio from a comprehensive perspective, including growth potential, stable earnings, and reduced environmental impact. As a result, we will reduce our excessive dependence on the fossil fuel business. The GHG reduction target was set at 2 million t-CO<sub>2</sub> (15%) compared to FY2017. (GHG reduction target P.44)

	FY2019(Projected)	FY2030	vs. FY2019
Operating income+equity earnings of affiliated companies	¥168 billion (Excluding inventory impact)	¥300 billion	+¥132 billion
Operating income ratio of 3 businesses (petroleum, exploration, coal)	60%	Less than 50%	▲10%
Operating income ratio of functional materials business	18%	30% or more	+12%
Cumulative total power development (overseas)	1.0GW (0.2GW)	5GW or more (4GW)	+4GW

### Management Targets for the Medium-term Management Plan Period (FY2020 - FY2022)

	FY2022 (Final year of medium-term management plan)	Three-year cumulative total
Net income	¥175 billion	¥480 billion
Operating income+equity earnings of affiliated companies	¥260 billion	¥720 billion
ROE (Return on equity)		10% or higher
FCF (Free cash flow)		¥400 billion

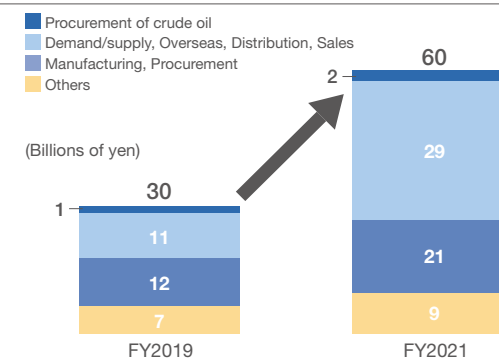
### Operating Income + Equity Earnings of Affiliated Companies, by Segment



	Main factors behind changes vs. 2019
Petroleum +64	Maximization of integration synergies Expansion of overseas sales Improving earnings of Nghi Son Refinery
Basic chemicals ▲40	Downturn in product markets (aroma, etc.)
Functional materials +19	Expansion of domains of lubricants/advanced materials & performance chemicals businesses, etc. Strengthening the electronic materials
Power and renewable energy +18	Expansion of power development from renewable energy sources overseas Expansion of the domestic electricity business
Resources ▲10	Commencement of production at Vietnam gas field Downturn in coal market
Others ▲40	Increase in costs of new business development, etc.

### Maximizing Integration Synergies

Our goal is to realize synergies of ¥60 billion by FY2021. Of this amount, ¥30 billion is expected to be achieved by FY2019 through initiatives launched in May 2017. The remaining ¥30 billion will be achieved by FY2021 through integration of brand policies, review of sales strategies, optimization of refining costs, and improvement of operational efficiency through DTK(Dattara Ko Shiyo) Project(=Business Process Redesign), with the aim of creating further synergies.



### Return to Shareholders

#### FY2019 - FY2021

Return to shareholders with a total return ratio of at least 50%

- At least 10% of the amount to be returned to shareholders will be allocated to repurchase treasury stock, with a minimum dividend of ¥160 per share.
- Planned retirement of treasury stock acquired

#### From FY2022

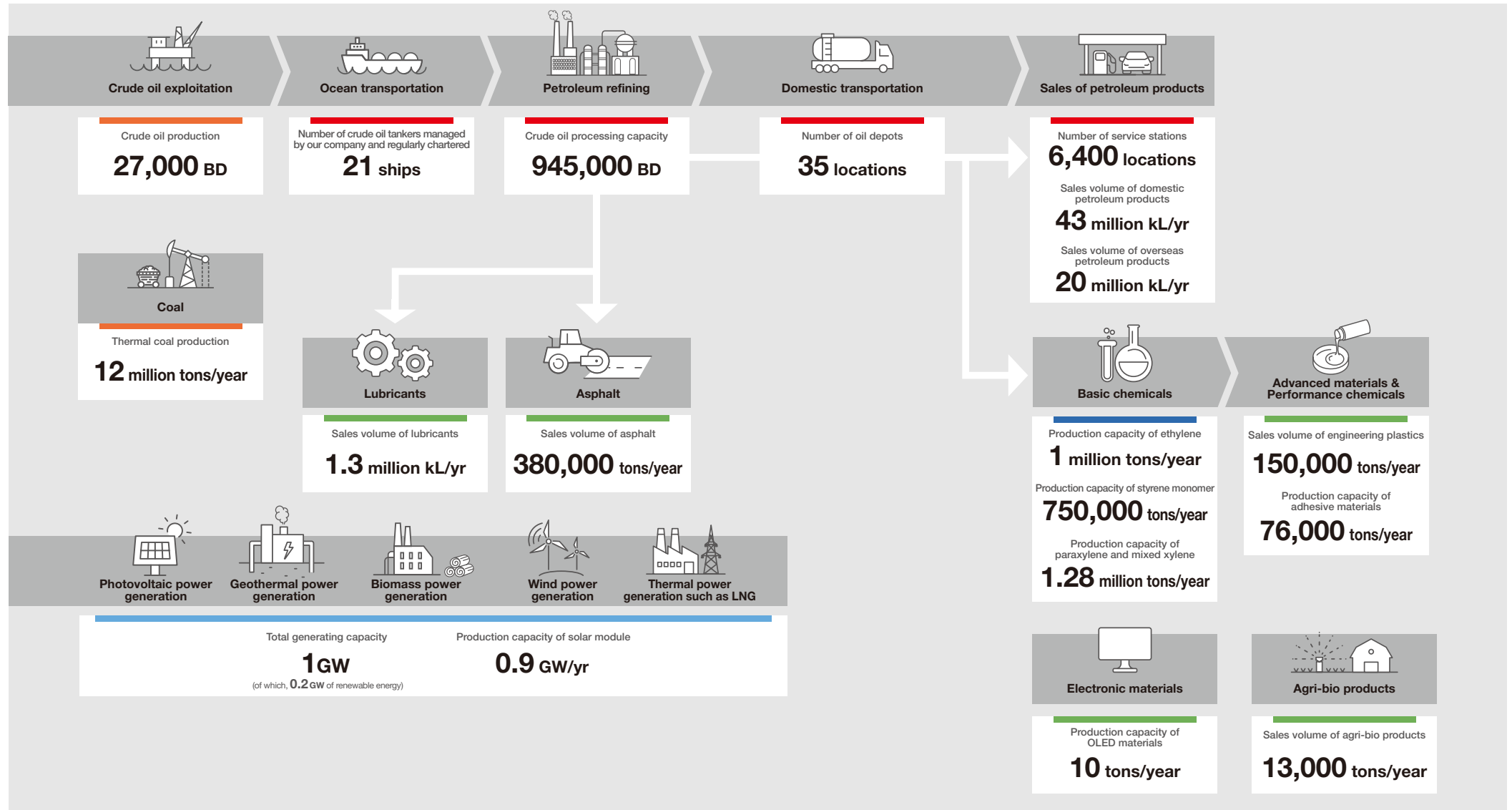
Consider further shareholder returns, such as increasing dividends in accordance with earnings levels and flexibly acquiring treasury stock, with a minimum dividend of ¥160 per share.

- The final policy will be decided in FY2021, taking into account the overall cash balance, such as strategic investment for growth and strengthening the financial structure.

Review of Operations

Idemitsu Group is expanding its business globally in such areas as petroleum products, lubricants, asphalt, oil and gas development, renewable energy, coal, petrochemicals, electronic materials, and agri-bio products.

■ Petroleum ■ Basic chemicals ■ Functional materials ■ Power and renewable energy ■ Resources





## Idemitsu Group's Sustainability

At Idemitsu group, we value contributing to society through our business. Our mission is to continue supplying energy that supports people's lifelines while contributing to social development. In recent years, the environmental impact of energy use has become a major social issue, and we recognize that harmony with the global environment and society is an important and urgent issue. Accordingly, with a long-term perspective, we have identified priority topics that it should prioritize during the medium-term management plan as materiality. The entire our group will work as one to resolve issues of materialities, with the aim of achieving our sustainable development with the global environment and society.

### Relationship Between Priority Topics (Materialities) and SDGs

Materiality	Major initiatives	Mainly related SDGs	Risks and opportunities (impact on society and Idemitsu group)
<p><b>Structural reform to core revenue base businesses</b></p> <p>Build a strong supply chain and further strengthen stability and competitiveness through collaboration with partners in the revenue base business centered on petroleum products and chemicals.</p>	<ul style="list-style-type: none"> <li>■ Pursuing profitability in the petroleum business (maximizing integration synergies, making refineries more reliable)</li> <li>■ Enabling Nghi Son Refinery to contribute to profits</li> <li>■ Using the pacific rim supply chain to meet growing demand in Asia</li> <li>■ Southeast Asia gas development</li> </ul>		<p><b>Risk</b></p> <ul style="list-style-type: none"> <li>■ Resource (energy, water, materials and land) use may increase due to business expansion</li> <li>■ Reputation decline and increased costs for environmental measures</li> </ul> <p><b>Opportunity</b></p> <ul style="list-style-type: none"> <li>■ GHG emissions reductions from energy efficiency improvements that could lead to cost savings in our company</li> <li>■ Contributions to the improvement of accessibility to basic services such as energy infrastructure, employment, and income distribution in new business areas. With those contributions, it is expected that we will strengthen its ties with the local regions</li> </ul>
<p><b>Expansion of growth businesses</b></p> <p>Expand business scale and scope by strengthening R&amp;D in growth fields such as functional materials and renewable energy, which are becoming increasingly necessary in the world.</p>	<ul style="list-style-type: none"> <li>■ Expansion of business scale and domains (M&amp;As on a scale of ¥100 billion during the medium-term management plan period)</li> <li>■ Increasing the share of functional materials business to 30% by 2030</li> <li>■ Increasing total power generated from renewable energy to 5GW by 2030 (of which, 4GW is renewable energy) ➡P.20</li> <li>■ Transformation of solar-power business</li> <li>■ Development of black pellets (biomass fuel) ➡P.20</li> <li>■ Strengthen development of functional materials through open innovation</li> </ul>		<p><b>Risk</b></p> <ul style="list-style-type: none"> <li>■ Resource (energy, water, materials and land) use may increase due to business expansion</li> <li>■ Reputation decline and increased costs for environmental measures</li> </ul> <p><b>Opportunity</b></p> <ul style="list-style-type: none"> <li>■ Promoting R&amp;D can create new products and services that simultaneously create technological innovation, solve social issues, and increase our profits</li> <li>■ Opportunities to expand low-carbon products and services</li> <li>■ Opportunities to expand agribio businesses that contribute to safe and secure food</li> </ul>
<p><b>Creation of next-generation businesses</b></p> <p>Accelerate technological innovation and innovation beyond organizational frameworks to create new businesses with an eye toward the future.</p>	<ul style="list-style-type: none"> <li>■ Creating new businesses with an eye on social changes, diversifying customer needs, lessening environmental impact ➡P.22</li> <li>■ Development of next-generation service stations</li> <li>■ Distributed energy business development, etc.</li> <li>■ Circular business ➡P.23-24</li> </ul>		<p><b>Risk</b></p> <ul style="list-style-type: none"> <li>■ Resource (energy, water, materials and land) use may increase due to business expansion</li> <li>■ Reputation decline and increased costs for environmental measures</li> </ul> <p><b>Opportunity</b></p> <ul style="list-style-type: none"> <li>■ Promoting R&amp;D can create new products and services that simultaneously create technological innovation, solve social issues, and increase our profits</li> <li>■ Opportunities to expand the renewable energy business</li> <li>■ New business establishments and reputation improvement through reduction of environmental impact and effective use of resources</li> </ul>
<p><b>Harmony with the global environment and society</b></p> <p>Promote measures to realize a low-carbon and recycling-oriented society in consideration of climate change risks, and promote diversity and inclusion in partnership with business partners, communities, and employees.</p>	<ul style="list-style-type: none"> <li>■ Efforts to reduce GHGs (2030: Down 2 million t-CO<sub>2</sub> vs. 2017 (down 15%)) ➡P.19</li> <li>■ Contributing to areas in which we conduct business ➡P.26, 45-48</li> <li>■ Practice of diversity and inclusion ➡P.31, 34</li> <li>■ Improving employee satisfaction ➡P.35</li> <li>■ SDGs educational activities ➡P.12</li> </ul>		<p><b>Risk</b></p> <ul style="list-style-type: none"> <li>■ Risk of increased costs such as capital investment to achieve GHG reductions</li> </ul> <p><b>Opportunity</b></p> <ul style="list-style-type: none"> <li>■ Practices of specific measures to climate change can lead to improvement of our company's reputation</li> <li>■ Opportunities for co-creation with partners through new initiatives</li> <li>■ Opportunities for regional revitalization, invigorating local economic cycles, and strong partnership between our company and the region</li> <li>■ Opportunities to promote understanding of diversity among employees, which can lead to improvements in the workplace environment and the creation of diversified innovations</li> </ul>
<p><b>Progress in governance</b></p> <p>Strengthen governance functions to maintain the trust of shareholders and all other stakeholders.</p>	<ul style="list-style-type: none"> <li>■ Enhancing roles and functions of the Board of Directors ➡P.52-55</li> </ul>		<p><b>Opportunity</b></p> <ul style="list-style-type: none"> <li>■ Transparency and fairness enhancement.</li> <li>■ Initiatives promotion support.</li> </ul>
<p><b>Acceleration of digital innovations</b></p> <p>Capitalize on evolving digital technologies to transform existing business processes and management in response to the business environment and customer needs.</p>	<ul style="list-style-type: none"> <li>■ Utilizing digital technologies to create new values</li> <li>■ Digitalization of core businesses (established in January 2020 "Digital Innovation Department")</li> </ul>		<p><b>Risk</b></p> <ul style="list-style-type: none"> <li>■ Increased initial investment costs associated with the introduction of new systems and the risk of problems during the transition period</li> </ul> <p><b>Opportunity</b></p> <ul style="list-style-type: none"> <li>■ Opportunities to reduce costs and create time by improving operational efficiency.</li> <li>■ Opportunities to solve social problems through technological innovation</li> </ul>

## Idemitsu Group's Sustainability

### Materiality Identification Process

In determining materiality, we identified issues to be considered by referring to international guidelines such as the GRI Standards and ISO26000, as well as research items from SDGs and ESG evaluation organizations. Idemitsu group's business activities and environmental and social issues that could be affected by these activities were identified and sorted out into 38 categories. We also conducted a questionnaire survey of internal and external stakeholders, including customers, business partners, shareholders, investors, and group employees, to confirm their expectations.

In the end, we identified six materialities by aligning them with our medium-term management plan, which is our corporate strategy, and taking into account discussions at the management level. Materiality is closely linked to corporate and departmental strategies, and is priority topics in our medium-term management plan.

As an energy co-creation company, we continue to challenge new values creation with various stakeholders. In order to do so, we considered priorities from a long-term perspective, taking into account environmental and social issues, and set them as our priority topics "Materialities."

#### Step 1 Extraction the issues

We extracted environmental and social issues that may be related to our business activities by referring to international guidelines such as GRI Standards and evaluation criteria of SDGs and ESG evaluation organizations.

#### Step 2 Confirming how important the issues are to the stakeholders

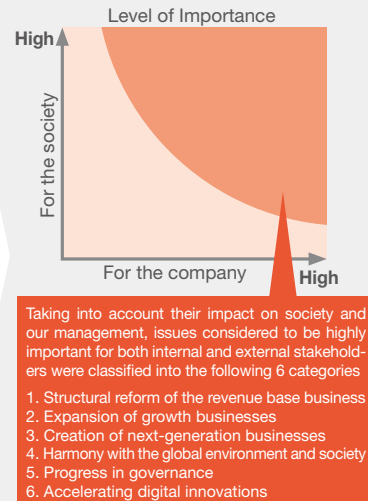
We conducted a survey of a wide range to stakeholders; both internal and external, to assess the importance of each issue.

#### Step 3 Alignment with the company-wide strategy

We ensured consistency with the medium-term management plan and verify priorities and appropriateness of the issues.

#### Step 4 Discussions and decisions by management

The final decision was made after discussion by the Management Committee chaired by the President.



### Relevance Between Materialities and SDGs

We considered the impact on the SDGs through the promotion of key initiatives that are classified as materiality and linked to materiality. We realize that all goals of the SDGs are connected to each other. Therefore, our business activities will bring impact, not only to one specific goal, but also the SDGs as a whole, although the impact itself may vary from one goal to another. In particular, we believe that the following three areas can contribute to the achievement of goals through our business activities.

While working to achieve the goals, there are also aspects in which promoting the achievement of the goals leads to increased use of resources and GHG emissions. We recognize that our business activities might impose burden to the following areas and keep us away from achieving the goals. Therefore, it is necessary to make serious efforts to address them.

#### Areas where goals can especially be achieved



#### Areas that especially need to be addressed due to possibility of risks arising from business activities



We are considering measures to minimize or eliminate the impact of these social issues. Specifically, we will set reduction targets for GHG emissions related to the use of petroleum resources and the risk of climate change, and will consider measures to achieve them. The entire group will also work together to promote the recycling of plastics and other petrochemical products and solar panels.

### Our Group's Efforts to Promote Understanding of SDGs

We will use the SDGs as an opportunity to raise the awareness of each employee so that they can see social issue as their own issues and take initiative in solving them. We will essentially promote the SDGs understanding through workshops and internal information media. The SDGs, which combine the views of experts from various fields, member countries, and various stakeholders, serve as a valuable reference for us in pursuing sustainable growth together with society. We are confident that by raising each employee's awareness of social issues through the SDGs, we will be aware of the link between our business activities and social issues and will create measures to solve them. We will promote understanding of the SDGs through internal communication so that the key points of the SDGs are reflected in future corporate strategy and materiality.

At present, we consider the following to be important points of SDGs.

- Acknowledging from multiple perspectives
- Having a sense of connectedness and inclusiveness
- Thinking in an integrated manner and deriving a solution
- Visualizing and taking action



#### Examples of initiatives in FY2019



On April 3, as part of the new employee education program, we held "SDGs Workshop," in which 181 new employees participated and experienced the essence of SDGs by using card games.



On August 8 and 9, we held "Children's Visit & SDGs Workshop" for employees' children (elementary school students) to promote understanding of SDGs among employees through parent-child communication.

### Signing of the United Nations Global Compact

Idemitsu announced its support for the United Nations Global Compact (UNGC) in July 2019. The 10 principles on human rights, labor, the environment, and anticorruption represent the most fundamental aspects of corporate compliance. Idemitsu group will promote responsible management from a global perspective, respond to requests from stakeholders, and contribute to the creation of a sustainable society.



### Support for TCFD Recommendations



Idemitsu expressed its support for the TCFD (Task Force on Climate Financial Disclosures) recommendations in February 2020. Considering and implementing the risks and opportunities of climate change and their countermeasures in line with the TCFD recommendations are the very essence of our business strategy and we believe that these will lead to contributions to a sustainable society. We will use the TCFD framework to appropriately disclose information to stakeholders and make sincere efforts to address climate change.



## Idemitsu Group's Sustainability

### Dialogue with Stakeholders

Our group's Management Vision is to continue to create new values together with stakeholders. Through responsible dialogues with a wide range of stakeholders, we strive to contribute to sustainable improvement of corporate value and social development through our business activities.

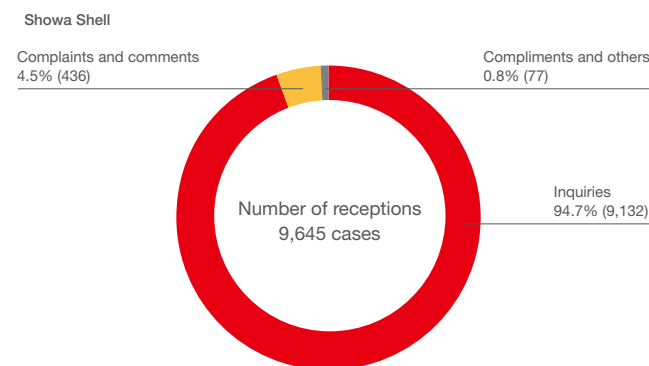
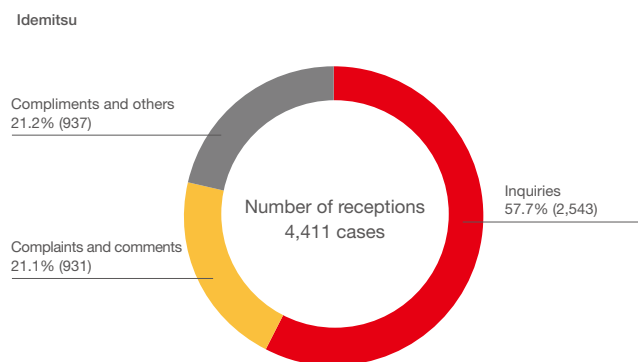
Stakeholders	Initiatives	Details
All	Information disclosure via website	<ul style="list-style-type: none"> <li>We have an official website to provide the latest information on our group in a timely manner. The website has various contact points to promote active communication.</li> </ul>  Official Website
	Information disclosure to individual investors	<ul style="list-style-type: none"> <li>We participate in corporate briefings and IR events for individual investors across Japan, where the executive officer in charge of IR and the general manager of the Finance Department explain the business outline, management strategies and business conditions.</li> <li>The Shareholders' Meeting is held every June, and the "Idemitsu IR Communications" (Japanese only) is issued twice a year.</li> </ul>
Shareholders and investors	Information disclosure to analysts and institutional investors	<ul style="list-style-type: none"> <li>In addition to quarterly financial results briefings, we hold individual IR meetings and small meetings with analysts.</li> <li>Top management visit institutional investors in Europe, North America, and Asia to explain our management strategies and business conditions.</li> </ul>
	Maximizing the role of customer center counters ➡ P.14	<ul style="list-style-type: none"> <li>Customer center counters promptly responds to customer inquiries. For inquiries of a nature, including those related to petroleum products, lubricants and other products, or complaints about customer service at service stations, the quality of gasoline, the driving manners of tanker truck drivers and other matters, the Center works in cooperation with responsible departments to respond appropriately and ensure that necessary improvements are made.</li> </ul>  Customer center counters
Customers	Public relations activities through advertising	<ul style="list-style-type: none"> <li>We continue advertising and publicity campaigns to gain a better understanding of its business operations and other initiatives.</li> </ul>
Corporate customer	Holding customer seminars ➡ P.14	<ul style="list-style-type: none"> <li>We maintain close communication with corporate clients and promotes the development of products and solutions suited to their needs. Our Branches throughout Japan hold seminars for corporate clients to deliver information on the latest technical trends in the energy-saving and environment-related fields as well as on regulatory conditions and other topics directly useful to their operations.</li> </ul>
Community	Holding regional explanatory meetings (report on safety and environmental activities)	<ul style="list-style-type: none"> <li>We hold explanatory meetings once a year or more to which we invite local community representatives, such as heads of neighborhood associations in the vicinity of refineries, complexes and plants. We explain our safety and environment-related efforts and hear the opinions of community members.</li> </ul>
	Implementation of environmental education ➡ P.16, 26, 46	<ul style="list-style-type: none"> <li>We conduct classes mainly for elementary school students in the vicinity of refineries, complexes and plants to promote their better understanding of climate change issues such as global warming.</li> </ul>
Employee	Implementation of environmental protection activities ➡ P.16, 26	<ul style="list-style-type: none"> <li>We participate in cleanup activities in the vicinity of refineries, complexes and plants, as well as local forest and beach conservation activities, contributing not only to the local community but also to interaction among employees.</li> </ul>
	Next Forum ➡ P.35	<ul style="list-style-type: none"> <li>Aiming to become a better company, we hold a company meeting twice a year to provide opportunities for both employees and management to directly communicate, exchange opinions and make proposals to each other on company-wide issues. Forum members selected from each department directly have dialogue with management by delivering candid opinions from workplaces.</li> </ul>
	Conducting an employee engagement survey ➡ P.35	<ul style="list-style-type: none"> <li>The survey is conducted once a year to quantitatively and continuously analyze employees' engagement, mutual trust, and unity. The first survey after the business integration was conducted from late July to early August 2019, covering a total of 10,344 employees from our company and affiliated companies, and receiving responses from 9,970 employees or 96.4%.</li> </ul>



## Idemitsu Group's Sustainability

## Dialogue with Stakeholders

## ■ Number of inquiries and complaints received by Customer center counters (FY2018)



## ■ Major seminars for customers (FY2018)

	Venue	Frequency (times)	Participants	Number of participating organizations	Number of participants (people)
The 15th Apollo Energy Meeting	Tokyo	1	Customers in the coal and petroleum products fields	158	381
Seminar on the Environment and Energy-Saving	Nationwide	28	Customers in the petroleum products field	324	757
Study Session on Cutting Oil	Tokyo and Osaka	2 (1 for each)	Customers in the lubricants field	90	160
Study Session on Thermal Treatment	Tokyo and Osaka	2 (1 for each)		156	283
Practical Seminar on Lubricant Engineering	Chiba	1		9	9
Seminar on Lubricants Basics	Chiba	1		16	22

## Status of inclusion in the ESG Index



In recognition of its efforts in the ESG (Environment, Society and Governance) business, Idemitsu has been selected as a "SNAM Sustainability Index" by Sompo Japan Nipponkoa Asset Management Co., Ltd., for 8 consecutive years since 2012.



## Environmental Management / Environmental Policy

### Concept of the Environment

Idemitsu Group works to reduce the environmental impact caused by our business activities in order to contribute to the creation of a sustainable society with the harmony between economy and environment. We strive to protect the global environment by appropriately allocating and utilizing our resources and actively promoting advanced initiatives to solve environmental problems such as global warming. We conduct business activities based on our policy with criteria to prioritize global and regional environmental protection in all business segments.

#### Environmental Protection Policy

1. Make an effort to prevent leaks and contamination and contribute to environmental protection.
2. Actively contribute to preventing global warming and make an effort to reduce greenhouse gases emitted through our business activities.
3. Effectively use resources in all our business activities.
4. Promote green procurement when purchasing material, construction work, services, etc.
5. Be aware of the importance of biodiversity and actively contribute to its maintenance.
6. Work to develop and diffuse technologies and products that create a better environment.
7. Set environmental objectives based on the annual basic policies, and gather power from within and outside the organization to achieve those objectives.
8. Continually improve the Environmental Management System to enhance environmental performance.
9. Actively disclose environmental information and promote communication with parties outside the company to ensure the reliability of our company and improve corporate value.

### Environmental Management System

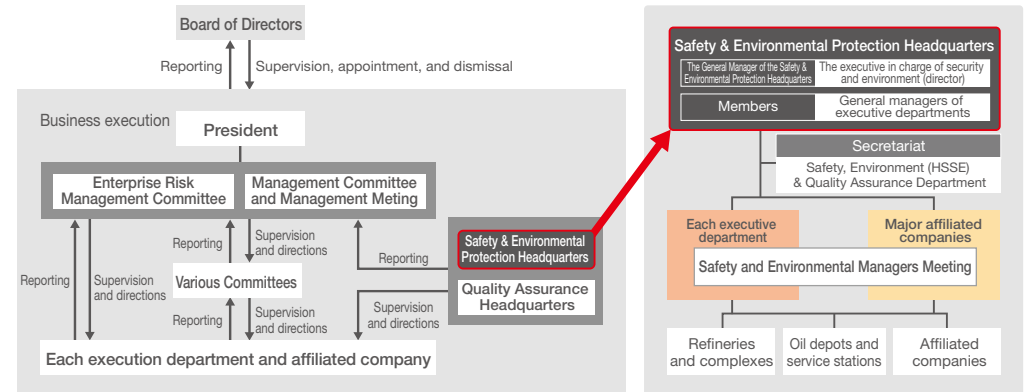
We have positioned "Safety, Health and the Environment" as the foundation of its management, and has established the "Safety & Environmental Protection Headquarters" to promote initiatives to secure and preserve them. It is comprised of the General Manager and the Deputy General Manager of the Safety & Environmental Protection Headquarters, general managers of executive departments that manage business sites, other managers appointed by the General Manager of the Safety & Environmental Protection Headquarters and the secretariat. The executive officer in charge of safety assurance and environmental protection issues (director), who is delegated by the President and Representative Director, serves as the General Manager of the Safety & Environmental Protection Headquarters, overseeing the headquarters as the person in charge of safety, health, and environment, and the Safety, Environment (HSSE) & Quality Assurance Department serves as the secretariat.

The role of the Headquarters is to determine the Medium-term Management plan, the annual basic policies and priority issues on HSSE, to assess and evaluate performance through audits, to maintain, review, and improve the Safety Management System and the Environmental Management System (page 16), and to instruct all executive departments and major group companies to secure management resources necessary to establish, implement, maintain, and continually improve the Management Systems. As a general rule, the Safety & Environmental Protection Headquarters Meeting shall be held once a year in December to decide on our annual basic policies for the next fiscal year.

When establishing and reviewing the Medium-term Management Plan, the annual basic policies and priority issues on HSSE, the secretariat creates a draft proposal putting into consideration of the social environment surrounding HSSE. The secretariat holds deliberations on the draft at the Safety and Environmental Managers Meeting, and get approval at Safety and Environmental Protection Headquarters Meeting. After approval by the General Manager of the Safety & Environmental Protection Headquarters, the secretariat reports them to the Management Committee. If the instructions or opinions from the Management Committee are to be reflected, the General Manager of the Safety & Environmental Protection Headquarters approves the final version again.

Environmental issues, including climate change, are reported to the Board of Directors as necessary and can be oversighted by the Board of Directors.

#### Position of the Safety & Environmental Protection Headquarters within the Corporate Governance System, and the Safety and Environmental Management System





## Environmental Management / Environmental Policy

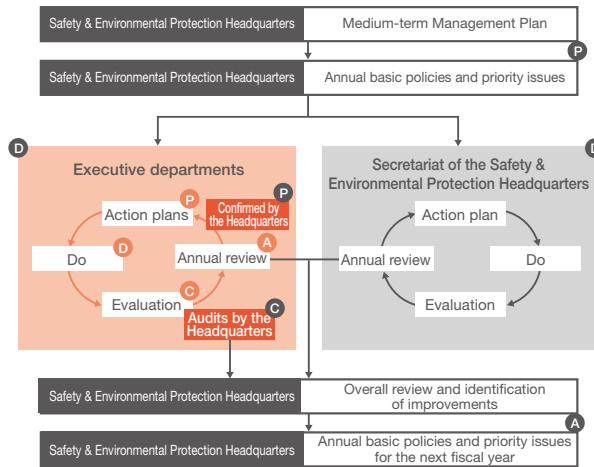
### Environmental Management System

Our environmental management system combines the PDCA cycle for the entire group, centered on the Safety & Environmental Protection Headquarters, with the PDCA cycle for each executive department.

The Safety & Environmental Protection Headquarters formulates the Medium-term Management Plan, the annual basic policies and priority issues on HSSE, on which each executive department formulates action plans.

Each executive department implements the PDCA cycle where it carries out its business activities based on the action plans, and periodically evaluates and reviews the activities to identify improvements, which will be reflected in the action plans for the next fiscal year. The secretariat of the Safety & Environmental Protection Headquarters evaluates and reviews the operation of the environmental management system for the entire group every year, and shares the necessary improvements at the Safety & Environmental Protection Headquarters Meeting at the same timing of the review by the executive departments, in order to make continuous improvements.

#### ■ Environmental Management PDCA Cycle



### Environmental Education and Awareness-Raising Activities

We provide environmental education for the entire group under the Safety & Environmental Protection Headquarters. We are also engaged in activities to raise awareness of environmental protection in line with the United Nations World Environment Day as well as the Environment Month promoted by the Ministry of the Environment. In June 2019, focusing on global warming and the marine plastic waste problem, we conducted light-down campaigns and clean-up activities to raise environmental awareness among employees.

#### ■ Beach clean-up activities (Odaibakihin Seaside, Tokyo)



### Safety and Environmental Audits

In order to confirm and promote the HSSE activities of each executive department, the General Manager of the Safety & Environmental Protection Headquarters or top management visits business sites to provide Safety and Environment-related instructions or safety patrols, or the Safety & Environmental Protection Headquarters secretariat conducts Safety and Environment audits at business sites. In particular, at our company's refineries and plants, the General Manager of the Safety & Environmental Protection Headquarters provides Safety and Environment-related instruction and safety patrol once a year, while the Safety & Environmental Protection Headquarters secretariat conducts Safety and Environment audit once a year. Safety and Environment audits are conducted at other sites every three years in principle. When issues to be improved in safety and the environment are found through audits, the secretariat follows up on each case from the formulation of a response plan to its completion.

### Environmental Compliance (Number of Serious Compliance Violations)

In FY2018, there were no serious compliance violations. We will identify minor compliance violations that are not classified as serious compliance violations, investigate their causes to prevent recurrence, and strive to ensure environmental protection.





## Overview of Environmental Impacts Through Our Business Activities (FY2018)

	Extraction	Crude oil procurement and import	Domestic manufacturing	Domestic transportation	Domestic sales	Consumption	
<b>Idemitsu's performance</b> from April 2018 to March 2019 (12 months)							
<b>Input</b>	Energy 30 PJ Equivalent in crude oil 780 thousand kl	Energy 13 PJ Equivalent in crude oil 336 thousand kl	Energy 139 PJ Equivalent in crude oil 3,584 thousand kl Seawater 1,288,375 thousand t Water 60,130 thousand t	Energy 3.6 PJ Equivalent in crude oil 92.5 thousand kl Water 12.6 thousand t	Energy 0.7 PJ Equivalent in crude oil 18.7 thousand kl	Gasoline 7,691 thousand kl Jet fuel 1,973 thousand kl Kerosene 2,280 thousand kl Diesel oil 6,041 thousand kl Heavy fuel oil A 2,099 thousand kl Heavy fuel oil C 2,143 thousand kl LPG (propane) 2,577 thousand t LPG (butane) 641 thousand t Coal 6,868 thousand t Lubricants 601 thousand kl Basic chemicals 3,493 thousand t Performance chemicals 50 thousand t	
	CO <sub>2</sub> -Scope1 285 thousand t CO <sub>2</sub> -Scope2 73 thousand t CO <sub>2</sub> -Scope3 1,410 thousand t <b>Total CO<sub>2</sub> (Scope 1-3) 1,769 thousand t</b>	CO <sub>2</sub> -Scope1 190 thousand t CO <sub>2</sub> -Scope2 0 thousand t CO <sub>2</sub> -Scope3 740 thousand t <b>Total CO<sub>2</sub> (Scope 1-3) 931 thousand t</b>	CO <sub>2</sub> -Scope1 6,862 thousand t CO <sub>2</sub> -Scope2 363 thousand t CO <sub>2</sub> -Scope3 – thousand t <b>Total CO<sub>2</sub> (Scope 1-3) 7,225 thousand t</b>	CO <sub>2</sub> -Scope1 0 thousand t CO <sub>2</sub> -Scope2 0 thousand t CO <sub>2</sub> -Scope3 253 thousand t <b>Total CO<sub>2</sub> (Scope 1-3) 253 thousand t</b>	CO <sub>2</sub> -Scope1 10 thousand t CO <sub>2</sub> -Scope2 24 thousand t CO <sub>2</sub> -Scope3 0 thousand t <b>Total CO<sub>2</sub> (Scope 1-3) 34 thousand t</b>	CO <sub>2</sub> -Scope1 0 thousand t CO <sub>2</sub> -Scope2 0 thousand t CO <sub>2</sub> -Scope3 79,318 thousand t <b>Total CO<sub>2</sub> (Scope 1-3) 79,318 thousand t</b>	
	SOx 20,450 t NOx 5,959 t	SOx 17,711 t NOx 26,156 t	SOx 6,066 t NOx 6,640 t Soot/dust 231 t Water discharge 1,345,984 thousand t COD 97 t Total nitrogen (TN) 104 t Total phosphorus (TP) 1.5 t Total waste* 209,828 t Final disposal (landfill)* 1,383 t Unit energy consumption* 8.87 l/kl (refinery), 0.396 kl/t (petrochemical plant) *Covering only refineries and petrochemical plants	SOx 3,122 t NOx 3,274 t Water discharge 6.0 thousand t Total waste 18.9 t Final disposal (landfill)* 5.4 t Unit energy consumption* 8.77 kl/million t-km *Covering petroleum products + lubricants + petrochemical products + coal		SOx 91,223 t	
<b>Boundary</b> Crude oil ■ Idemitsu Petroleum Norge AS Coal ■ ENSHAM COAL SALES PTY. LTD. ■ MUSWELLBROOK COAL COMPANY LTD ■ BOGGABRI COAL OPERATIONS PTY LTD ■ TARRAWONGA COAL SALES PTY LTD ■ PT MITRABARA ADIPERDANA Tbk [Scope 3] CO <sub>2</sub> emissions from crude oil and coal extracted from oil fields and mines owned by other companies	■ Idemitsu Tanker Co., Ltd. ■ Astomos Energy Corporation [Scope 3] CO <sub>2</sub> emissions attributable to transportation using ships chartered from other companies	<b>Refineries</b> ■ Hokkaido Refinery ■ Chiba Complex ■ Chiyama Complex ■ Aichi Refinery <b>Other manufacturing</b> ■ BASF Idemitsu Co., Ltd. ■ Omaezaki Factory ■ Keihin Lube Center ■ Moji Lube Center ■ Idemitsu Unitech Co., Ltd. ■ SDS Biotech K.K. ■ Union Oil Industry Co., Ltd. <b>Petrochemical plant</b> ■ Chiba Complex ■ Tokuyama Complex ■ Cray Valley Idemitsu Corporation ■ Prime Polymer Co., Ltd., Anesaki Works		■ Oil depots (Kushiro, Hakodate, Hachinohe, Akita, Shioyama, Hitachi, Tokyo, Hachiojima, Oigawa, Niigata, Fushiki, Kishiwada, Hiroshima, Takamatsu, Kochi, Fukuoka, Nagasaki, Kagoshima) ■ Advanced Technology Research Laboratories ■ Lubricants Research Laboratory ■ Coal & Environment Research Laboratory ■ Offices (Head Office, Branches, Idemitsu Retail Marketing Co., Ltd. Idemitsu Unitech Co., Ltd., SDS Biotech K.K., etc.) [Scope 3] CO <sub>2</sub> emissions attributable to transportation by contracted transport companies and maritime shipping companies		[Scope 3] CO <sub>2</sub> emissions attributable to the consumption of products sold in Japan * Lubricants and petrochemical products that are not used as fuel are not included in the calculation. * The sales volumes of LPG (propane) and LPG (butane) are those of Astomos Energy Corporation. CO <sub>2</sub> emissions are calculated by multiplying the investment ratio in Astomos Energy Corporation (51%).	
<b>Showa Shell's performance</b> from January 2018 to March 2019 (15 months)							
<b>Input</b>	Not aggregated	Energy 12 PJ Equivalent in crude oil 315 thousand kl	Energy 88 PJ Equivalent in crude oil 2,282 thousand kl Seawater 170,600 thousand t Industrial water 40,316 thousand t Tap water 194 thousand t	Energy 2.9 PJ Equivalent in crude oil 75 thousand kl Industrial water 1,479 thousand t Tap water 110 thousand t Underground water 2,102 thousand t	Energy 2.9 PJ Equivalent in crude oil 75 thousand kl	Energy 2.3 PJ Equivalent in crude oil 61 thousand kl Gasoline 9,555 thousand kl Jet fuel 2,501 thousand kl Kerosene 3,248 thousand kl Diesel oil 6,622 thousand kl Heavy fuel oil A 2,255 thousand kl Heavy fuel oil C 1,070 thousand kl LPG (propane) 80 thousand kl LPG (butane) 160 thousand kl Lubricants 344 thousand kl Basic chemicals 1,448 thousand kl Others 8,980 thousand kl	
	Not aggregated	CO <sub>2</sub> -Scope1 0 thousand t CO <sub>2</sub> -Scope2 0 thousand t CO <sub>2</sub> -Scope3 873 thousand t <b>Total CO<sub>2</sub> (Scope 1-3) 873 thousand t</b>	CO <sub>2</sub> -Scope1 6,982 thousand t CO <sub>2</sub> -Scope2 434 thousand t CO <sub>2</sub> -Scope3 – thousand t <b>Total CO<sub>2</sub> (Scope 1-3) 7,416 thousand t</b>	CO <sub>2</sub> -Scope1 32 thousand t CO <sub>2</sub> -Scope2 108 thousand t CO <sub>2</sub> -Scope3 – thousand t <b>Total CO<sub>2</sub> (Scope 1-3) 139 thousand t</b>	CO <sub>2</sub> -Scope1 1.0 thousand t CO <sub>2</sub> -Scope2 4.3 thousand t CO <sub>2</sub> -Scope3 193 thousand t <b>Total CO<sub>2</sub> (Scope 1-3) 198 thousand t</b>	CO <sub>2</sub> -Scope1 0 thousand t CO <sub>2</sub> -Scope2 9.9 thousand t CO <sub>2</sub> -Scope3 102 thousand t <b>Total CO<sub>2</sub> (Scope 1-3) 112 thousand t</b>	CO <sub>2</sub> -Scope1 0 thousand t CO <sub>2</sub> -Scope2 0 thousand t CO <sub>2</sub> -Scope3 63,331 thousand t <b>Total CO<sub>2</sub> (Scope 1-3) 63,331 thousand t</b>
			SOx 2,972 t NOx 2,769 t Soot/dust 95 t Water discharge 196,122 thousand t COD 255 t Total waste 51,296 t Final disposal (landfill) 0 t Unit energy consumption 7.28 l/kl	Water discharge 3,691 thousand t Total waste 23,009 t	Domestic transportation Unit energy consumption 10.1 kl/million t-km		
<b>Boundary</b> N/A	[Scope 3] CO <sub>2</sub> emissions attributable to transportation using ships chartered from other companies	■ Showa Yokkaichi Sekiyu Co., Ltd. ■ TOA Oil Co., Ltd. ■ Seibu Oil Co., Ltd.	■ Showa Shell Sekiyu K.K. ■ Shell Lubricants Japan K.K. ■ Keihin Biomass Power Co., Ltd. ■ Solar Frontier K.K. ■ Nippon Grease Co., Ltd. ■ Shoseki Kako Co., Ltd. (excluding Sunamachi Plant) ■ Rekisei Kagaku K.K.	■ Showa Shell Sekiyu K.K. ■ Wakamatsu Gas Co., Ltd. ■ Japan Oil Network Co., Ltd.	■ Showa Shell Contract Service Stations (approx. 3,000 locations)	[Scope 3] CO <sub>2</sub> emissions attributable to the consumption of products sold in Japan * Lubricants and petrochemical products that are not used as fuel are not included in the calculation.	



## Response to Climate Change

### Basic Stance

Recognizing that responding to climate change is one of the most important issues that must be addressed on a global scale, Idemitsu Group works to solve this issue through both "mitigation" and "adaptation" by making maximum use of our resources.

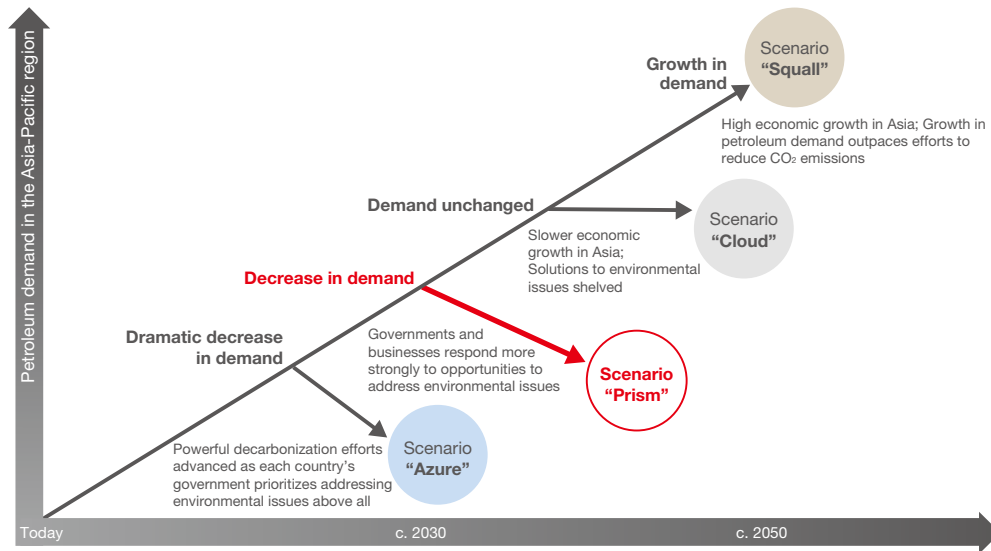
Assuming multiple scenarios of future possible business environments through scenario analysis, we identify risks and opportunities and reflect the results in its strategies and initiatives.

### Scenario Analysis

With regard to risks and opportunities associated with climate change, we used scenario analysis to explore possible energy transition pathways, resulting from decarbonization, development of environmental technologies, and social change, and to examine their impacts on our company.

Scenario analysis identifies energy demand and the effects of climate change in the Asia-Pacific region and the management environment in 2050 is assumed. Four scenarios were prepared, including a scenario in which the increase in energy demand exceeds the trend toward low-carbon emissions due to the high growth of the Asian economy, and a scenario in which the targets of the Paris Agreement are achieved. (Figure below) We are examining specific priority topics with a strong awareness of the "Prism" scenario, in which the company is expected to take stronger environmental measures.

#### ■ Long-term Scenarios for Conditions of the Energy Business in the Run-up to 2050



### Risks and Opportunities

On the basis of scenario analysis, we examined the risks and opportunities we face. As for risks, we recognize a decline in demand for petroleum products due to the spread of electric vehicles (EVs) as well as changes in consumer awareness, and a decline in the reputation of the fossil fuel business. On the other hand, with an increasing demand for renewable energy and environmentally friendly products, we are aware of opportunities to contribute to the realization of a low-carbon society and to expand our businesses.

We aim to reform its business portfolio in order for the Group to become a group of resilient companies by responding to these risks and strengthening its business initiatives to capture opportunities. (Quantitative targets for business portfolio transform on Page 9)

Classification	Matters to be evaluated	Response and initiatives
Transition risk	Decline in demand for petroleum products due to the spread of EVs and changes in consumer awareness	<ul style="list-style-type: none"> <li>Market monitoring and the establishment of optimal production, supply and sales systems</li> <li>Departure from the business portfolio depending on fossil fuel</li> </ul>
	Decline in energy prices due to technological advances	<ul style="list-style-type: none"> <li>Strengthening of the competitiveness of the entire supply chain</li> </ul>
	Possibility of divestment of the coal mining	<ul style="list-style-type: none"> <li>Development of mixed burning technology with black pellets and biomass</li> </ul>
Physical risk	Decline in the reputation of the oil and coal business	<ul style="list-style-type: none"> <li>Strengthening of external engagement</li> </ul>
	Suspension of equipment operation and damage to bases due to abnormal rainfall and others	<ul style="list-style-type: none"> <li>Reinforcement of equipment maintenance and strengthening of the supply chain</li> </ul>
	Impact of sea-level rise on manufacturing and distribution bases	<ul style="list-style-type: none"> <li>Measures such as reinforced seawall and relocation of control rooms</li> </ul>
Opportunity	Expanding demand for renewable energy	<ul style="list-style-type: none"> <li>Development of renewable energy sources in Japan and overseas</li> </ul>
	Strengthening of IMO (International Maritime Organization) regulations	<ul style="list-style-type: none"> <li>Efficiency improvement and reinforcement of refinery facilities</li> </ul>
	Increasing demand for environmentally friendly products with low environmental impact	<ul style="list-style-type: none"> <li>R&amp;D and overseas expansion of lubricants for electric vehicle units, advanced greases, and biological pesticides</li> </ul>
	Increasing demand for energy-saving materials	<ul style="list-style-type: none"> <li>Development of applications for next-generation materials and commercialization of all solid state lithium-ion battery materials</li> </ul>
	Development of distributed energy resource systems	<ul style="list-style-type: none"> <li>Development of and entry into VPP (virtual power plant) control services</li> </ul>
	Development of the circular economy	<ul style="list-style-type: none"> <li>Development of recycling technologies for waste plastics, solar panels, carbon, etc.</li> </ul>
	Advent of the MaaS (Mobility as a Service) society	<ul style="list-style-type: none"> <li>Development leveraging the existing SS (service station) network and entry into ultra-compact EVs</li> </ul>
	Development of natural gas resources	<ul style="list-style-type: none"> <li>Shifting focus from oil to gas</li> </ul>

### Risk Management

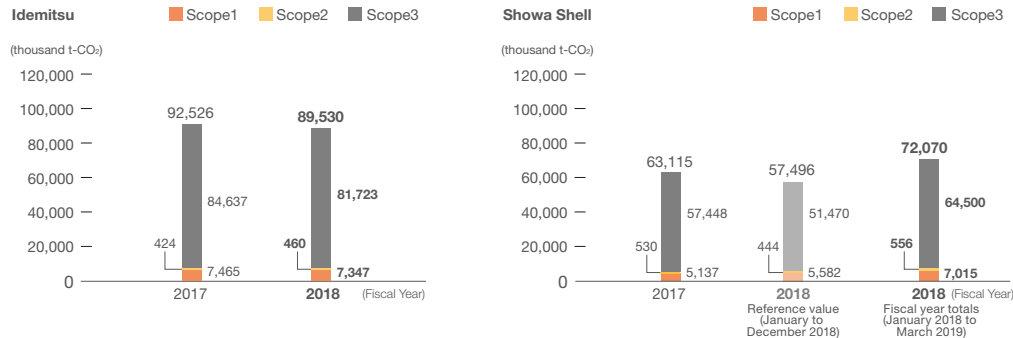
Climate-related risks are also identified and assessed by the Safety & Environmental Protection Headquarters. In addition, receiving advice from outside experts, the Safety & Security Advisory Committee conducts risk management from objective viewpoints. We are also developing a comprehensive risk management system that incorporates ESG elements into our internal control system.

## Response to Climate Change

### Concept of Climate Change Mitigation

We believe it is important to reduce GHG (greenhouse gas) emissions not only our Scope 1 and 2 emissions, but also throughout the value chain including Scope 3, because emissions from the consumption of our products (Scope3) are overwhelmingly larger than those from direct emissions (Scope 1) of refineries, plants, and factories or emissions from electricity use (Scope 2). (Refer to the figure below). In particular, we place top priority on reducing CO<sub>2</sub>, which accounts for more than 90% of Japan's GHG emissions.

#### Our group's CO<sub>2</sub> Emissions by Scope

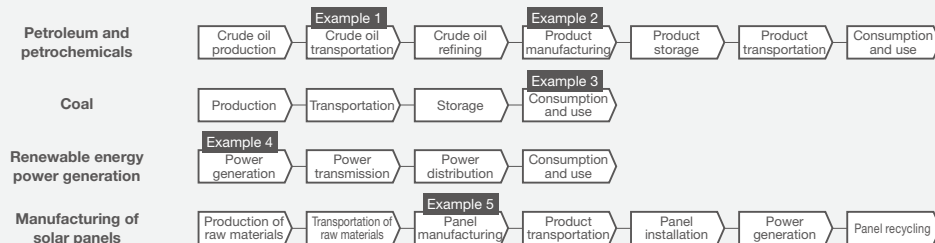


\* Idemitsu's results for FY2017 do not include S3-6 (Business Travel) and S3-7 (Employee commuting).

\* Figures of Showa Shell for 12 months (January – December 2018) listed for reference purpose are not covered by the independent practitioner's assurance.

There are many areas in diversified value chains related to the Idemitsu Group businesses that could contribute to reducing CO<sub>2</sub> emissions. Therefore, we will contribute to reducing CO<sub>2</sub> emissions by strengthening activities in these areas.

#### Value chains in various businesses and examples of contribution to reducing CO<sub>2</sub> emissions



#### Examples of contribution to the reduction of CO<sub>2</sub> emissions in the value chains

- Example 1** Reduction of fuel consumption by improving the operating efficiency of crude oil carriers
- Example 2** Reduction of fuel consumption by promoting energy-saving at refineries
- Example 3** Reduction of coal consumption by introducing a high-efficiency combustion system for coal-fired boilers
- Example 4** Limitation of fossil fuel power generation by expanding renewable energy power generation
- Example 5** Expansion of renewable energy power generation by manufacturing and supplying solar panels

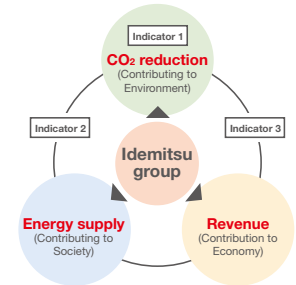
### CO<sub>2</sub> Reduction Targets and Monitoring Indicators

We recognize that environmental contribution by reducing own CO<sub>2</sub> emissions is not enough in the light of corporate sustainability. At the same time, we believe it is important to contribute to society by providing low-carbon energy with a view to the transition to a low-carbon society in the future, and to contribute to the economy by continuing to generate profits while transforming our business portfolio.

In addition to its fossil fuel business, we conduct business related to the development of renewable energy and environmentally friendly products, as well as research aimed at solving social issues. These activities contribute to the reduction of CO<sub>2</sub> emissions on a global scale throughout our value chain. We recognize that this concept will become even more important in the future along with the reduction of CO<sub>2</sub> emissions by the Group.

Based on this recognition, our group will accelerate its efforts to reduce CO<sub>2</sub> emissions by establishing 3 indices.

The CO<sub>2</sub> reduction targets in Indicator 1 are set in Japan's 2030 Nationally Determined Contribution of GHG reduction targets in a way that greatly surpasses the targets of industry associations to which we belong. Indicator 2 is based on the assumption that energy demands of customers are stably supplied. At present, indicator level is set in a manner that is consistent with the levels required by society as outlined in our company's scenario "Prism." However, we will revise the indicator level as needed while monitoring trends in low carbon energy demand by society.



#### Target value

##### Indicator 1 Scope 1 + 2 Reduction of Our group

(An indicator of the extent to which "Scope 1 + 2 emissions" has been reduced through promotion of energy conservation activities at refineries, plants, and factories, etc.)

##### 2030 Target (compared to 2017 levels): 2 million ton-CO<sub>2</sub> (▲15%)

(Calculation formula) = CO<sub>2</sub> emissions in target year (Scope 1 + 2) - CO<sub>2</sub> emissions in base year (Scope 1 + 2)

#### Monitoring indicator

##### Indicator 2 Low carbon level of supplied energy

(Indicator of the extent to which an energy company can reduce the "CO<sub>2</sub> emissions per unit of energy" supplied to society)

##### 2050 Indicator Level (compared to 2017 level): ▲30%

(Calculation formula) =  $\frac{\text{CO}_2 \text{ emissions (Scope 1 + 2 + 3) - CO}_2 \text{ avoided emissions}^*}{\text{Amount of energy supplied to society}}$

##### Indicator 3 Degree of carbon exit from corporate earnings

(Indicator of how the "Revenue level per unit of CO<sub>2</sub>" emitted by the company as a whole is being raised)

(Calculation formula) =  $\frac{\text{Revenue}}{\text{CO}_2 \text{ emissions (Scope 1 + 2 + 3) - CO}_2 \text{ avoided emissions}^*}$

\* CO<sub>2</sub> reduction contribution through the entire value chain

## Response to Climate Change

### Contribution to the Reduction of CO<sub>2</sub> Emissions Through the Entire Value Chains

We are committed to reducing CO<sub>2</sub> emissions on a global scale throughout the entire value chains. We will promote contribution to the reduction of CO<sub>2</sub> emissions through our business activities in the following five areas.

- Promotion of energy conservation and zero emission of power consumption
- Provision of environmentally friendly products and services
- Expansion of renewable energy power generation
- Expanding supply of biomass fuels
- Development and social implementation of innovative technologies

#### Promotion of Energy Conservation and Zero Emission of Power Consumption

We will work to reduce direct and indirect CO<sub>2</sub> emissions from refineries, complexes and plants. We hold monthly meetings at major manufacturing sites to monitor the progress of energy-saving activities and to share best practices.

- Construction of high-efficiency naphtha cracking furnace (Tokuyama Complex)



Reducing energy consumption through new capital investment

- Illustration of renewable energy supply to an offshore oil field



Participation in a joint project with Equinor and other partners

#### Provision of Environmentally Friendly Products and Services

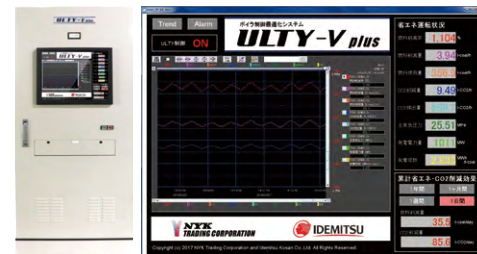
We will contribute to the reduction of CO<sub>2</sub> emissions not only for the Idemitsu Group but also for other companies by providing products and services that help reduce CO<sub>2</sub> emissions.

- Production of domestic solar panels (Kunitomi Plant, Solar Frontier K.K.)



One of the largest production capacities in Japan

- Sale of control optimization system for coal-fired boilers (ULTY-V plus™)



Reduction of coal consumption through optimal operation control

We promote the development of environmentally friendly products in growth business fields as follows:

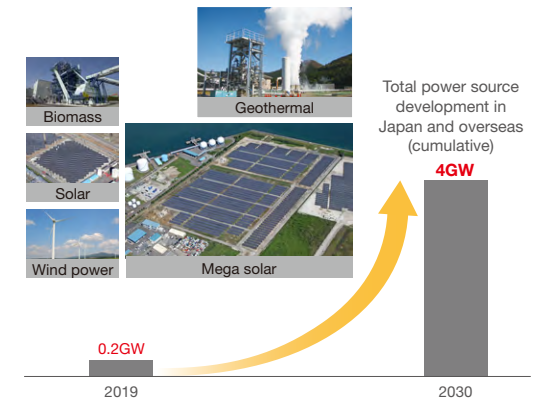
- Products compatible with EVs (high-performance lubricants and grease)
- Development of all-solid lithium-ion rechargeable battery materials
- Next-next-generation high-performance (e.g., ultra-high-efficiency) solar panels
- High-performance grease (utilization of cellulose nanofiber, a biodegradable and safe material derived from wood pulp for food machinery)

#### Expansion of Renewable Energy Power Generation

As of November 30, 2019, we are operating renewable energy power plants generated by solar, geothermal, biomass, and wind power in Vietnam as well as in Niigata, Oita, Kanagawa, and Aomori. We will significantly expand the use of renewable energy sources in Japan and overseas toward 2030 by leveraging our accumulated operational know-how.

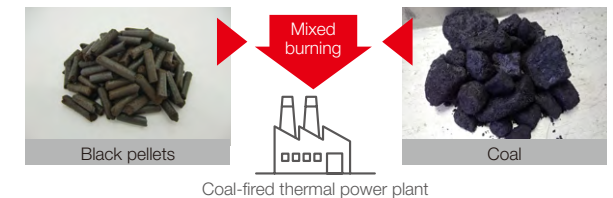
##### Specific Initiatives in FY2019

- Construction of 49.5MW mega solar plant completed in Vietnam
- Decision made to commercialize biomass power generation at the Tokuyama Complex
- Start of 100MW photovoltaic power generation project in Colorado, USA
- Start of 50.5MW photovoltaic power generation project in California, USA



#### Expanding Supply of Biomass Fuels

We are working on the development of black pellets, a biomass fuel that can reduce CO<sub>2</sub> emissions by co-firing with coal at coal-fired power stations. Black pellets are made by pulverizing, drying, roasting, and semi-carbonizing wood. They are superior to conventional white pellets in terms of water resistance and pulverization, and can be handled in the same way as coal. As a result, it is possible to reduce coal consumption and increase the use of renewable energy (black pellet) without modifying existing facilities. We are preparing to expand our business in Southeast Asia, with a demonstration plant in Thailand at the center.





## Response to Climate Change

### Development and Social Implementation of Innovative Technologies

For transition toward a low-carbon society, we will continue to actively promote the practical application of CCS (Carbon dioxide capture and storage), CCU (Carbon dioxide capture and utilization), and CO<sub>2</sub>-free hydrogen, for which technological innovation will be significantly expected in the future, through demonstration tests and other means.

#### ■ Cooperation in the CCS Demonstration Test Project

We have been cooperating in a carbon capture and storage (CCS) demonstration project that the Japan CCS Co., Ltd. has been operating in Tomakomai, Hokkaido Prefecture, on commission from the Ministry of Economy, Trade and Industry (METI) and New Energy and Industrial Technology Development Organization (NEDO). The project is utilizing CCS technology that absorbs CO<sub>2</sub> from gaseous power plant emissions before it can be released into the atmosphere, pumping it deep underground to sequester it. Since April 2016, our role in the project has been to supply the gas containing CO<sub>2</sub> from the Hokkaido Refinery for use in the demonstration project.

#### ■ Participation in the Working Group on the Roadmap for Carbon Recycling Technologies

We participated in the Working Group on the Roadmap for Carbon Recycling Technologies established by the METI. The Working Group was established to promote an effective and rapid development of carbon recycling technologies. The roadmap was compiled in June 2019.

#### ■ Cooperation in the Hydrogen Supply Chain Demonstration Project

We are cooperating in the world's first international hydrogen supply chain demonstration project promoted by the Advanced Hydrogen Energy Chain Association for Technology Development (AHEAD) supported by NEDO. This project will contribute to the utilization of hydrogen, which does not emit CO<sub>2</sub> during combustion, in large-scale power generation. In this project, hydrogen will be separated from liquid (methylcyclohexane), which will be transported from Brunei Darussalam, by a demonstration plant newly constructed by AHEAD on the premises of Keihin Refinery of TOA Oil Co., Ltd., the company of our Group. The plant is scheduled to be operated at the Keihin Refinery from 2020.

#### ■ Conceptual drawing of the dehydrogenation plant

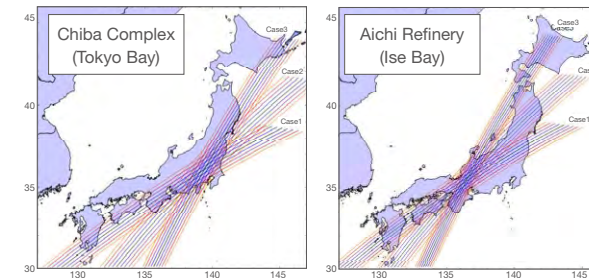


### Concept of Climate Change Adaptation

Climate change is said to be one of the causes of intensification of natural disasters. In the event of a natural disaster, it is extremely important to clarify damage estimates, identify risks, minimize damage to refineries and complexes, and restore operations as soon as possible. In order to enable Idemitsu to fulfill its mission of energy supply, we work on investing in facilities and equipment as a mean of safety assurance management, as well as enhancing emergency responses from the perspective of disaster mitigation in the event of unexpectedly large-scale disasters. We also work on strengthening our ability to respond to disasters by conducting training in collaboration with local governments and industry associations to prepare for operations in the event of a disaster.

Recently, an increasing number of typhoons crossed the country while maintaining their strength. High tides caused by typhoons will increase the risk of flooding at refineries and complexes located in coastal areas. The Idemitsu Group therefore simulates the route along which the largest-scale typhoon expected in the future directly hits refineries and complexes, and analyzes the impact of inundation caused by high tides. Based on this analysis, we are considering investment (installation of flood-prevention walls for seawater pump rooms, reinforcement of tetra-pods for seawalls, etc.) and emergency responses.

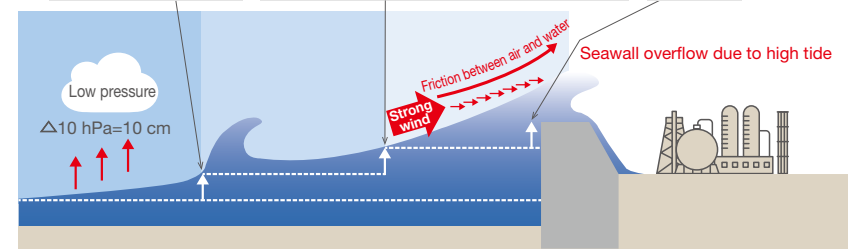
#### ■ Assumption of typhoon tracking maps to be used as a basis for studying high tide damage to refineries and complexes



#### ■ Assumed image of high tide damage

Rise in sea level due to weather conditions

$$= \text{inverse barometer effect} + \text{rise in average sea level due to breaking waves} + \text{wind surge}$$





## Column Idemitsu Group's Technologies Underpinning Innovation

### R&D Structure

Technological innovation is essential to achieving the objectives of the Paris Agreement, an international framework to address climate change issues, where corporate R&D activities will play an important role. Idemitsu Group will continue to create innovations that can contribute to solving various social problems, including climate change, through the development of state-of-the-art technologies in various fields, which it has cultivated over the years through the development of petroleum products.

Our R&D system is comprised of "Advanced Technology Research Laboratories", which supervises corporate R&D, and research laboratories in each department. Each of them carries out specialized development. In addition, we established "Research and Development Committee" as the company-wide organization to not only examine the direction of company-wide research and development, strategies, and issues, but also to deepen cooperation among laboratories and to strengthen technological capabilities.

Segment and name of laboratory		Outline of Initiatives	
Corporate R&D	Advanced Technology Research Laboratories (ATRL)	Environment & Energy Research Laboratory	<ul style="list-style-type: none"> <li>Research on climate change measures (Biofuels and Biochemicals), development of biological materials and high performance materials</li> </ul>
		Frontier Materials Development Laboratory	<ul style="list-style-type: none"> <li>Development of advanced functional materials</li> </ul>
		Advanced Battery Materials Research Laboratory	<ul style="list-style-type: none"> <li>Development of advanced battery materials related with all-solid-state lithium ion battery and lithium recovery technology</li> </ul>
		Atsugi Research Center	<ul style="list-style-type: none"> <li>Research on climate change measures (Artificial photosynthesis and biomass conversion technology)</li> <li>Development of high-performance inorganic thin film semiconductors and devices</li> </ul>
		Analytical Technology Center	<ul style="list-style-type: none"> <li>Providing advanced analysis and solutions to a wide range of fields throughout the group</li> </ul>
Petroleum segment	Technology & Engineering Center	<ul style="list-style-type: none"> <li>Technology development in the area of engineering design, construction, operation, quality control &amp; assurance, and asset integrity &amp; reliability</li> <li>Technology-driven contribution to existing and new businesses</li> </ul>	
Functional materials segment	Lubricants	Lubricants Research Laboratory	<ul style="list-style-type: none"> <li>Research and development of lubricants and tribology (lubrication technology)</li> </ul>
		Idemitsu Lubricants America Corporation R&D Center Idemitsu Lube (China) Co., Ltd. Research & Development Center Idemitsu Lube Asia Pacific Pte. Ltd. R&D Center	<ul style="list-style-type: none"> <li>Local-based research and development of lubricants</li> <li>Global development of lubricants products and technologies with the Lubricants Research Laboratory (Japan) as the mother research center</li> <li>Rapid product development and provision of technical services to meet local needs in overseas</li> </ul>
		Nippon Grease Co., Ltd. Technical Research Laboratory	<ul style="list-style-type: none"> <li>Research and development of grease, rust prevention oil, cutting oil, etc.</li> </ul>
	Advanced materials & Performance chemicals	Performance Materials Laboratories	<ul style="list-style-type: none"> <li>Development of advanced materials through high-value-added petrochemical raw materials</li> </ul>
		Idemitsu Unitech Co., Ltd. R&D Center for Plastic Products	<ul style="list-style-type: none"> <li>Research and development for resin processing product</li> </ul>
		Lion Idemitsu Composites Co., Ltd. Composite Materials Research Laboratory	<ul style="list-style-type: none"> <li>Design, development and analysis of customer grades of composite materials that meet customer needs</li> </ul>
	Electronic materials	Electronic Materials Development Center	<ul style="list-style-type: none"> <li>Research and development of OLED materials</li> </ul>
		Idemitsu OLED Materials Europe AG	
		Advanced Electronic Materials Development Group	<ul style="list-style-type: none"> <li>Research and development of special polycarbonate resins and functional coating agents</li> </ul>
		Inorganic Materials Development Group	<ul style="list-style-type: none"> <li>Research and development of oxide semiconductor materials</li> </ul>
	Asphalt	Bitumen R&D Section	<ul style="list-style-type: none"> <li>Basic research on asphalt and its applications</li> <li>Development of high performance asphalt</li> </ul>
	Agri-Bio	Agri-Bio Technology Section	<ul style="list-style-type: none"> <li>Development of active ingredients for pesticides and feed additives derived from microorganisms and natural products</li> </ul>
		SDS Biotech K.K. Tsukuba Research & Technology Center	<ul style="list-style-type: none"> <li>Development of safe and useful products for the protection of livestock and plants and prevention of diseases</li> </ul>
Lithium-ion battery material	Battery Material Development Center	<ul style="list-style-type: none"> <li>Development of sulfide-based solid electrolytes for practical application of all-solid-state lithium ion batteries</li> </ul>	
Power and renewable energy segment	Photovoltaic power generation	Office of Next Generation Product Development	
		Solar Frontier K.K. Atsugi Research Center	<ul style="list-style-type: none"> <li>Research and development of CIS solar cells</li> </ul>
Resources segment	Coal	Coal & Environment Research Laboratory	<ul style="list-style-type: none"> <li>Only private research institute specializing in coal</li> <li>Provision of technology services that anticipate needs and development of clean coal technologies to meet the needs of a low-carbon society</li> </ul>

### External Evaluation of Idemitsu Group's Technologies

Our technologies are highly appreciated by the international community. As an example, Idemitsu and Showa Shell have been ranked 1st and 3rd respectively in the world among the industry subgroups\* for three consecutive years since 2017 in the "Opportunities in Clean Tech," which is one of the items evaluated by MSCI, an ESG evaluation organization. (Table below)

We will continue to make the most of its advanced R&D capabilities to contribute to the solution of global issues through collaboration with others.

\* Within GICS (Global Industry Classification Standard), Idemitsu Group belongs to the Oil & Gas Refining and Marketing industry subgroup.

#### Ranking of companies in the sector of MSCI's "Opportunities in Clean Tech"

Ranking	2019	2018	2017
1	Idemitsu	Idemitsu	Idemitsu
2	Company A	Company A	Company A
3	Showa Shell	Showa Shell	Showa Shell
4	Company B	Company B	Company D
5	Company C	Company C	Company B

### Examples of Specific Initiatives

#### Development of CIS solar cell technology

At the Atsugi Research Center of Solar Frontier K.K., we are engaged in leading-edge research and development related to CIS solar cells, aiming to improve energy conversion efficiency at both the research and commercial production levels, as well as developing new applications and developing advanced next-generation products with market development potential.

In January 2019, a joint research project with the NEDO (New Energy and Industrial Technology Development Organization) led to the achievement of a world record energy conversion efficiency of 23.35% for the cadmium-free CIS solar cell (Cd-Free CIS solar cell)'s cell (about 1 cm<sup>2</sup>). This record is approximately 0.4 percentage points higher than the highest conversion efficiency of 22.9% (Achieved by our company in November 2017) for cadmium-containing CIS solar cells, and represents the highest conversion efficiency in the world for all CIS solar cells. By applying basic technologies, we are working to lower costs by increasing the output of panels and to deliver environmentally friendly and economical products to customers.

#### Utilization of Collagen and Mucin Derived from Jellyfish

These days, jellyfish are popular in aquariums because of their beautiful appearance. However, jellyfish may have a negative impact on fisheries and businesses of companies along the coast. The use of jellyfish as a resource is desired worldwide.

Jellyfish Research Laboratories, Inc. (Kanagawa Prefecture), the company of our Group, has invented a technology to utilize useful ingredients made from jellyfish. Collagen derived from jellyfish has been confirmed to be effective in promoting the regeneration of epidermis which is considered to be difficult to regenerate, and is expected to be used in the fields of regenerative medicine and beauty treatment. Mucin derived from jellyfish is also expected to have potential as a treatment for knee osteoarthritis.

By taking advantage of the characteristics of jellyfish, we will create the future of life science and contribute to the quality of life of people around the world.



## Response to Climate Change

### Idemitsu Group's Information Disclosure on Climate Change

We disclose information in accordance with TCFD\* recommendations. We will proactively disclose information to stakeholders by accurately identifying risks and opportunities of climate change in our business through our information disclosure framework.

Area	TCFD recommendations	Idemitsu's disclosure	Page for disclosure
Governance	1. Describe the board's oversight of climate-related risks and opportunities	<ul style="list-style-type: none"> <li>Governance system for climate change</li> </ul>	▶ P.15
	2. Describe management's role in assessing and managing climate-related risks and opportunities	<ul style="list-style-type: none"> <li>Governance system for climate change</li> </ul>	▶ P.15
Strategy	1. Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term	<ul style="list-style-type: none"> <li>Identification of risks and opportunities</li> <li>Responding to risks and opportunities</li> </ul>	▶ P.18
	2. Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning	<ul style="list-style-type: none"> <li>Identification of risks and opportunities</li> <li>Responding to risks and opportunities</li> </ul>	▶ P.18
	3. Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario	<ul style="list-style-type: none"> <li>Scenario Analysis</li> <li>Business portfolio reform</li> </ul>	▶ P.7, 9, 18
Risk management	1. Describe the organization's processes for identifying and assessing climate-related risks	<ul style="list-style-type: none"> <li>Climate change risk assessment process (Evaluation by each business site and the Safety &amp; Environmental Protection Headquarters)</li> </ul>	▶ P.15, 16, 18
	2. Describe the organization's processes for managing climate-related risks	<ul style="list-style-type: none"> <li>Climate change risk assessment process (Report to the Management Committee and evaluation)</li> </ul>	▶ P.15, 16, 18
	3. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management	<ul style="list-style-type: none"> <li>Climate change risk assessment process</li> </ul>	▶ P.15, 16, 18
Metrics and Targets	1. Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process	<ul style="list-style-type: none"> <li>GHG emissions absolute amount and per unit of production</li> </ul>	▶ P.19
	2. Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 GHG (greenhouse gas) emissions, and the related risks	<ul style="list-style-type: none"> <li>GHG emissions reduction targets</li> </ul>	▶ P.19
	3. Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets	<ul style="list-style-type: none"> <li>GHG emissions reduction targets</li> </ul>	▶ P.19

\* TCFD: The Task Force on Climate-Related Financial Disclosures established by the Financial Stability Board in 2015

## Response to Circular Economy

### Concept of Circular Economy

Idemitsu Group recognizes that the goal of realizing a circular economy is to transform the conventional mass production, mass consumption and mass disposal society into a society that minimizes the consumption of natural resources and reduces the burden on the environment as much as possible. We are promoting a variety of initiatives to ensure that renewable resources are consumed within their renewable capabilities, that resources without renewable capabilities are consumed in the most effective manner, or can be shifted to other renewable resources while reducing their use over a long period of time.

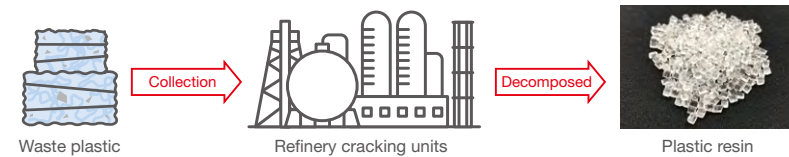
### Examples of Specific Initiatives

We aim to realize sustainable circular business by reusing renewable resources as much as possible and incorporating them into its business supply chain.

Specifically, we are engaged in plastic recycling, solar panel recycling, and, from a long-term perspective, carbon recycling, which treats CO<sub>2</sub> as a resource.

### Plastic Recycling

We are working on the practical application of chemical recycling, in which collected plastics are decomposed and returned to chemical raw materials by using the cracking units for petroleum refining.



The problem of marine plastic waste involves the related all companies in the supply chain. Idemitsu has joined two industry associations and started sharing and exploring information. We are also working to raise awareness of the problem of marine plastics waste within the Company.

#### ■ Japan Initiative for Marine Environment (JaIME)

JaIME was established by five Japanese chemical-related associations (Japan Chemical Industry Association, The Japan Plastics Industry Federation, Plastic Waste Management Institute, Japan Petrochemical Industry Association, and Vinyl Environmental Council).

#### ■ Clean Ocean Material Alliance (CLOMA)

CLOMA is affiliated by 250 companies in the plastic supply chain.

### Recycling of Solar Panels

In collaboration with NEDO, Solar Frontier K.K. of our Group is working on the development of CIS solar cell recycling technology. This recycling technology is characterized by the separation and collection of each material. It has been confirmed that more than 90% of rare metals such as indium and selenium contained in the battery can be collected. We will apply this treatment technology to the recycling of crystalline silicon solar panels. In the future, we plan to construct a pilot line at the Kunitomi Plant, where we will study the feasibility of solar panel recycling technology.



## Response to Circular Economy

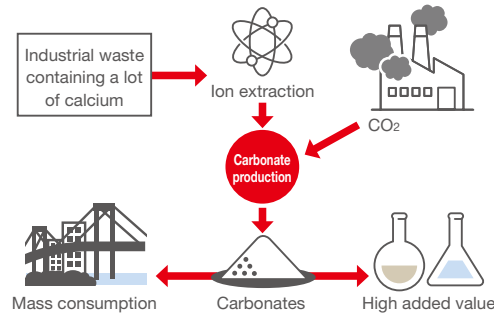
### Carbon Recycling

Considering CO<sub>2</sub> as a carbon resource, we promote carbon recycling by producing various carbon compounds from CO<sub>2</sub> and reusing them for chemicals, fuel, minerals, etc.

Idemitsu is a member of the Working Group on the Roadmap for Carbon Recycling Technologies organized by the Japanese government, and is engaged in research and development of carbonation, artificial photosynthesis, and other technologies.

#### ● Carbonate production

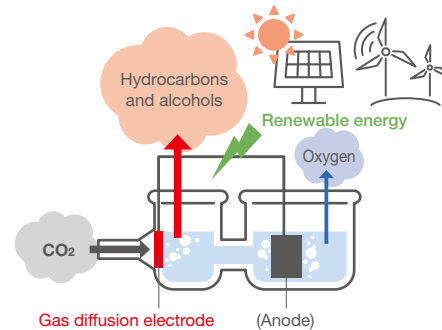
Our company, with the participation of Ube Industries, Ltd., JGC Corporation, and several universities, established the "CCSU (Carbon dioxide Capture and Storage with Utilization) Study Group" as an industry-university collaboration to develop new technologies that convert CO<sub>2</sub> emitted from thermal power plants and factories into resources by utilizing industrial waste containing a large amount of calcium. As the Japanese government promotes the development of technologies for CO<sub>2</sub> recovery and other measures to combat global warming, we are working on the development of new technologies that utilize industrial waste containing high levels of calcium and other substances to react with CO<sub>2</sub> for production of carbonate and added-value materials.



#### ● Artificial photosynthesis

We have succeeded in the direct synthesis of methane and other hydrocarbons from water and CO<sub>2</sub> using a gas diffusion electrode loaded with our original catalysts.

We will continue developing the gas diffusion electrode to advance research on artificial photosynthesis. By 2030, we will establish technology to produce valuable materials such as hydrocarbons and alcohols from water and CO<sub>2</sub> using renewable energy sources with high efficiency. Through the reuse of CO<sub>2</sub>, we will contribute to realizing a sustainable society.



## Waste Reduction

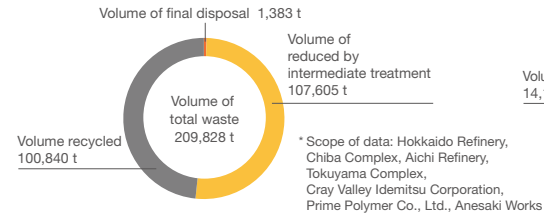
### Concept of Waste Reduction

Idemitsu Group works on reducing environmental impact by reducing the volume of industrial waste generation and by promoting the reuse of raw materials and the utilization of recycled raw materials from the perspective of the effective use of resources.

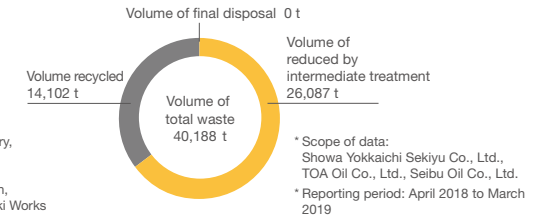
Major wastes generated by our businesses include waste catalysts used in refining processes at refineries, sludge from tank cleaning, and sludge from wastewater treatment facilities. On the other hand, we reduce the volume of these wastes and make them harmless through intermediate treatment such as incineration, dehydration and dissolution, and promote their reuse as raw material for cement, continuing "zero emissions" to reduce the final disposal volume of wastes to 1% or less.

#### ■ Breakdown of industrial waste disposal (FY2018)

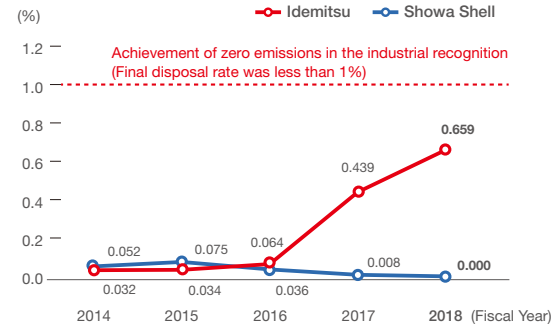
Idemitsu



Showa Shell



#### ■ Final disposal rate at group refineries



\* The final disposal rate at Idemitsu increased significantly since FY2017. This was mainly due to the disposal of materials generated by the removal of the oil refining equipment (suspended in March 2014) and others in Tokuyama Complex. The disposal is scheduled to be completed by FY2020.

\* Scope of Idemitsu's data: Hokkaido Refinery, Chiba Complex, Aichi Refinery, Tokuyama Complex, Cray Valley Idemitsu Corporation, Prime Polymer Co. Ltd., Anesaki Works

\* Scope of Showa Shell's data: Showa Yokkaichi Sekiyu Co., Ltd., TOA Oil Co., Ltd., Seibu Oil Co., Ltd.





## Water Management

### Concept of Utilization of Water Resources

The problem of water resources in the world has become serious. It is said that more than two billion people are unable to obtain safe drinking water. Japan has abundant water resources, and so it is rare to face a severe water shortage problem. However, there are many countries and regions overseas where water resources are depleted. Idemitsu Group is committed to the efficient use of water resources, as we operate business in areas with high water stress.

In addition to conventional water risk assessments, we have begun to identify and review risks of droughts and flood at some of our complexes, with reference to AQUEDUCT issued by the World Resources Institute (WRI) and information provided by the Ministry of Land, Infrastructure and Transport. In Japan, the risk of flooding is high, and damage is expected to increase due to climate change in the future. Therefore, we are working to strengthen related infrastructure facilities. (Concept of Climate Change Adaptation on page 21)

### Examples of Specific Initiatives

#### Strengthening of Water Recycling at Refineries and Complexes

Our refineries and complexes, which use a large amount of water, are working on reducing their water consumption.

A certain amount of water (seawater and fresh water) is required to cool the process fluid during the oil refining process at refineries. Fresh water (hot water) used for cooling is circulated in an air-cooled condenser for cooling, and is used again as cooling water for the process fluid to reduce the impact on the natural environment. As a water user, we will make further efforts to recycle water resources.

#### Recycling of industrial water (FY2018)

	Idemitsu	Showa Shell
Industrial water intake (thousand t)	59,281	40,316
Recycled (thousand t)	543,645	1,144,821
Recycling rate (%)	90.2	96.6

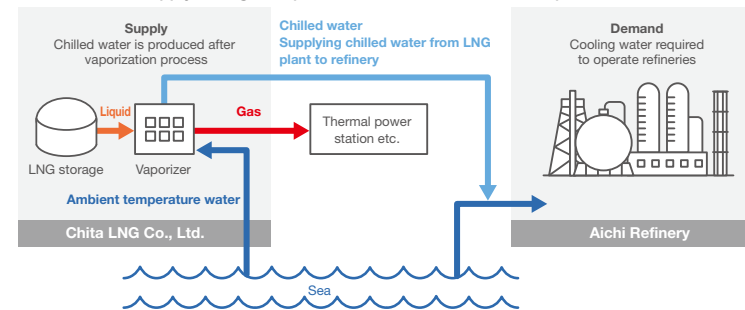
\* Scope of Idemitsu's data: Hokkaido Refinery, Chiba Complex, Aichi Refinery, Tokuyama Complex, Cray Valley Idemitsu Corporation, Prime Polymer Co., Ltd., Anesaki Works

\* Scope of Showa Shell's data: Showa Yokkaichi Sekiyu Co., Ltd., TOA Oil Co., Ltd., Seibu Oil Co., Ltd.

### Reduction of Water Consumption by Collaboration with Other Companies

At Aichi Refinery, we are working on reducing water consumption by sharing cold water with other companies through cooperation within the industrial complex. This is an initiative supported by the Research Association of Refinery Integration for Group-Operation (RING). By effectively using the chilled water discharged from the LNG vaporizer of Chita LNG Co., Ltd., which is adjacent to the complex, as process cooling water, we are contributing to the reduction of water intake in the Chita area as a whole.

#### ■ Chilled water supply through cooperation within the industrial complex





## Conservation of Biodiversity

### Concept of Conservation of Biodiversity

It is said that there are a wide variety of living organisms on the earth, which intertwine complicatedly to form an ecosystem which absorbs various external changes to restore the original state. Idemitsu Group recognizes that it is an important mission for a company to hand over this ecosystem to future generations and maintain an environment in which diverse living organisms can continue to live. For this reason, we pay attention to air, water, and soil, which are indispensable for living organisms, from the stage of designing our various production facilities.

### Examples of Specific Initiatives

#### Establishment of Green Belts at Refineries

Our refineries developed and maintain significantly larger green belts than the area required by law when it constructed its refineries. This initiative is based on the recognition that we must coexist in harmony with society, including local residents, and minimize the environmental impact when operating its refineries.

Our initiative like this is highly evaluated by external organizations. Hokkaido Refinery and Aichi Refinery have received the highest grade of 5 (Superlative Stage) in the "Social and Environmental Green Evaluation System (SEGES)" organized by the Organization for Landscape and Urban Green Infrastructure.



Source: SEGES website (Japanese only) <https://seges.jp/>

#### Green belt of Hokkaido Refinery



#### Green belt of Aichi Refinery



### Collaboration with External Institutions and Organizations

Since December 1996, Hokkaido Refinery has been using the Corporate Forest Program started by the Forest Agency, in which corporates participate in the upkeep of national forests to contribute to society and the environment. We named our watershed protection forest "Idemitsu Appenai Watershed Forest" and manage it appropriately. In addition, Aichi Refinery is a key active member of the "Inochi wo Tsunagu Project\*" which aims to improve biodiversity and promote the formation of ecosystem networks.

Kunitomi Plant of Solar Frontier K.K. uses groundwater of Aya Town, Miyazaki Prefecture. Every year since 2012, the Plant has participated in the "Teruha no Mori Ongaeshi Project" which protects and restores the large laurel forest in Aya Town. The large laurel forest in Aya Town is home for many rare and endangered species, helping protect these animals and plants.

\* "Inochi wo Tsunagu Project": An organization mainly comprising Aichi municipalities, companies, university students, and experts that aims to increase greenery and create easily habitable environments for wildlife

In addition, in the Tokyo area, we participate in the Public-Private Cooperation Forum for Tokyo Bay Restoration where we work on restoring biodiversity in Tokyo Bay by creating evaluation indicators for Tokyo Bay restoration and conducting surveys on water quality.

#### Idemitsu Appenai Watershed Forest



#### Teruha no Mori Ongaeshi Project



### Providing Students with Opportunities for Environmental Education

General public access to our facilities is strictly restricted because our production bases, namely refineries and complexes, handle hazardous materials. This has allowed the green spaces in the facilities to become rich in biodiversity, function as sanctuaries for birds and other small animals, and in some spots, become ideal habitats. Hokkaido Refinery, Chiba Complex, and Aichi Refinery use these green spaces and natural parks to provide opportunities for environmental education to children and students of local elementary schools.

#### Wild bird watching (Hokkaido Refinery)



#### Nature observation (Aichi Refinery)



### Conservation of Rare Species

Every time we install new equipment at our refineries and complexes, we conduct an environmental assessment to shelter any endangered plants species that have been identified through ecosystem surveys. Currently, at Aichi Refinery we are working to conserve the endangered plant species, "Salvia plebeia" (designated as a quasi-endangered species by the Ministry of the Environment), which was discovered when new facility construction was undertaken.



## Conservation of Biodiversity

### Ballast Water Measures in Ocean-Going Transportation

Our ocean-going tankers have undertaken various activities in accordance with the Ballast Water Management Convention (International Convention for the Control and Management of Ships' Ballast Water and Sediments), which came into effect on September 8, 2017, and guidelines of the IMO (International Maritime Organization) to prevent the ecosystem destruction induced by foreign species. Ballast water is water (seawater) used as weight for ship stabilization. The convention mandates the installation of ballast treatment systems within a certain timeframe. In line with this rule, tankers (VLCC) managed by Idemitsu Tanker are being installed with said systems. As of January 31, 2020, we finished installing electrolytic or filter/disinfectant treatment systems on APOLLO DREAM and APOLLO ENERGY.

To prevent disturbance of local ecosystem at ports of call, we use ballast water treatment systems to eliminate the harmful aquatic life and pathogens in ballast water. Or during transit our ocean-going tankers replace the seawater they take in as ballast water when leaving port with water from the open ocean, which has little impact on local ecosystems.

## Land Use Change

### Concept of Land Use Change

Soil, along with air and water, is an important element in considering the global environment. In recent years, along with world population growth, areas that used to be green belts have been developed and converted to agricultural land at an accelerated rate. The United Nations has pointed out the importance of initiatives related to Land Use, Land-Use Change and Forestry (LULUCF). These land-use changes will result in the loss of CO<sub>2</sub> sinks and have serious adverse effects from the perspective of climate change. In addition, nutrient-rich topsoil, which had been protected from wind and rain by forests, was lost due to deforestation, leading to desertification.

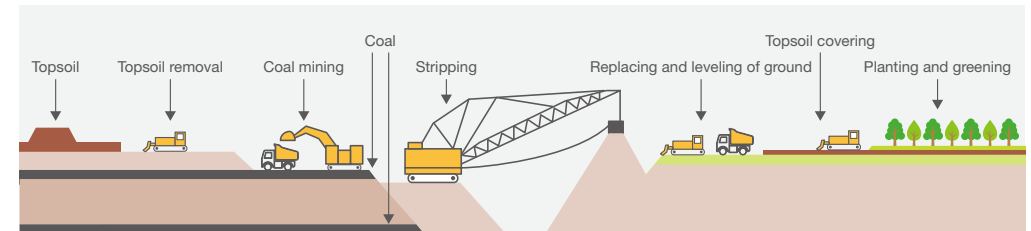
Idemitsu Group is actively engaged in projects to minimize the environmental impact of changes in land use.

### Examples of Specific Initiatives

#### Rehabilitation of Coal Mines in Australia

We are engaged in coal mining business in Australia. At a mining site where mining has been completed, we are rehabilitating the mining site by replacing stockpiled topsoil and plants to restore its original and natural state. In addition, we have acquired around 11,000 ha of land surrounding our mines, and protects plants and animals to maintain biodiversity. These measures have minimized the impact of the land use associated with the coal mining project on the surrounding environment.

#### Rehabilitation of the mining site



\* Prepared by Idemitsu based on data provided by Japan Coal Energy Center

#### State of rehabilitation





## Management of Chemical Substances and Reduction of Hazardous Substances

### Concept of Management of Chemical Substances and Reduction of Hazardous Substances

Idemitsu Group, which manufactures and supplies petrochemical raw materials and products, has established the "General Principles of Quality Assurance" and works on improving the safety of production process workers and product users by conducting prior risk assessment of chemical substances, reducing and eliminating hazardous substances from production processes and products, and providing information on chemical substances contained in products. In order to minimize not only the impact on human health but also the negative impact on the ecosystem and the environment, we comply with stricter regulations on chemical substances in Japan and overseas.

### Measures for Management of Chemical Substances and Reduction of Hazardous Substances

#### Management of PRTR-Designated Substances

Among the chemical substances regulated by the PRTR Law<sup>\*1</sup>, benzene, toluene, xylene, normal hexane and other highly volatile substances contained in crude oil, petroleum products, petrochemical raw materials will be partially evaporated into the atmosphere as VOC<sup>\*2</sup> whenever oil is transferred into or removed from storage tanks as well as when it is loaded onto tanker trucks and ships. To minimize such VOC emissions, the Idemitsu Group stores these chemicals in floating roof tanks that reduce evaporation, and carries out measures aimed at ensuring VOC recovery during transport. Chemical substances transferred to locations outside complexes are disposed of in compliance with the Waste Disposal and Public Cleansing Law.

\*1 PRTR: Pollutant Release and Transfer Register

\*2 VOC: Volatile Organic Compounds

#### Discharge and transfer of PRTR-Designated substances (Idemitsu FY2018 Results)

CAS No.	Substance name	Unit	Discharged amount			Transferred amount	Total
			Atmosphere	Water body	Soil		
1	water-soluble compounds of zinc	t	0.0	0.8	0.0	0.0	0.8
13	acetonitrile	t	0.0	0.0	0.0	1.1	1.1
20	2-aminoethanol	t	0.0	0.0	0.0	50.6	50.6
33	asbestos	t	0.0	0.0	0.0	34.4	34.4
37	4,4'-isopropylidenediphenol (commonly known as bisphenol A)	t	0.0	0.0	0.0	3.0	3.0
53	ethylbenzene	t	7.4	0.0	0.0	0.8	8.2
80	xylene	t	13.7	0.0	0.0	59.0	72.7
104	chlorodifluoromethane	t	0.8	0.0	0.0	0.0	0.8
186	dichloromethane	t	0.4	0.0	0.0	10.7	11.1
190	dicyclopentadiene	t	0.3	0.0	0.0	0.0	0.3
232	N, N-dimethylformamide (DMF)	t	0.0	0.0	0.0	9.5	9.5
240	styrene	t	28.0	0.0	0.0	6.5	34.5
262	tetrachloroethylene (TCE)	t	0.0	0.0	0.0	1.4	1.4
296	1,2,4-trimethylbenzene	t	1.1	0.0	0.0	0.0	1.1
297	1,3,5-trimethylbenzene	t	0.2	0.0	0.0	0.0	0.2
300	toluene	t	19.4	0.0	0.0	117.6	136.9
302	naphthalene	t	0.1	0.0	0.0	0.0	0.1
308	nickel	t	0.0	0.0	0.0	17.0	17.0
309	nickel compounds	t	0.0	0.0	0.0	0.6	0.6
321	vanadium compounds	t	0.0	0.0	0.0	29.0	29.0

CAS No.	Substance name	Unit	Discharged amount			Transferred amount	Total
			Atmosphere	Water body	Soil		
349	phenol	t	0.2	0.0	0.0	6.7	6.9
389	hexadecyltrimethylammonium chloride	t	0.0	9.8	0.0	0.0	9.8
392	n-hexane	t	40.4	0.0	0.0	2.6	43.0
400	benzene	t	4.3	0.0	0.0	0.0	4.4
406	polychlorinated biphenyls (PCB)	t	0.0	0.0	0.0	4.2	4.2
411	formaldehyde	t	0.0	0.0	0.0	33.6	33.6
412	manganese and its compounds	t	0.0	0.0	0.0	8.0	8.0
453	molybdenum and its compounds	t	0.0	0.0	0.0	22.0	22.0

\* Scope of data: Hokkaido Refinery, Chiba Complex, Aichi Refinery, Tokuyama Complex, Cray Valley Idemitsu Corporation, Prime Polymer Co. Ltd., Anesaki Works, BASF Idemitsu Co., Ltd., Omaezaki Factory, Advanced Technology Research Laboratories, Technology & Engineering Center

\* Chemicals are not listed if the total volume of discharge and transfer is less than 0.1 ton per year. Figures presented above may not be consistent with the totals since they are rounded off to the nearest one decimal place.

#### Discharge and transfer of PRTR-Designated substances (Showa Shell FY2018 Results)

CAS No.	Substance name	Unit	Discharged amount			Transferred amount	Total
			Atmosphere	Water body	Soil		
33	asbestos	t	0.0	0.0	0.0	0.2	0.2
53	ethylbenzene	t	1.0	0.0	0.0	0.0	1.0
80	xylene	t	5.9	0.0	0.0	0.0	5.9
243	dioxins	mg-TEQ	0.00	0.26	0.00	0.00	0.26
296	1,2,4-trimethylbenzene	t	0.6	0.0	0.0	0.0	0.6
297	1,3,5-trimethylbenzene	t	0.1	0.0	0.0	0.0	0.1
300	toluene	t	24.8	0.0	0.0	0.0	24.8
392	n-hexane	t	67.0	0.0	0.0	0.0	67.0
400	benzene	t	7.7	0.0	0.0	0.0	7.7

\* Scope of data: Showa Yokkaichi Sekiyu Co., Ltd., TOA Oil Co., Ltd., Seibu Oil Co., Ltd.

\* Reporting period: April 2018 to March 2019

\* Chemicals are not listed if the total volume of discharge and transfer is less than 0.1 ton per year. Figures presented above may not be consistent with the totals since they are rounded off to the nearest one decimal place.

#### Controlling PCBs

In accordance with the Law concerning Special Measures for Promotion of Proper Treatment of PCB Wastes, at refineries and complexes, we appropriately store and manage oil containing polychlorinated biphenyls (PCBs) as well as transformers or other equipment that contain these substances. Under the same Law and the national Basic Plan for PCB Waste Treatment, final deadlines have been set for the completion of the treatment of all PCB waste and, accordingly, we are steadily carrying out the processing of such waste.

#### Managing CFCs

In accordance with the Act for Rational Use and Proper Management of Fluorocarbons, which came into effect on April 1, 2015, we have been implementing steps to prevent the leakage of fluorocarbons. The Safety, Environment (HSSE) & Quality Assurance Department undertakes annual inspections on the progress of changeover to non-fluorocarbon coolants at our facilities. As our refineries and complexes house a significant portion of our large-scale processing equipment containing CFCs and HCFCs, which damage the ozone layer, we have been replacing these equipment during the performance of major shutdown maintenance, aiming to eliminate the use of CFCs and HCFCs by March 2026.



## Pollution Prevention

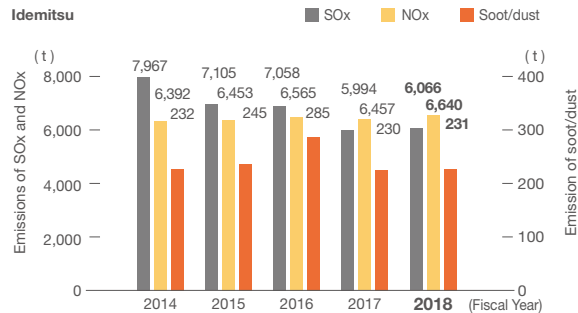
### Concept of Pollution Prevention

To reduce the environmental impact of our business, we not only comply with environment-related laws but also autonomously take preventive measures in accordance with internal rule (Basic Essential Points on Health Safety Security and Environment (HSSE)). Furthermore, in order to contribute to pollution prevention not only within the Company but also within society as a whole, we feed back Idemitsu Group's knowledge and experience to committees of the Ministry of the Environment and Keidanren (Japan Business Federation) that review the application of the Water Pollution Control Law and the Soil Contamination Countermeasures Law, where we work on developing research and analysis methods and reducing the environmental impact by strictly preventing emissions of pollutants.

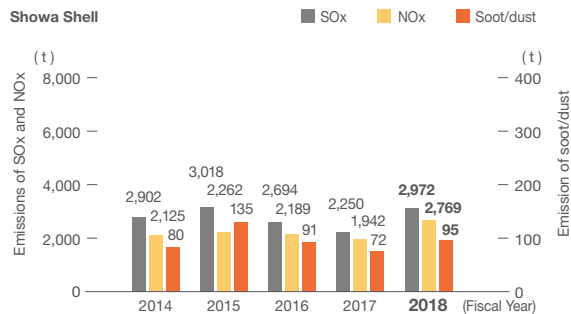
### Measures to Prevent Air Pollution

Air pollutants discharged through our businesses include sulfur oxides (SOx), nitrogen oxides (NOx), and soot/dust emitted from boilers and furnaces as well as volatile organic compounds (VOCs) from crude oil or petroleum product storage tanks and tanker truck loading facilities. Thus, our refineries and complexes carry out operational management to ensure compliance with emission standards under laws and regulations as well as with emission limits prescribed by regional pollution prevention agreements.

#### ■ Trend of air pollutant emissions



\* Scope of data: Hokkaido Refinery, Chiba Complex, Aichi Refinery, Tokuyama Complex, Cray Valley Idemitsu Corporation, Prime Polymer Co. Ltd., Anesaki Works, BASF Idemitsu Co., Ltd., Kelhin Lube Center, Moji Lube Center, Idemitsu Unitech Co., Ltd., SDS Biotech K.K.



\* Scope of data: Showa Yokkaichi Sekiyu Co., Ltd., TOA Oil Co., Ltd., Seibu Oil Co., Ltd.

### Measures against Ground Pollution

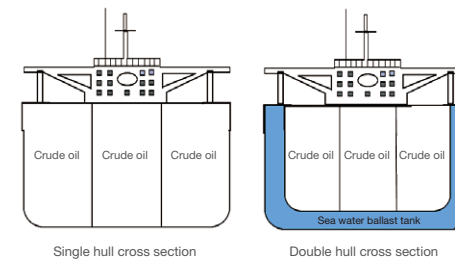
There are ground contamination risks at our oil refineries, complexes, plants, SS (service station) caused by oil leaks from underground pipes etc. To address the risks, we have been implementing autonomous surveys of ground and ground-water pollution and undertaking purification measures if any. In particular, when the closure or rebuilding facilities cause changes in the character of the land, we implement proper management to prevent pollution, including resurvey of ground pollution, in compliance with the Soil Contamination Countermeasures Law.

\* In FY2018, there were no serious oil spills.

### Measures to Prevent Water and Marine Pollution

In offshore oil development operations, effluent water containing oil is generated during test drilling and development. To prevent sea pollution, the generated water is treated using a separator and the oil is transported to land-based facilities for processing and the oil-free water is returned to the sea after being treated to meet effluent water standards. In addition, we always consult an expert to conduct an environmental impact assessment prior to test drilling and development to ensure that the impact is at an acceptable level. In case of a marine oil spillage, we promptly deploy an oil containment boom to restrict its spread and recover the spilled oil in accordance with our "Oil Pollution Contingency Plan."

During transport by ocean-going tankers, we take measures from aspects of both equipment and personnel to maintain a record of zero oil spillage. In the area of equipment, each of our very large crude carriers (VLCC) in operation is double-hulled (to prevent oil spillage due to a minor damage), thereby reducing the risk of oil spills. In terms of personnel, we provide regular training, including onboard emergency response drills and safety and environmental education, for all crew members.



In addition, we will aim to provide safe and stable energy and materials, and will contribute to the creation of a sustainable society by proactively engaging in environmental protection activities, including solving the problem of marine plastics waste. In September 2019, Idemitsu Group joined the "Clean Ocean Material Alliance (CLOMA)" which aims to solve the problem of marine plastics waste.



Clean Ocean Material Alliance



## Human Resources Policy

### Action Mindset

In order to realize Management Vision, Idemitsu group has established the "Action Mindset" which is the basis for all employees' attitudes and actions to be taken. Believing in the limitless possibilities of human beings, we strive to grow by constantly increasing each other's potential, and have the following 5 pillars: "Independence and autonomy" "Innovation" "Co-creation" "Health and safety" and "Integrity."

All employees shall strive to deepen understanding of Management Vision, Action Mindset and various policies, take pride in being a member of us, be aware of their responsibilities, and conduct fair and transparent corporate activities.



### Concept of Human Rights

Idemitsu Group believes in the infinite possibilities of "the power of human beings". By maximizing the full potential of all our employees, trusting, and cooperating with each other, we aim to contribute to the energy security of countries and regions around the world for the brightness and prosperity of the people who live there.

With this vision for our group, respecting human rights is at the core of everything we do and is the fundamental element of our business. This policy applies to all executive officers and employees of our group. We also expect all business partners, including our suppliers, to understand and comply with this policy.

We seek to work in harmony with both the international and local community, and does not allow discrimination against any individual or groups. In addition, we prohibit words or actions that could harm human dignity, be it physically or mentally.

We respect internationally recognized human rights as set out in the Universal Declaration of Human Rights and the ILO Declaration on Fundamental Principles and Rights at Work, as we conduct business both in Japan and worldwide. We also support the United Nations Guiding Principles on Business and Human Rights, the Voluntary Principles on Security and Human Rights, and the United Nations Global Compact. In addition, we comply with the laws of the countries and regions where we operate, and if local laws contradict internationally recognized human rights standards, we will seek ways to honor the principles of international human rights without violating local laws.

We promote a culture of open communication and feedback so that employees can discuss human rights concerns with their managers. In addition, to deal with violations or potential violations of the Code of Conduct, including human rights issues, we have a reporting and consultation service (Internal and External Contact Points on page 56) for executives and employees. Also, we have a contact point (Customer Service Center on page 13-14) for external stakeholders to report concerns about our business activities. We also disclose information on our efforts to respect human rights on our website as needed.

Our group's Human Rights Policy has been approved by the Management Committee, which deliberates on important matters relating to the execution of business, and the Board of Directors, which is the decision-making body for the execution of business, with the advice of outside experts.

### Human Rights Priority Issues

1. Promotion of Diversity
2. Prohibition of forced labor
3. Prohibition of Child Labor
4. Prohibition of Discrimination
5. Prohibition of Harassment
6. Freedom of Association and Recognition of the Right to Collective Bargaining
7. Maintaining our Working Environment
8. Land, Water and the Use of Natural Resources
9. Respect for the Rights of Indigenous Peoples

Idemitsu Group Human Rights Policy <https://sustainability.idemitsu.com/en/themes/201>



### Concept of Diversity and Inclusion

As an energy co-creation company originating in Japan, Idemitsu Group will work with diverse stakeholders to create new values in order to solve the various social issues.

"Idemitsu Group Diversity and Inclusion Policy" has been established to clarify the significance and purpose of diversity and inclusion in our group and to promote them with a common understanding.

Idemitsu Group Diversity & Inclusion Policy <https://sustainability.idemitsu.com/en/themes/200>





## Human Resources Policy

### Basic Concept of Personnel Strategy

Idemitsu recognizes that human resource risks include mismatches in aptitude and career levels resulting from rapid environmental changes such as digitization and robotization, and a shortage of human resources due to intensifying competition in the acquisition of human resources. At the same time, however, we recognize that these environmental changes provide opportunities for diverse employees to grow autonomously and transform themselves into a company that creates new values.

In such an environment, our Management Vision and Action Mindset state that "Hitowa, Mugenno Energy. (People have limitless energy,)" as our slogan. We are developing personnel measures that support the "people-centered management" along the slogan We aim not only to contribute to the development of society, but also to enrich the lives of our employees by enabling each and every one of us to make the best use of our abilities and by enhancing the team strength of the entire organization and supply chain.



### ■ Overview of Personnel Measures

#### Stimulating Self-Growth Motivation and Providing Growth Opportunities

##### Growth in My Own Way

- **Development of education system to realize Management Vision**
  - Enhancement of rank-based and open training to acquire business skills and mindsets
  - Improving management skills to create new values
  - Development of domestic and overseas study programs, overseas interns, and external training programs to broaden our horizons
- **Career development support (CDP) for employees based on structural changes and systematic development of management personnel**
  - Formulation and implementation of a training plan that emphasizes mutual understanding between employees and the company
  - Internal recruitment system and personnel transfers to build autonomous career plans
  - Linking succession plans with education and transfer plans (including national staff)

##### Creating New Values Together

#### Creating a Workplace Where Diverse Employees Can Create Together and Hiring Human Resources

- **Creating workplaces that take advantage of diversity**
  - Flexible and flat organization and personnel shift to growth areas
  - Creating time to create new values by promoting DTK project
  - Expanding cross-divisional networks, such as promoting the active participation of women
  - Improvement of workplace culture based on an employee engagement survey and Next Forum
  - Constructing a collaborative environment through 360 degree evaluation (multifaceted evaluation)
- **Recruitment of diverse human resources**
  - Creation of a (recruitment strategy) recruitment and branding method that takes into account the youths' point of view and the uniqueness of us
  - Examination of recruitment timing and targets based on the characteristics of each division

##### Trust of Employees and the Company

#### Establishment of Personnel Systems That are Rewarding and That Enable Employees to Focus on Their Work with Peace of Mind

- **Shared vision and development of a fair and equitable, and reliable personnel system**
  - Understanding and dissemination of Management Vision and Action Mindset
  - Establishment and operation of a fair and equitable personnel evaluation system
  - Efficient and reliable business operations through the introduction of a new personnel system
- **Dissemination of systems that respect diversity and work styles regardless of place or time**
  - Enhancement of systems, including flexible working hours and telework, and development of measures to promote the use of such systems
- **Enhancement of systems that enable employees to focus on their work with peace of mind**
  - Enhancement of systems related to childcare and nursing care and measures to support the return of employees on leave
  - Implementation of health management leading to autonomous health management
  - Development of systems and measures for further advancement of employees 60 years and older

## Stimulating Self-Growth Motivation and Providing Growth Opportunities

### Concept of Human Resource Education

Setting human resource development as one of our management objectives, we are committed to planning and designing employee education based on our Management Vision and Action Mindset. On the basis of skills development through on-the-job training (OJT), we support each employee to make the best use of their abilities by complementing the off-the-job training system (Off-JT) linked to the grading system. To this end, we will provide them with opportunities for self-development by combining selective, open, and level-specific training.

Until FY2018, Idemitsu and Showa Shell had conducted rank-based and age-based training, selective training, compliance training, and other programs based on their respective educational systems. Idemitsu made most of its training in-house while Showa Shell implemented most of its training supported by other companies, resulting in a difference in the amount of investment in training. Since FY2019, however, the new integrated company has worked to implement cross-industry training for new graduates education and leadership development.

#### Training hours and amount of investment in FY2018

		Idemitsu	Showa Shell
Training hours (hours)	Total hours	70,880	14,633
	Per person	17.8	21.0
Amount of investment in training (thousand yen)	Total amount	226,769	299,611
	Per person	57	430

\* Results are from training organized by the Human Resources Department of Idemitsu and Showa Shell respectively.

### Personnel Assignments and Transfers to Match the Right Person to the Right Place

Our employees have individual interviews with their superiors once a year to share their hopes and thoughts based on their "future planning sheet" which contains information on the level of satisfaction of their current job or workplace, career plans, and personal details. Grasping the direction of each individual employee's development, the Human Resources Department assigns them to appropriate positions in line with changes in the business structure. We also make changes in their job category and work location as opportunities for them to develop themselves.

### Examples of Specific Initiatives

#### Educational Cross-Industry Training for Developing Leadership

With the aim of training personnel to demonstrate leadership rooted in their own convictions, we have been holding cross-industry training for mid-level employees in conjunction with other companies (daily necessities and insurance industries) since FY2016. Every year, 24 people (from three companies) participate in about six-month training program that creates opportunities for them to gain good people skills and creative vision by encountering diverse values and ideas, as well as by exploring their own leadership skills for leaders of future generations. In addition to this training, we actively send employees to outside training.



#### Workshop for Developing the Foundation of the Organization

In FY2019, we held workshops throughout Japan, including at overseas bases. In the first workshop, 600 managers, who have subordinates from different backgrounds, participated in a skill and mindset training program aimed at understanding events that are likely to occur during the integration phase and facilitating the smooth integration. In the second workshop, we encouraged representatives of both managers and staff in charge to further promote understanding of the management vision and to set their own declaration of conduct to achieve it.

	First workshop	Second workshop
Number of times	20 times	37 times
Number of participants	600 people	856 people







## Creating a Workplace Where Diverse Employees Can Create Together and Hiring Human Resources

### Employment situation

As of July 1, 2019, Idemitsu has 13,756 consolidated and 4,825 non-consolidated employees. We are promoting initiatives that enable all employees, regardless of age, gender, nationality, or disabilities, to work energetically.

#### Status of Employees

(As of July 1, 2019)

	Total	Men	Women	Percentage of women
<b>Number of Employees</b>	4,825 people	4,254 people	571 people	11.8 %
<b>Number of employees in managerial positions</b>	971 people	949 people	22 people	2.3 %
<b>Average age</b>	43.0 years old	43.3 years old	41.0 years old	-
<b>Average years employed</b>	19.3 years	19.6 years	16.9 years	-
<b>Percentage of employees with disabilities</b>	2.11%	-	-	-

\* The above data covers Idemitsu hiring (employees, seniors, full-time contract employees, and advisors). Includes employees seconded from Showa Shell, but excludes employees seconded to other companies. However, the percentage of employees with disabilities includes employees seconded to other companies.

\* The percentage of employees with disabilities is calculated based on the calculation method of the Ministry of Health, Labour and Welfare.

### Status of Recruitment

We said, "Hitowa, Mugenno Energy. (People have limitless energy.)" Under the slogan, we are recruiting people who can challenge themselves and create new values together while respecting diversity. In the hiring process, we make it a priority to ensure that employees do not make any mismatches after joining the company by providing internships and contact points with close senior employees so that they can see what we really are. We are also working to raise employee motivation, improve the corporate culture, and expand the system to improve employee retention.

#### Recruitment of New Graduates in April 2019

Total	Men	Women	Percentage of women	Foreign nationality	Ratio of foreign nationality
178 people	142 people	36 people	20.2 %	5 people	2.8 %

#### Winter internship meeting



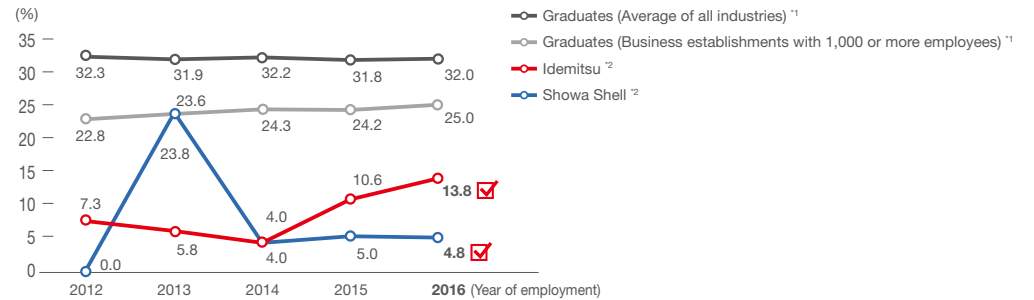
#### New graduate retention rate (Average for newly hired employees between 2014 and 2016)

(Unit: %)

\* Average rate of three-year retention of new graduates in the relevant fiscal years (FY2014 – 2016)

Idemitsu	Showa Shell
91.5	95.5

#### Turnover rate of new graduates with less than three years of employment



\*1 Please refer to the Ministry of Health, Labour and Welfare's report on the turnover rate of new graduates.

\*2 Turnover rate of new graduates within three years after employment in the relevant fiscal year

#### Career Recruitment in FY2018

(Unit : people)

Idemitsu	Showa Shell
67	42

\* Showa Shell's career recruitment include contract employees.

## Creating a Workplace Where Diverse Employees Can Create Together and Hiring Human Resources

### Promotion of Activities by All Employees (Promotion of D&I)

We have formulated the General Employer Action Plan based on the "Act on the Promotion of Women's Participation and Advancement in the Workplace" to promote participation and career advancement of women. In addition, we have been recognized by the Ministry of Health, Labour and Welfare as a childcare support company for the formulation and implementation of the General Employer Action Plan based on the "Act on Advancement of Measures to Support Raising Next-Generation Children" and have received the certification mark "Kurumin." \* Based on the plan, we will continue to improve the employment environment and working conditions that will contribute to the development of the next generation and to implement measures to support the development of the next generation.



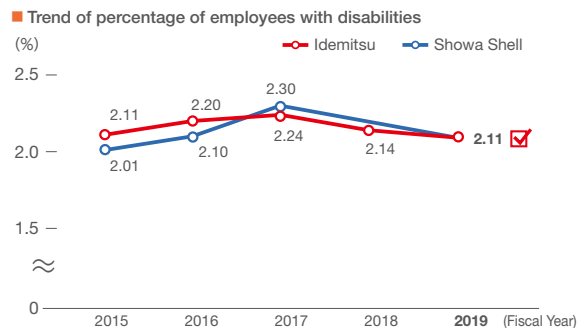
\* Kurumin is a mark awarded by the Ministry of Health, Labour and Welfare to companies that actively support the development of the next generation. Based on the Act on Advancement of Measures to Support Raising Next-Generation Children, the General Employer Action Plan can be formulated and certified if certain standards are met. We have obtained certification since 2012.

### Promotion of Activities by Employees Aged 60 and Over

The system will be revised to allow each employee to make the most of his or her abilities after the age of 60 and to work with a sense of satisfaction and security against a backdrop of diversification of working age and form and willingness to work. Beginning in FY2021, we will introduce a retirement age selection system for employees aged 60-65. In FY2025, we plan to introduce a system in which all employees can work as employees up to the age of 65.

### Promoting the Active Participation of People with Disabilities

We are working to create an environment in which people with disabilities can demonstrate their abilities and work, and to provide opportunities for such people. In addition to operations at the head office and other sites around the country, in 2011 we began cleaning accommodation facilities at our training centers and in 2015 we began operations in the horticulture division (Idemitsu Yume Farm), which cultivates flowering plants using the greenhouse facilities of our Advanced Technology Research Laboratories. In 2019, we constructed a strawberry plantation in Tokuyama Complex using waste heat from the site, creating employment opportunities such as cultivation work. The strawberries are used in company cafeterias, and in the future we plan to increase the number of cultivation houses and hire more people with disabilities. We are also considering ways to promote the employment of people with disabilities in each department, and with a view to expanding operations at our head office, we will continue to promote the creation of workplaces and employment opportunities where people with disabilities can work with pride and enjoyment.



■ Strawberry farm in the Tokuyama Complex



\* The data for FY2019, as of July 1, 2019, cover Idemitsu hiring (including employees seconded from Showa Shell and employees seconded to other companies).

\* Idemitsu's data in FY2015 to 2018 are as of June 1 of each year.

\* Showa Shell's data in FY2015 to 2017 are as of December 31 of each year.

\* Showa Shell's data in FY2018 was not disclosed due to the timing of data calculation.

### Diversity and Inclusion (D&I) Training and Other Activities

#### D&I Experience Event

Since October 2018, the event has been held to meet the needs of each department of Idemitsu and Showa Shell with a total of 826 participants as of December 31, 2019. In the experience event, participants discuss common dilemmas in the workplace (including balancing work and childcare) within a group to recognize the difference between their thoughts, values and what they treasure and those of other members. We will continue to hold this kind of experience event to promote activities conducted by diverse human resources through D&I.



#### Seminar for Managers Who Have Subordinates Who Have Newborn Babies

In June 2019, we held a seminar for 110 managers who have subordinates who had returned to work from childcare leave and who had newborn babies. At the seminar, the participants shared management skills for employees with restricted working hours as well as examples of problem solving at workplace. Going forward, while providing seminars and workshops for child-rearing employees and their superiors, we will continue to work on creating an environment where superiors can understand the relevant employees as well as the employees can balance their work and childcare.



#### Harassment Prevention Seminars

Since December 2018, we have held harassment prevention seminars for directors and managers with the aim of eradicating any kind of harassment such as sexual harassment, abuse of authority, and pregnancy discrimination. A total of 1,022 directors and managers (as of October 31, 2019) from Head Office, complexes, and branches participated in the seminars. The seminars provided participants with an opportunity to deepen understanding of sexual harassment and abuse of authority in the workplace and to consider the role of managers to prevent such harassment. We will continue these seminars to create harassment-free workplaces.



## Efforts to Improve Workplace Culture and Motivation

### Next Forum Initiatives

Next Forum is a company meeting for employees and management to directly discuss, exchange opinions, and make proposals on company-wide issues with the aim of becoming a better company. Meetings are held twice a year, and forum members (total of 110 persons) selected from each department gather opinions from the workplace and directly communicate with management. The opinions of employees are fed back into company-wide activities, and we are implementing better measures so that everyone can work energetically.

In 2019, meetings were held in February and July to discuss ways to improve work efficiency, including the results of an employee engagement survey and the many comments received from forum members, as well as factors that impede the improvement of work efficiency, such as work structures and workplace culture.



### PDCA Cycle Based on an Employee Engagement Survey

We conduct an employee engagement survey once a year to quantitatively and continuously analyze employees' engagement, mutual trust, and unity.

The first survey after the business integration was conducted from late July to early August, covering a total of 10,344 people in our company and affiliated companies (27 companies), with 9,970 people (96.4% of total) responding. The results of the survey are fed back to management and all employees. Then they are analyzed in detail, and specific action plans are formulated and implemented based on it. The results of these analyses and plans are then confirmed in the next year's survey. This is the PDCA cycle.



### Results of the 2019 Questionnaire Survey of Motivation



Based on the results of the above survey, we will promote company-wide work flow reforms through the creation of a flat organization and the DTK (Dattara Ko Shiyo) project (=Business Process Redesign).

The results of these efforts will be confirmed in the following year's survey.

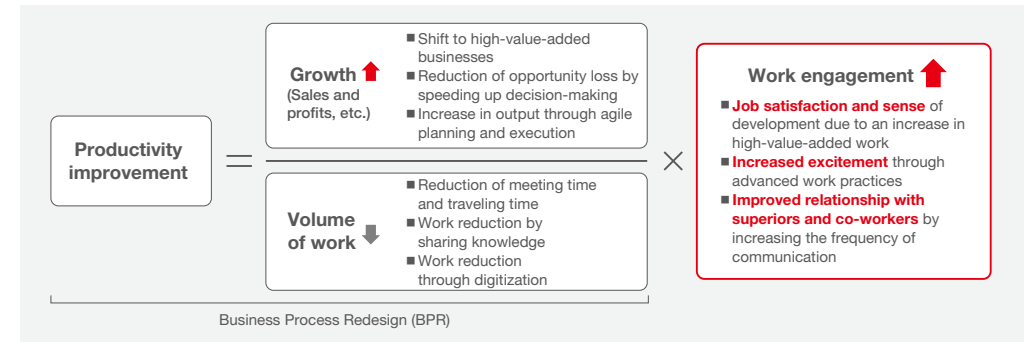
### Creation of integration synergies, employee engagement survey, and initiatives to address priority issues raised at Next Forum **DTK (Dattara Ko Shiyo) Project (=Business Process Redesign)**

This project was launched with the aim of reforming the work flow and working style of all employees to ensure the sustainable development of the new integrated company.

Productivity improvement requires improvement in three factors: improving results, reducing volume of work, and improving work engagement. Improving results and reducing volume of work are equivalent to the existing operational improvement. The productivity improvement envisioned by this project is aimed at "operational improvement x improvement of each employee's work engagement." The project is divided into two phases: Phase I, which aims to unify operations of divisions in which the former companies' operations coexist, and Phase II, which seeks to create new ways of working in all divisions, including digitization.

In both phases I and II, we held workshops for leaders appointed by DTK division and members appointed by other divisions and determined guidelines for mission project activities of the project team and delved into issues. Having shifted into Phase II, we are holding study sessions and workshops on BPR (Business Process Redesign), Process Digitization, Smart Work and Agile Work for all departments.

All employees of Idemitsu Group work together to improve their work engagement to ensure that they can feel a sense of achievement at the new integrated company that solved any issue that could not have been solved by a single company.



### Reform of Working Styles at Manufacturing Sites

With the aim of enhancing employees' work engagement and competitiveness in the Manufacturing & Technology Department, Head Office established a task team that includes members from manufacturing sites. We are working to reform our business by mainly diversifying worksite operations, reducing operations with immediate results, and shifting workers mainly to daytime work. Specifically, we are considering reforms based on the themes of designing operations in accordance with needs and abilities of employees and reducing the night workload.



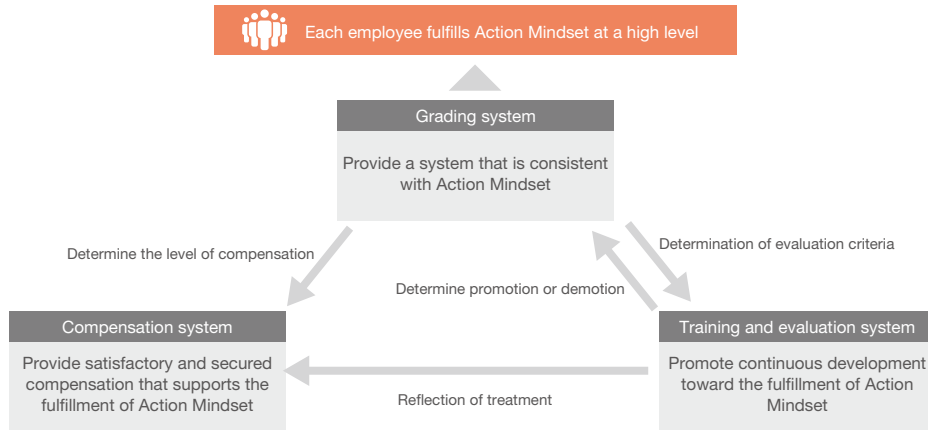
## Establishment of Personnel Systems That are Rewarding and That Enable Employees to Focus on Their Work with Peace of Mind

### Fair Evaluation and Compensation

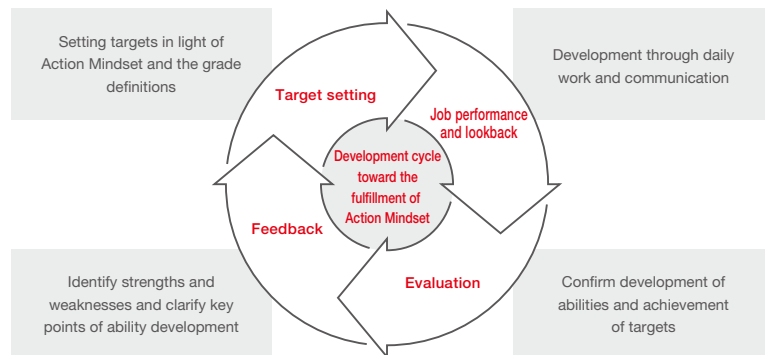
Idemitsu's evaluation system is designed to help each and every employee understand the significance of their evaluation and contribute to their personal development. It consists of "ability evaluation" for evaluating work attitudes and performance and "target achievement evaluation" for evaluating performance results and contributions. In interviews with the superior, employees confirm the target setting, the level of achievement, and abilities to be developed. The results of these evaluations are used for employees' future development, and are reflected in compensation (salary and bonus) and personnel allocation and transfers.

Our compensation system is based on the principle of guarantee of livelihood and fair treatment of employees. Our salary system for employees consists of the basic salary that is paid stably to employees who demonstrate their abilities, a bonus (target achievement evaluation) for the previous year's performance results and contribution, and various allowances. This is based on the concept that we respect each employee's lifestyle and values while wishing for the happiness of their family.

#### Overview of systems for human resource development



#### Development cycle toward the fulfillment of Action Mindset



### Promotion of Diverse and Flexible Working Styles

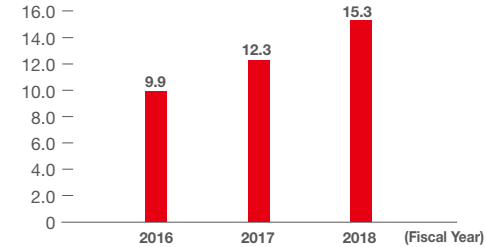
As part of our efforts to create a worker-friendly environment for a diverse range of employees, we have established systems and structures such as the work-from-home system, the flextime system, and satellite offices that could help reduce the burden of commuting. In FY2019, we participated in Telework Days 2019 organized by the National Government and the Tokyo Metropolitan Government to promote the use of the telecommuting system. We will work to ensure that these systems are used to promote efficient work practices going forward.

As for the management of working hours, we use the work management system to appropriately grasp the actual working conditions of employees and to regularly raise their awareness of working hours, aiming to increase productivity. In FY2018, overtime work hours increased due to the reduction of the prescribed working hours by Idemitsu (7.5 hours/day) and the temporary work load resulting from the management integration. In efforts to improve the workplace culture and promote job satisfaction (page 35), we aim to achieve a work-life balance by reviewing work and improving work efficiency.

#### Average overtime work hours per employee

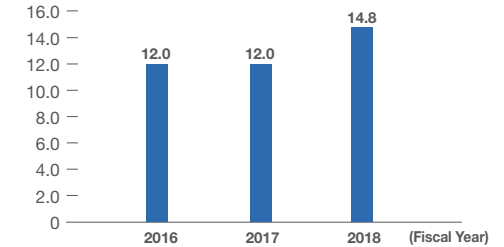
##### Idemitsu

(Hours/month)



##### Showa Shell

(Hours/month)

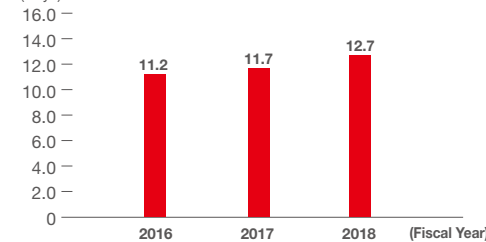


\* Results for Idemitsu and Showa Shell non-consolidated, excluding employees in managerial positions, employees on leave and seconded employees.

#### Average annual paid leave taken by an employee

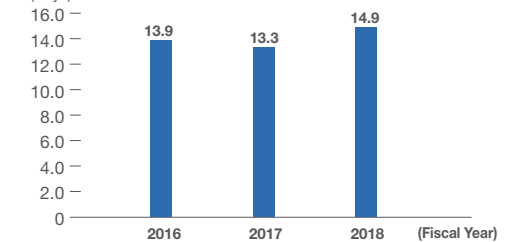
##### Idemitsu

(Days)



##### Showa Shell

(Days)



\* Results for Idemitsu and Showa Shell non-consolidated, excluding employees on leave and seconded employees.

#### Average usage rate of annual paid leave per employee

(FY2018)

(Unit: %)

Idemitsu	Showa Shell
68.4	74.6

\* Results for Idemitsu and Showa Shell non-consolidated, excluding employees on leave and seconded employees.

\* Average usage rate of annual paid leave per employee is the ratio of the number of paid leave taken to the number of paid leave given per year.



## Establishment of Personnel Systems That are Rewarding and That Enable Employees to Focus on Their Work with Peace of Mind

### Expansion of systems to promote D&I

To create a worker-friendly environment for a diverse range of employees, on the basis of our Diversity and Inclusion Policy, we will expand the current systems of Idemitsu and Showa Shell in FY2020 as follows:

#### Systems for all employees

<b>Annual paid leave</b>	Paid leave are granted annually based on the number of years of service (up to 21 days per year). Employees can take leave in half-day increments.
<b>Carryover of annual paid leave</b>	Accrued paid leave can be carried over to the next year if the accrual has been yet taken (up to 31 days per year).
<b>Flexitime</b>	Employees can decide the working hours of the day by themselves and can work flexibly.
<b>Telecommuting</b>	Employees can work from home once a week.
<b>Self-development leave of absence</b>	Employees can take a leave of absence of up to two years to attend school or obtain qualifications that will contribute to their career development at the Company.
<b>Volunteer leave of absence</b>	Employees can take a leave of absence of up to two years for activities such as disaster relief and international cooperation, nature and environmental conservation, support for people with disabilities, and support for the cultivation of future generations focusing on children.
<b>Volunteer leave</b>	In addition to annual paid leave, employees can take three days of special paid leave per year for activities such as disaster relief and international cooperation, nature and environmental conservation, support for people with disabilities, and support for the cultivation of future generations focusing on children.
<b>Leave of absence to accompany the spouse overseas</b>	Employees can take a leave of absence up to three years to accompany their spouse overseas.
<b>Lay judge and prosecution councilor leave</b>	If an employee is appointed as a lay judge or a prosecution councilor, they will be granted necessary special paid leave in addition to annual paid leave.

#### System for employees for childbirth or childcare

<b>Maternity Leave (female)</b>	Female employees can take special leave from six weeks (14 weeks for multiple births) before the expected date of delivery until eight weeks after delivery.
<b>Special leave for childbirth by the spouse (male)</b>	When the spouse gives birth, her husband (employee) can take five special paid leave.
<b>Childcare leave</b>	Regardless of sex, employees can take a childcare leave until the child becomes two years old.
<b>Childcare time (female)</b>	Female employees can take up to one hour of childcare time per day in 30 minute increments (up until the child becomes one year old).
<b>Leave to care for sick/ injured child</b>	Employees can take up to 10 days of special paid leave per year to take care of their sick/injured child (up until the child completes the 3rd grade of elementary school). Employees can take them in full-day half-day or one-hour increments.

#### System for employees providing family care

<b>Nursing care leave</b>	Employees can take up to 365 days of nursing care leave per family member (division of leave is available).
<b>Family care leave</b>	Employees can take up to 10 days of special paid leave per year to provide family care. Employees can take them in full-day, half-day or one-hour increments.

#### Systems for employees who provide childcare or nursing care

<b>Reduced working hours for parenting</b>	Employees can reduce their working hours by up to two hours per day in 30 minute increments (childcare: up until the child becomes 3rd grade of elementary school; nursing care: for up to three years).
<b>Telecommuting</b>	Employees can work from home for two days a week (childcare: up until the child becomes 3rd grade of elementary school; nursing care: up until nursing care is no longer necessary). Employees can use the system three times a week up to 10 times a month, including other systems for all employees.
<b>Exemption from overtime work</b>	Employees can be exempted from overtime work (childcare: up until the child becomes one year old; nursing care: up until nursing care is no longer necessary).
<b>Limitation on overtime work and holiday work</b>	Employees are allowed to limit overtime work and holiday work to within the range of 24 hours per month and 150 hours per year (childcare: until the child enters elementary school; nursing care: until nursing care is no longer necessary).
<b>Exemption from late-night shift</b>	Employees can be exempted from late-night shift (childcare: until the child enters elementary school; nursing care: until nursing care is no longer necessary).

#### Various systems usage numbers in FY2018

(Unit: people)

Name of system	Idemitsu			Showa Shell		
	Total	Men	Women	Total	Men	Women
<b>Maternity leave</b>	28	—	28	26	—	26
<b>Childcare leave</b>	47	3	44	37	3	34
<b>Nursing care leave</b>	3	3	0	2	2	0
<b>Reduced working hours for parenting</b>	42	1	41	38	0	38
<b>Leave to care for sick/ injured child</b>	113	51	62	113	56	57
<b>Family care leave</b>	43	34	9	17	11	6
<b>Telecommuting</b>	—	—	—	191	111	80
<b>Self-development leave of absence</b>	—	—	—	3	1	2

\* Idemitsu's systems are available for direct and temporary employees, but not for workers from other temp-staff companies.

\* Idemitsu also had a telecommuting system in FY2018 for reasons of childcare or nursing care, but the number of employees who used the system has not been disclosed.

\* Showa Shell's systems are available for only direct employees and contract employees (re-employed only).

\* During the Telework Days period (July to September 2019), the number of employees who worked from home increased to 1,247.

### Exchange of Opinions with Employees on Personnel Policies

We strive to comply with all applicable labor laws and regulations at home and abroad and to create workplace environments in which all employees can concentrate on their work with assurance and satisfaction. In formulating personnel policies, the Human Resources Department exchanges opinions with employees in advance on the content of policies, salary levels, labor conditions, and welfare benefits by holding briefing sessions for employees and making proposals to the Showa Shell Labor Union, aiming to develop policies that are highly convincing and empathetic.



## Promotion of Employees' Health

### Achievements and Specific Measures

In FY2018, both Idemitsu and Showa Shell promoted employees' health based on their respective policies.

#### Actual Results of Specific Initiatives

- Mental health measures: In FY2018, a total of 5,774 employees participated in e-learning programs.
- Measures to prevent lifestyle-related diseases: Health guidance was implemented according to the health management category defined by the company.
- Established health support systems and programs for overseas employees to help manage their health in a different environment from that in Japan
- Implemented "workplace health seminars" in collaboration with health insurance associations in some areas

- Health seminar themed on effective walking (Held at Head Office (Teigeki Building) in November 2019)



We learned how to walk with proper posture, stride length and speed, as well as how to walk effectively to increase calorie consumption.

For FY2019, the two companies has promoted integration of their health-related systems step by step, taking advantage of their respective strengths in the occupational physician system, medical examination items and standards, stress checks, and health management support systems.

#### Examples of Initiatives

- Appointed industrial physicians to complexes with less than 50 employees and provided meticulous follow-up
- Extended company-sponsored cancer screening to young employees at periodic health checkups (only for those who wanted)
- Company-wide implementation of "workplace health seminars" (it is scheduled to hold a total of 20 seminars at 14 refineries, complexes, laboratories, and branches nationwide)
- Use of the Health Committee, internal information portal, and internal newsletters to raise awareness of health consultation services and to introduce health clinics at each base

### Promotion of Medium-term Initiatives

In FY2020 and beyond, we will embody "Give priority to health and safety" as set forth in the Action Guidelines to build workplace environments in which employees are able to concentrate on their work with assurance by putting into practice health-oriented management that leads to autonomous health management.

#### Main priority Issues and specific measures

##### 1. Improvement of health awareness

We regularly inform employees of our health declaration, policies, and quantitative conditions, thereby creating opportunities to discuss health issues on a daily basis.

##### 2. Prevention of leave of absence due to diseases or injuries

To support employees with mental health problems, we will enhance our in-house expert team and develop measures against lifestyle-related diseases to promote autonomous prevention.

##### 3. Reinforcement of promotion system and PDCA

We will clarify the promotion system, regularly reported to the Management Committee, and make an effective use of the systems so that we will implement the PDCA cycle effectively.

### Health indicators (current status and goals)

In the promotion of the above specific measures, we will implement them by setting targets for the following health indicators:

#### ● Mental health

##### Percentage of employees who took a leave of absence of at least one month due to mental health problems

FY2018 results: 1.3% ⇒ FY2022 target: 1.0% or less

#### ● Physical health

##### Percentage of health management categories

(Unit: %)

	FY2018 Results				Targets for FY2022
	Total	Age of 40s	Age of 50s	Age of 60s	Age of 40s
Healthy	49	44	37	36	50 or more
At risk	41	44	51	53	—
Poor	10	12	12	11	Less than 10

\* The health management category is defined by the company for items related to lifestyle-related diseases among medical examination items in reference to the standards of medical society (in the poor group, BMI is 30 or higher, blood pressure at systolic phase is 160 or higher, HbA1c is 8% or higher, etc.)

\* Ultimately, we aim for 50% or more of the healthy group and less than 10% of the poor group in each age group. We have set targets of improvement in the age of 40s as an outcome indicator in the medium-term goal because it takes a considerable period of time before taking effects.

#### ● Health awareness and lifestyle

##### Indicators in the results of health checkups

(Unit: %)

	FY2018 Results	Targets for FY2022
Percentage of employees who have problems in a medical questionnaire in health checkups (lifestyle)	78	—
Of these, the percentage of insufficient exercise	47	—
Of these, the percentage of insufficient sleep	33	—
Percentage of employees practicing self-care	—	50 or more



## Ensuring Safety

### Policy for Ensuring Safety

"To ensure the safety of people as our highest priority, reduce and eliminate risks through the appropriate allocation of management resources and the maintenance and improvement of facilities, pro-cesses and work mechanisms with the aim to eliminate accidents and injuries while also making efforts to cultivate our safety culture" is the policy for ensuring safety. The ensuring of safety based on this policy is the result of management efforts and realizing zero accidents and disasters is the foremost achievement of these efforts. Based on this recognition, the following specific policies are established as the most important standard to be prioritized to ensure safety for the various criteria for determining value in each scene and stage in all our busi-ness activities including production, logistics, sales and research and develop-ment, in all our operations and all our activities.

1. Ensure the safety of people
2. Ensure the safety assurance of facilities and processes
3. Ensure safety in work mechanisms and procedures
4. Properly allocate and utilize management resources
5. Cultivate safety culture and promote safety management

### System for Promoting HSSE Initiatives

Our group has traditionally positioned "Safety, Health and the Environ-ment" as the foundation of its management, and has established the "Safety & Environmental Protection Headquarters" to promote initia-tives to secure and preserve them. The executive in charge of safety and environment (director), who is delegated by the President and Representative Director, serves as the General Manager of the Safety & Environmental Protection Headquarters, overseeing the headquarters as the person in charge of safety, health, and environment.

The role of the Headquarters is to determine the Medium-term Management Plan, the annual basic policies and priority issues on HSSE, to assess and evaluate performance through audits, to main-tain, review, and improve the Safety Management System and the Environmental Management System (page 16), and to instruct all executive departments and major group companies to secure management resources necessary to establish, implement, maintain, and continually improve the Manage-ment Systems. As a general rule, we have the Safety & Environmental Protection Headquarters Meeting once a year in December to decide on our group's annual basic policies for the next fiscal year.

Each executive department appoints a manager in charge of safety and environment to manage and promote the overall HSSE activities of the department, including the business sites under its management.

In addition, in order to confirm and promote the HSSE activities of each executive department, the General Manager of the Safety & Environmental Protection Headquarters or top management visits business sites to provide Safety and Environment-related instructions or safety patrols, or the Safety & Environmental Protection Headquar-ters secretariat conducts Safety and Environment audits at business sites. In particular, at our company's refineries and plants, the General Manager of the Safety & Environmental Protection Headquarters pro-vides Safety and Environment-related instruction and safety patrol once a year, while the Safety & Environmental Protection Headquar-ters secretariat conducts Safety and Envi-ronment audit once a year.

Furthermore, in order to prevent large-scale disasters at our busi-ness sites, we have established the Safety and Safe-ty Assurance Advisory Committee, which consists of members, including external experts, as an advisory body to the Board of Directors or the Presi-dent and Representative Director, with the aim of establishing more effective safety and safety assurance measures.

\* Safety Management System: To promote safety management activities, safety management policies and objectives and targets are established. To achieve these objectives, a safety management plan is formulated, implemented, reviewed, and continuously improved

### Activities and Results Based on the Annual Basic Policies on HSSE

#### Annual Basic Policies on HSSE in FY2018

Continue to take on the challenge of zero accidents, and aim for "Zero serious accidents", "Zero fatal and lost time injuries," and "Zero environmental anomalies." In particular, continue to promote "Strict adherence to livesaving rules" and "Caring for and encouraging peers."

#### Safety, Health and Environmental Performance in 2018

(including partner companies)	(Unit: cases)	
	Idemitsu Group's	Showa Shell Group's
Serious accidents	1 <sup>*1</sup>	0
Fatalities	1 <sup>*2</sup>	1 <sup>*3</sup>
Lost time injuries	16	7
Environmental anomalies	0	0

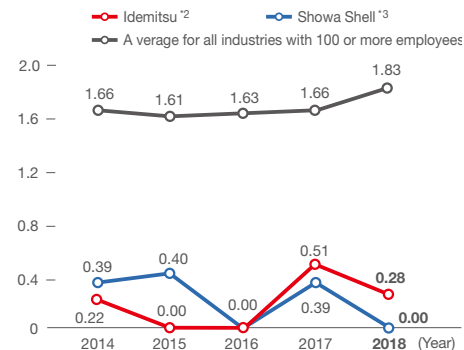
\*1 In February 2018, an explosion and fire occurred at the Yokohama Plant of SDS Biotech K.K., killing an employee of a subcontractor (There were no serious accidents at refineries or business sites.)

\*2 Including the above serious accidents

\*3 In April 2018, an employee of a subcontractor fell into the sea while moving 2 container ships that were berthing, and died.

#### Occupational accidents frequency rate<sup>\*1</sup> (Frequency of occurrence of accidents)

\*Excluding employees of partner companies



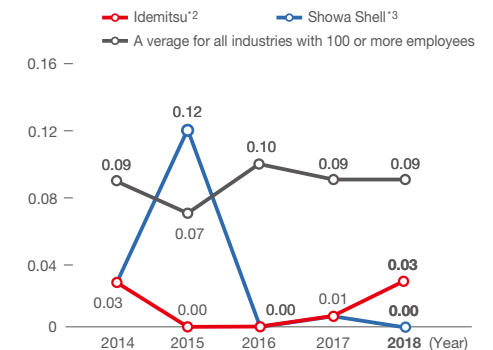
\*1 Number of fatalities and injuries due to work-related accidents per 1 million hours of actual work

\*2 Idemitsu's data covers Hokkaido Refinery, Chiba Complex, Aichi Refinery, Tokuyama Complex, Prime Polymer Co., Ltd., Anesaki Works, BASF Idemitsu Co., Ltd.

\*3 Showa Shell's data covers Showa Yokkaichi Sekiyu Co., Ltd., TOA Oil Co., Ltd., Seibu Oil Co., Ltd.

#### Severity rate<sup>\*1</sup> (Degree of severity of accident)

\*Excluding employees of partner companies



\*1 Number of lost working days per 1,000 hours of actual work

\*2 Idemitsu Kosan's data covers Hokkaido Refinery, Chiba Complex Aichi Refinery, Tokuyama Complex, Prime Polymer Co., Ltd., Anesaki Works, BASF Idemitsu Co., Ltd.

\*3 Showa Shell's data covers Showa Yokkaichi Sekiyu Co., Ltd., TOA Oil Co., Ltd., Seibu Oil Co., Ltd.

The annual basic policies for FY2019 will follow the annual basic policies for FY2018. Based on the results described above, we are working to prevent accidents by adding the following items to our priority issues.

#### Annual Basic Policies on HSSE in FY2019

- Standardization to create and keep safety cultures for "Strict adherence to livesaving rules" including partner companies
- Promotion of countermeasures through exhaustive identifi-cation of potential risks and implementation of appropriate risk assessment



## Ensuring Safety

### Safety and Health Initiatives

#### Efforts to Prevent Accidents

In 2018, a serious accident (dust explosion fire accident) occurred at an affiliated company of Idemitsu Kosan, resulting in a fatality in the partner company. This was due to insufficient identification of potential risks. As a member of the accident investigation committee, we worked to identify the cause of the accident and supported to make preventive measures. Urgent investigations were conducted at domestic and overseas business sites to confirm that there were no similar risks. We will continue to strengthen our efforts to prevent serious accidents in all executive departments.

The number of work-related accidents (lost-time injuries and medical treatment cases) in our group in 2018 was lower than in 2017. This is the result of our efforts to thoroughly implement "Strict adherence to livesaving rules" such as the use of fall prevention devices, in order to prevent the recurrence of accidents that might lead to fatalities by falling from a high place occurred in 2016 and 2017. In FY2019, with the aim of achieving "Challenge of zero accidents," each department is promoting the PDCA cycle for safety and environmental management on its own initiative, and is working to continue safe and stable operations by identifying potential risks, including processes and equipment, and implementing appropriate risk assessment measures.

#### Safety and Safety Assurance Advisory Committee

In the FY2018 Safety and Safety Assurance Advisory Committee, we consulted on the "Efforts to achieve advanced safety assurance equivalent to Super-certification\*" and received the reply that "Upgrading of risk assessment and strengthening of facility management and operation management by utilizing advanced technologies are important points." Based on this, the Tokuyama Plant obtained Super-certification in FY2019. The Chiba Plant also underwent an on-site inspection and applied.

In FY2019, we consulted the Committee as "Efforts to deal with increasingly severe natural disasters" and received the reply. We will consider and respond to it in the future.

\* Super-certification: A system in which the Ministry of Economy, Trade and Industry certifies accredited manufactures that are engaged in advanced safety assurance, such as IoT, the use of big data, advanced risk assessment, and third-party evaluation of safety capabilities, as "Super-certification Manufactures (Specified Accredited Manufactures)" in response to diversifying disasters, aging of plants, and a decrease in the number of skilled employees.

#### Reinforcement of earthquake resistance of existing facilities

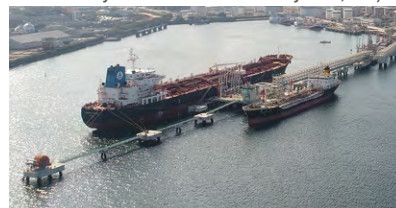
The Group's refineries and complexes have worked to strengthen its measures for natural disasters. As for earthquakes, we have constantly assessed the earthquake resistance of our equipment based on the standards required by laws against the expected earthquake magnitudes, and strengthen them, if necessary. In addition, having learned lessons from the Tokachi-oki Earthquake in 2003 and others, we have assessed and enhanced the earthquake resistance of our facilities against expected earthquake magnitudes that exceed the standards required by laws.

Following the Great East Japan Earthquake on March 11, 2011, laws concerning high-pressure gas equipment were tightened and the standards of earthquake resistance were reviewed. In response to these changes, we have been systematically reinforcing the spherical tanks that store LPG at the Group's refineries and complexes in order to improve the earthquake resistance of their support structures. In addition, Yokkaichi Refinery of Showa Yokkaichi Oil Co., Ltd. reinforced its marine jetty with a view to strengthening disaster response capabilities. Going forward, we will consider further enhancing the earthquake resistance of the the Group's refineries and complexes.

#### Reinforcement of LPG tank support structures (Tokuyama Complex)



#### Reinforcement of marine jetty with a view to strengthening disaster response capabilities (Yokkaichi Refinery of Showa Yokkaichi Sekiyu Co., Ltd.)



### Safety Activities at Our Refineries and Complexes

At the Group's refineries and complexes, the Safety & Environmental Protection Section of each site plays a central role in promoting safety assurance of refineries and complexes and environmental conservation. Moreover, in collaboration with business partners of refineries and complexes, we conduct thorough daily safety inspections and take all possible measures to prevent accidents, while forming a self-protection and disaster prevention teams in the event of an accident and carrying out periodic disaster prevention training.

Specifically, in order to promptly implement emergency responses in the event of natural disasters and other disasters as well as disaster prevention activities, we prepare disaster scenarios based on past disasters and carry our periodic disaster prevention training with business partners. We also conduct evacuation drills in consideration of the occurrence of tsunami caused by a large-scale earthquake.

### Safety Education

#### Companywide Education

As part of the company-wide education for new employees in April, we will use videos of past serious accidents at Idemitsu to raise awareness of safety and ensure that employees are always aware that safety is the foundation of management. In seminar for newly appointed managers conducted at each time of personnel changes, we ensure that they learn their legal roles in safety and environmental management.

#### Training Seminar Organized by the Safety & Environmental Protection Headquarters

Safety, Environment (HSSE) & Quality Assurance Department as the secretariat of the Safety & Environmental Protection Headquarters provides key personnel such as managers in charge of safety and environmental management at each executive department and business site with training seminars on their roles based on internal rules and the basics of safety and environment management in order to foster their leadership to autonomously promote the PDCA cycle for safety and environment management at their own executive department and business site. (Seminars are scheduled to be held 10 times in FY2019)

#### Training Organized by the Manufacturing & Technology Department's Technical Training Center

##### ● Training for operators of manufacturing facilities

The Technical Training Center provides training for all operators based on the mid-term training plan in order to foster them as production engineers (PE) The PE is an operating engineer who can logically understand processes, facilities and systems, and their interrelationships, and make comprehensive decisions to ensure the optimal operation of refineries, complexes, and plants in a safe and efficient manner. The PE is responsible for ensuring the safety of the Group's refineries, complexes, and plants.

##### ● Reinforcement of safety training

The Technical Training Center is working to strengthen safety training. For example, it provides the foreman or delegate (assistant to the foreman) with foreman-level training to enhance their abilities to make decisions on emergency measures as the conductor. This is the only advanced training in Japan we have developed in-house. Participants form an operation team to operate a training plant modified from the desulfurization unit that was actually in operation at Tokuyama Complex. Participants conduct practical training in the event of an abnormality at night or on a holiday by reporting and conducting initial activities, emergency shutdown, and disaster prevention activities while the incident is progressing. In addition, safety management training is provided to newly-appointed technical managers at refineries and complexes. This training is divided into two parts. Each participant reconfirms the points of safety management in the basic training, and recognizes the issues and clarifies the action plan to strengthening safety in the follow-up training. In addition, we hold experiential training for governments and organizations, and as part of cooperative human resource development for local communities, we hold seminars to raise safety awareness utilizing our risk sensing equipment and VR in cooperation with outside training centers. These training and seminars have received high reputation from outside the Company.





## Ensuring Safety

### Practical Fire Fighting Training

#### ● Training of personnel for fire fighting at refineries and complexes

In case of a fire or explosion, it is extremely important to implement initial fire extinguishing activities and measures to prevent expansion to minimize damage inside and outside refineries and complexes. In this regard, recognizing that it is important to accumulate practical training based on the basic theory of fire fighting, we are focusing on training of personnel for fire fighting. For example, they learn the basics of fire fighting activities through classroom lectures, and conduct training on handling actual equipment and extending hoses for fire fighting according to the training plan. Particularly at the Hokkaido Refinery, Chiba Complex and Aichi Refinery, we conduct fire fighting training using actual fire training facilities.

#### ● Actual fire training at Niigata Disaster Prevention Training Center

The Safety, Environment (HSSE) & Quality Assurance Department has the Niigata Disaster Prevention Training Center, which receives a large number of trainees every year from within the Company as well as from various companies in the industry. The training assumes that a fire breaks out by facility at a business site. We are strengthening the initial fire extinguishing capability at each business site by learning the initial fire extinguishing method appropriate to the nature of oil fires through theory (classroom lectures) and practice (actual fire training). This Training Center has received high reputation from outside the Company as a facility where they can gain valuable experience and learn firefighting techniques.

### Use of External Training

#### ● Training for top management

In order to prevent serious accidents and disasters, it is extremely important that the top management, i.e. general managers of refineries and complexes have a strong awareness of safety, and exercise strong leadership to promote accident prevention measures. In this regard, associations in the oil and chemical industries and related companies including the Company emphasized to an external training center the importance of developing safety awareness among top management. As a result, the center has regularly held the special lecture entitled "Safety from now on and the role of top management" since March 2016. Every year, general managers of refineries and complexes and top management of the Manufacturing & Technology Department in the Head Office take part in the lecture to strengthen leadership for safety in industry, together with general managers of refineries and plants of other companies in the vicinity of the Center.



## Quality Control and Quality Assurance

### Basic Approach to Quality

Our group has defined its basic stance on quality as "In order to ensure product safety and minimize the impact on people and the environment, we shall promote quality assurance activities that take into account the entire life cycle of our products and services, from development to consumption or disposal, and strive to improve customer satisfaction and protect consumers." In addition, the "basic quality assurance guidelines" which is the highest-level internal regulation on quality, sets forth the following quality assurance policy as the basic concept of quality.

1. We provide products and services of appropriate quality from the customer's perspective.
2. Develop environmentally conscious production activities and products.
3. Provide safe and secure products.
4. We will always ensure compliance and fulfill our social responsibilities.

### Quality Control and Quality Assurance System

Our group's quality assurance system consists of 2 components: business units and affiliated companies, and a corporate-level system for overseeing these. In actual quality activities, these two systems work together to ensure that the Group as a whole implements its quality assurance policy.

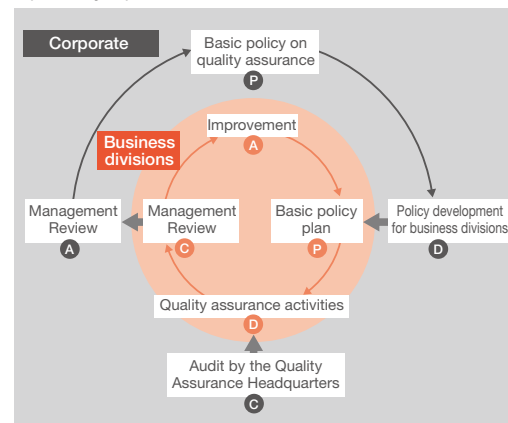
#### Quality control and quality assurance systems in each business division and affiliated company

Our group's business divisions and affiliated companies conduct quality management activities at every stage of our operations, from product development to manufacturing and sales, that contribute to the maintenance and improvement of the quality of products and services that meet the needs of customers and society. In addition, each business division and affiliated company has introduced a quality assurance management system to ensure the quality of products and services provided to customers. A total of 39 business units and affiliates in our group have acquired ISO 9001 certification. (As of July 1, 2019)

#### Quality assurance system at the corporate level

The Quality Assurance Headquarters has been established as a corporate quality assurance organization to strengthen governance of quality throughout our group. The Quality Assurance Headquarters is headed by the executive in charge of quality assurance (director) appointed by the Board of Directors, and is headed by the heads of quality-related business divisions and the presidents of affiliated companies. The Quality Assurance Department of the Health, Safety, Security and Environment (HSSE) serves as its secretariat. The Quality Assurance Headquarters formulates policies for company-wide quality assurance activities and promotes the important issues such as maintenance, review and improvement of the quality assurance management system. Each business division follows its own PDCA cycle (Idemitsu Sustainability Report 2019 p.42) in accordance with these policies. As a general rule, the Quality Assurance Headquarters meets once a year to monitor progress and determine our group's basic policies for the next fiscal year. We also conduct regular quality audits to improve the activities of each division.

■ The Idemitsu Group's Quality Assurance Management System (PDCA cycle)



### Commitment to Quality Management and Quality Assurance Initiatives

#### Initiatives to Ensure Product Safety

We conduct checks of product safety at each product stage, from research and development through sales based on "Product Safety Regulations." Regulations of various countries concerning chemical substances have been frequently changing, and it is essential to respond swiftly and decisively to these changes. In FY2017, the Idemitsu Group introduced a new tool aimed at better managing information on hazardous properties of chemical substances used in our products. Having expanded the scope of departments subject to chemical information management, we have successfully responded to domestic and overseas regulations, which are evolving frequently.

#### Response to Complaints on Quality

In the unlikely event of serious product safety or quality issues, we follow the "Crisis Response Rules" to minimize damage and any impact on society at large. The Customer Relations Center receives quality-related complaints and inquiries, and depending on the content, works with relevant departments to provide a swift response. We had no serious quality incidents requiring company-wide response during FY2018.

#### Providing Appropriate Product Safety Disclosure and Labeling

The Idemitsu Group issues safety data sheets (SDS) for the products it manufactured as stipulated under the relevant laws. Each product indicates the hazardous properties and safety-related details of products according to chemical classification that complies with GHS (Globally Harmonized System of Classification and Labelling of Chemicals). Idemitsu's website also provides a system for searching for products by name or usage and to view product safety information.

#### Employee Education and Awareness of Quality

The Idemitsu Group conducts education and awareness-raising activities for the purpose of raising the quality awareness of its employees. In order to promote quality assurance activities in each business division and affiliated company, we hold training sessions for managers in charge of quality and highly specialized in-house seminars on responding to laws and regulations concerning chemical substance management, which help promote quality assurance activities for the entire group. In addition, every November, as part of the "Quality Month Activities," we provide lectures on quality, solicit campaign slogans on quality, and display posters on quality, all of which provide an opportunity for each employee to think about quality.

■ 2019 Lecture on Quality





## Collaboration with Partners

### Sustainable Procurement

#### Concept of Sustainable Procurement

Idemitsu aims for the sustainable development of society and the company by conducting fair and equitable procurement based on proper procurement ethics, contributing to the improvement of business competitiveness, and conducting honest management for all stakeholders. To this end, we have established internal rules "General rules concerning procurement activities."

We aim to contribute to the realization of a sustainable society throughout the supply chain by establishing a policy for selecting suppliers when purchasing or borrowing the materials, construction, and services necessary for our company's business operations, and by having suppliers understand the policy on our procurement activities.

#### About Guidelines

The business environment is diversifying, and in order to achieve sustainable development, it is expected that each company will make active efforts to fulfill its social responsibility not only for one company but also for the entire supply chain. In order to fulfill this responsibility, we are formulating our own sustainable procurement guidelines based on ISO 26000 (Guidance on social responsibility) issued in November 2010, ISO 20400 (Guide to Sustainable Procurement) issued subsequently, SDGs (Sustainable Development Goals) adopted at the United Nations Summit in September 2015, and the 10 principles of the United Nations Global Compact.

#### Conduct Self-Assessment of Sustainable Procurement for Suppliers

In order to promote sustainable procurement throughout the entire supply chain, in 2019 we began an independent survey of the degree to which our major suppliers are adopting sustainable procurement. Specifically, the Corporate Sustainability Department, the Procurement Department, and some other departments collaborated to send a "Sustainable Procurement Self-Evaluation Sheet" consisting of 35 items in 7 fields, including "organizational governance," "human rights," "labor practice," "environment," "fair business practices," "consumer issues," and "social contribution" to approximately 300 major suppliers and asked them to perform self-evaluations. In addition to providing feedback on the results of these assessments, if there are any concerns, we work with suppliers to improve and solve these issues together through dialogue, thereby reducing risk throughout the entire supply chain. This survey will be repeated once every three years to ensure continuous improvement.

Our sustainable procurement initiatives have only just begun, but society, suppliers, and we are working to achieve a triple win.

### Collaboration with Dealers and Distributors

Idemitsu operates its businesses through a powerful network of 1,217 dealers and distributors and 6,395 SS (service stations) nationwide. Branches serve as contact points to provide fine-tuned support for the business management and SS management of dealers and distributors. In May and June 2019, Owners' Meetings were held at 10 locations across the country for the first time, bringing together dealers and distributors to interact to promote and practice their sales strategies with customers as our top priority.

In cooperation with "Idemitsu Association" an organization of dealers, and "National Showa Shell Association" an organization of distributors, we are also working together in the field of social contribution by contributing to the community and revitalizing the community. We have also established our own certification and training systems to enhance the knowledge and skills of its staff in order to increase customer trust in its technologies and services, as well as to continue generating new added value by sensitively identifying customer needs.

In order to provide a stable supply of energy, service stations, which are strong in times of disaster, are expected to play a role as disaster prevention centers. We are demonstrating a system that combines solar panels and power storage functions at four service stations in the Tokyo metropolitan area.

In addition to providing a constant refueling function in the event of a power failure, it can also be used as a power supply point for charging mobile phones and smartphones and for Wi-Fi connections, enhancing the durability and versatility of an emergency power supply.

\* The figures in this section refer to the number of dealers and distributors as of the end of June 2019 and the number of service stations as of the end of September 2019.

#### ■ Joint owners' meeting of dealers and distributors (2019)





## Collaboration with Partners

### Major independent certification programs

#### ■ Idemitsu Technical Master Program

A qualification program for the purpose of developing human resources who can make comprehensive energy proposals that meet customer needs in the field of industrial petroleum and lubricants sales.

(Number of certified persons in the petroleum division Grade1: 21, Grade2: 76, Grade3: 224 \*Number of certified persons in FY2018)  
(Number of certified persons in the lubricants division Grade1: 48, Grade2: 155, Grade3: 240 \*Number of certified persons in FY2019)

#### ■ Zepromeister Program

A certification program to train service station oil leaders through acquisition of basic knowledge and product knowledge of oil, as well as exchange techniques that will become increasingly complex in the future.

(Number of certified person Grade1: 411, Grade2: 2,357, and Grade3: 3,923 \*The number of incumbents as of the end of March 2019)

#### ■ Showa Shell Royal Manager (SRM) Program

A qualification program launched in 1979 to further develop the human resources of active store managers, with the aim of improving service station management capabilities that match the times and management capabilities that overcome changes.

(Number of certified persons Grade1: 276, Grade2: 2,014, and Grade3: 7,280 \*The number of incumbents as of April 2019)

#### ■ Showa Shell Oil Meister Program

A qualification program for training service station lubricants sales leaders who have a high level of both technique and sales

(Number of certified person 1,342 \*The number of incumbents as of April 2019)

#### ■ Showa Shell Car Life Advisor Program

A qualification program to train service station personnel who have advanced knowledge of vehicles in general and who are capable of giving appropriate advice to customers

(Number of certified persons 442 \*The number of incumbents as of April 2019)

#### ■ Shell Lubricants Japan Lubricants Expert Program

A qualification program started in 1970 to develop human resources capable of responding to the diverse needs of customers concerning lubricants and grease

(Number of certified persons Grade1: 335, Grade2: 1,761 \*Cumulative number of person since 1970 as of April 2019, excluding those who passed in 2019)

## Exchanges and Dialogues with Oil-Producing Countries

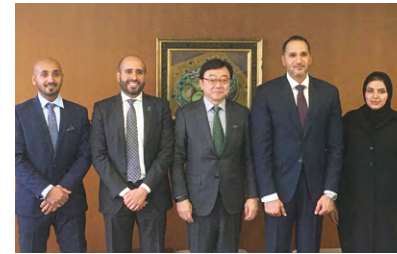
Idemitsu has established a representative office to promote exchanges and dialogue with oil-producing countries in the Middle East and other regions in order to build strong relationships of trust. In recent years, we have strengthened our relationship of trust with oil-producing countries through joint ventures with capital participation. In addition, Japan supports the development of human resources and technical support in oil-producing countries by dispatching experts to these countries with the support of the JCCP (Japan Cooperation Center Petroleum) and by accepting senior officials and engineers in Japan. We also participate in the Joint Project for Infrastructure Development in Oil-producing Countries (FY2018), which is implemented by the JCCP.

Saudi Aramco, the national oil company of the Kingdom of Saudi Arabia, one of the world's largest oil-producing countries, has also deepened cooperation in crude oil procurement, and is flexibly selecting and procuring crude oil whose refinery performance is optimal in light of market trends. Because it is possible to supply a wide variety of crude oil, multiple types of oil that we want are loaded into tankers and transported at one port of call.

### Receiving Training Performance (FY2018)

Accepting 48 trainees from the United Arab Emirates, Qatar, Oman, Mexico, Myanmar, and Vietnam

### ■ Acceptance of executive candidates



## Collaboration with Subcontractors

Refineries and plants outsource plant maintenance, overland shipping, and marine transport to subcontractors. At all of our business sites, we have organized three cooperative associations, one for construction and maintenance, one for land transportation, and the other for maritime transportation. We are promoting safe and stable operations and environmental conservation at its refineries and plants in cooperation with these associations.

## Collaboration with Transport Companies and Maritime Shipping Companies

Idemitsu outsources the transportation of petroleum products to transport companies and maritime shipping companies. The consigned company has organized a council to promote safety and strengthen cooperation among companies. We are a special member of the council.

The council of land transport companies holds safety campaigns, training sessions for operation managers, and awards for crew members with no accidents and no violations. The council of maritime shipping companies carries out safety campaigns, thorough implementation of safety activity policies and specific measures, and horizontal development of good and dangerous examples.

In addition to calling attention to the "Safety, environment and quality" aspect through the two councils, we are also working to build a high-quality, competitive logistics system, while emphasizing safety activities rooted in the workplace, through direct dialogues with crews of land lorries, the masters of coastal tankers, and the crew.



## Social Contribution Activities

### Concept of Social Contribution Activities

Idemitsu Group continues to work on social contribution activities focusing on the development of young people and children who will lead future generations. Through these activities, we interact closely with the people of all regions.

### Social Contribution Expenses

Trends in Social Contribution Expenses*	(Unit: 1 million yen)	
	Idemitsu	Showa Shell
FY2016	215	63
FY2017	209	65
FY2018	219	68

\* The following events have been compiled.

Idemitsu: Idemitsu Music Award, Mirai wo Kanaderu Ongakukai, FURUSATO PROJECT, KidZania, IDEMITSU IHATOVE TRIAL, Community Promotion by Sales Department, Showa Shell: Shell Art Award, Environmental Photo Contest " Watashi no Machi no O to x", Energy Education Program for Children, TABLE FOR TWO, and office provision to Refugees International Japan (RIJ).

## Examples of Social Contribution Activities

### Contribution Through Cultural Activities

#### ●Idemitsu Music Award

In 1990, we established the Idemitsu Music Awards to commemorate the 25th anniversary of the music television program "Daimei no Nai Ongaku-kai" (Untitled Concert). The awards support the activities of promising young and up-and-coming musicians as a way to help elevate music culture in Japan. Over the course of the 29 awards ceremonies held thus far (as of FY2018), 103 individuals and one group have been honored. Every honoree continues to shine in their respective field. Among the many talented musicians, the selection criteria seek for something beyond mere mastery, rather, with an eye to nurturing new talent, they focus on drive, intrinsic ability, and future potential. To qualify, a candidate must be a musician no older than 30 and living and working in Japan. Each award recipient is given 3 million yen in prize money to encourage them to continue perfecting their self-improvement.

Every year, a concert is held commemorating the awards, and the musicians give wonderful performances in front of a large audience. The concert is broadcast on "Daimei no Nai Ongaku-kai"(Untitled Concert) and garners a lot of public attention. In FY2018, the recipients were Tomoharu Ushida (Piano), Sunao Goko (violin) and LEO [Leo Konno] (koto).

■ Mr. Tomoharu Ushida



■ Mr. Sunao Goko



■ Mr. Leo Konno [LEO]



#### ●"Daimei no Nai Ongaku-kai" (Untitled Concert)

We have been the sole sponsor of the music television program "Daimei no Nai Ongaku-kai" (Untitled Concert) for over 50 years since 1964. The program features live performances of orchestras with the aim of delivering quality music straight to people's living rooms, with its principal focus on classical music. In April 2017, Kanji Ishimaru, who is active on television and stage, became the sixth host of the show, helping the audience appreciate the appeal of the music from a new viewpoint and contributing to the history of the program.

■ "Daimei no Nai Ongaku-kai" (Untitled Concert)



© TV Asahi

#### ●Mirai wo Kanaderu Ongakukai (Music events hosted by Idemitsu Kosan)

We have held concerts since 2006, mainly in regions where we have established refineries and complexes. In FY2017, the concert program was reimagined as Portraying the Future in Music, with the aim of supporting musical experiences for the future generations in part by providing opportunities for young musicians to showcase their talents and for local students to perform with professional musicians.

We also hold music workshops at local elementary and middle schools around the time of the concerts.

■ Joint concert with elementary school students and professional musicians



■ Music workshop at an elementary school



#### ●Shell Art Award

This art award was established in 1956 to support young future leading artists, and is open to all artists aged 40 or younger. This art award is highly evaluated as a "gate to success for young artists" with a long history since its establishment as a prize in the completely open competition at that time when there were few independent art awards. In 2018, the 62nd anniversary of the establishment, we had 593 applicants and 839 entries of works, from which we selected the Grand Prix, Judges' Award, and Special Student Award. At the "Shell Art Award 2018" held at the National Art Center in Roppongi, Tokyo, in December 2018, 54 award-winning and other winning works were exhibited, and 6,123 people visited during the 12-day exhibition. At the exhibition hall, we held the "Shell Art Award – Artist Selection (SAS) 2018" at the same time, which showcased four young artists' recent and new works selected by the judges in the previous year. In this way, we continue to work on supporting young artists. "Audience Award," which is selected by the votes of visitors, was held for the fifth time.

Since 2018, we held the "Shell Art Award Residence Support Program" for the past award-winning artists and artists of other winning works. This program is designed to help artists develop themselves by gaining new inspiration and awareness through overseas stays and interactions with authors from other countries. We provide award-winning artists and artists of other winning works with the opportunity to stay overseas and support their two-month art activities at "Cité internationale des Arts," residence facility in Paris, France.

■ 2018 Grand Prix "Self Portrait I" by Taro Kondo



■ Grand Prix winner Mr. Taro Kondo





## Social Contribution Activities

### ●Environmental Photo Contest "Watashi no Machi no ○ to ×" (Things to Preserve and Correct around Our Town)

We hold a photo contest for children and students across the country for photos of the scenery of "×" that they want to preserve in their local community, and photos of the scenery of "○" that they want to improve immediately, with comments attached. We held the 14th contest in 2018 supported by the Ministry of the Environment.

The individual category consists of the elementary school, junior high school, and high school/technical college divisions. In 2018, there were a record high of 7,416 entries (675 photos in the elementary school division, 4,912 in the junior high school division, and 1,829 in the high school and technical college division), and the number of entries has been increasing year by year. Photos are used as teaching materials for environmental education at school and homework during summer vacation. In the school division, we had 244 school applicants from all over Japan.

#### Elementary School Gold Award "I want to protect the most beautiful beach in Japan"

Comments on the photo

##### Mr. Ichiro Motohida (Okinawa Prefecture)

Hateruma Island where I live has Nishihama Beach that was selected as the most beautiful beach in Japan. Various marine species such as sea turtles, clownfish and coral live around the beach. On the other hand, we see litter on the beach such as plastics and glass bottles, and sometimes drums. We conduct beach cleaning activities. I'm very disappointed to see the beach with litter after we worked to clean the beach. So, I want to say to all people in the world, "Please don't litter."

■ Photo ○



■ Photo ×



## Community Contribution Activities

### ●Visiting Class and Energy Education Program for Children

We provide mainly elementary school students in the vicinity of refineries, complexes and plants with lectures at school to deepen their understanding of climate change and other issues caused by global warming. With the aim of encouraging children to know that the issues are not problems in the distant future but immediate problems to them, we provide them with classes of experiments, handicrafts, and quizzes for hints and tips on energy-saving, so that they can find opportunities to practice global warming countermeasures in their daily lives.

■ Visiting class



■ Energy Education Program for Children



### ●FURUSATO PROJECT

Since 2018, we have been holding the "FURUSATO PROJECT" at elementary schools across the country, where children can learn hands-on lesson of traditional musical instruments and conduct commemorative cherry-tree planting. We started these activities with the aim to provide children of future generations with opportunities to experience the real music. We hope these memorable experiences will help children expand their interest in Japanese traditional culture and remember "hometown" even when growing up so that they will pass on the good old hometown to future generations. As of the end of December 2019, we held the event at 13 elementary schools nationwide, participated by 3,454 elementary school children from Hokkaido in the north to Okinawa in the south.

■ Hands-on lesson of Japanese drums



■ Commemorative cherry tree planting



### ●KidZania

At KidZania, an inspiring, interactive indoor theme park located in Toyosu, Tokyo, and Koshi-en, Hyogo Prefecture where children experience various occupations and social activities, we have been operating a service station pavilion (called "gas station" at KidZania) since 2006, allowing children to learn how society works in a fun way.

■ Idemitsu Service Station (gas station) Pavilion



### ●IDEMITSU IHATOVE TRIAL

We also contribute to local community development through the promotion of motorsports by serving as the main sponsor of the Idemitsu Ihatove Trial, a motorcycle trial held in the northern part of Iwate Prefecture since 1989. The theme since the 2017 Trial has been "giving the trial spirit to future generations." We have been striving to nurture genuine trial riders and to support children to broaden the horizons for riders. As part of our environmental initiatives, we offset CO<sub>2</sub> emissions from motorcycles used in this event by using the "J-VER offset credit" scheme in maintaining forests owned by Iwate Prefecture. We aim to further develop the event by demonstrating the allure of motorcycle trials to future generations.

■ Children's motorcycle experience



■ Group photo of riders



©tvi

©tvi



## Social Contribution Activities

### ●Introduction of Photovoltaic Power Generation and Storage System to Local Communities

In collaboration with Kunitomi-cho, Miyazaki Prefecture, where its manufacturing plant is located, Solar Frontier Co., Ltd. of the Idemitsu Group launched a project to introduce a photovoltaic power generation and energy storage system, which is useful for securing power supply in the event of an emergency such as a typhoon or earthquake, into a total of four elementary and junior high schools that are major evacuation centers in the town, and conducted a crowdfunding campaign for the project. The system manufactured by the company combines a foldable CIS solar battery that is easy to store and carry and a storage battery. The systems were used to support areas affected by the typhoon in September 2019.

#### ■ Disaster support system



#### ■ Using the system



#### ■ Children at a school using the system



### ●Hokkaido Idemitsu Children's Art Contest

The "Hokkaido Idemitsu Children's Art Contest" held by Hokkaido Idemitsu-kai\* marked its tenth anniversary in FY2018. The contest has received acclaim from both visitors to the exhibitions of the winning works and the participating educational institutions, including schools and childcare centers. The total number of entries increased significantly from 1,451 in the first year to 8,564 in FY2018. After the works have been judged, a poster is made featuring the top selections and displayed at Idemitsu service stations within Hokkaido and an exhibition tour is held around Hokkaido. In FY2018, we simultaneously held an exhibition of the 86 winning works and special exhibitions displaying some works selected from entries in the exhibition area, in seven locations starting in Obihiro, then going on to Asahikawa, Kushiro, Hakodate, Muroran, Sapporo, and Kitami.

\* Idemitsu-kai: Organization of owners of retail outlets

#### ■ At the exhibition



#### ■ The owner of a retail outlet holds the award ceremony



### Contributing to the International Community

#### ●TABLE FOR TWO

When a person purchases a TFT branded meal at the cafeteria of the Daiba Frontier Building or the Kunitomi Plant of Solar Frontier Co., Ltd., a portion of the proceeds will be donated to provide a school lunch for a student in need in developing countries through the NPO "TABLE FOR TWO International." This is a social contribution activity in which anyone can participate by purchasing one of the TFT branded healthy meals so as to provide a school lunch to one student in developing countries. In addition, a participant can stay healthy by taking a nutritionally balanced meal.

Donation at the Daiba Frontier Building started in December 2013 and at the Kunitomi Plant it started in April 2016. As of March 31, 2019, we donated school lunches for 19,683 students.

#### ■ Children in developing countries supported by Idemitsu



Photo by TABLE FOR TWO International

#### ●Providing office to Refugees International Japan (RIJ)

We have been providing office for free to the non-profit organization "Refugees International Japan (RIJ)" since its foundation in 1979, which works to support refugees.

RIJ raises funds through donation campaigns and sales of greeting cards and crafts, and provide supplies to refugees in Myanmar, Lebanon, Nairobi and other countries. In addition to providing supplies, setting a long-term goal of refugees' economic independence, IRIJ works to provide them with stable and continuous support through language education and vocational training within their communities.

#### ■ Vocational training in Nairobi



Photo by RIJ

### Activities at Overseas Bases

#### ●Supporting the Munch Museum in Norway

In Norway, which is one base for our petroleum upstream business, Idemitsu Petroleum Norge (based in Oslo) has been a sponsor of the Munch Museum, which is owned by the municipality of Oslo.

The support efforts began in 1991 with a donation to help fund the expansion of the museum. In the 2000s, the company supported restoration work being carried out on the famous artworks, "The Scream" and "Madonna," which were stolen and then recovered with damage.

The works of Edvard Munch are among Norway's national treasures, and Idemitsu's support for the Munch Museum is well-known as being among the longest-standing corporate sponsorship of the arts in the country. The Munch Museum is scheduled to move from Toyen, Oslo to the waterfront area of the city in 2020 to be open as a new museum while we have decided to continue its sponsorship.

In addition, as part of the activities of the Japan-Norway Society (Oslo), a private friendship organization between the peoples of Japan and Norway, Idemitsu actively contributes to the friendship and goodwill of the peoples of both countries. For example, Idemitsu regularly guides tours of the Munch Museum.

#### ■ Munch Museum



©Munchmuseet



## Social Contribution Activities

### ●Support for Japanese Language Learning in Vietnam

Our Hanoi Office in Vietnam has supported Japanese language classes at Tohoan Junior High School in Hanoi since 2015. About 550 students of all the 1,000 students in the school study Japanese as a second foreign language. On April 22, 2019, the school held a ceremony for the completion of studying Japanese language. The Hanoi Office gave a commemorative gift to the 50 top students with good results. After the ceremony they toured the Idemitsu Q8 Petroleum SS that opened in 2017. They saw the staff's Japanese style customer services at the clean service station, including car window cleaning service, with which drivers at the station looked satisfied. Some students commented by saying "I felt the staff's hospitality through their hard work." and "I like the way Japanese people work."

The support for learning Japanese language received high acclaim from the Japanese Language Center of Hanoi's Bureau of Education and Training. In 2019, a joint Japanese language contest was organized by 11 schools, including Tohoan Junior High School.

■ Japanese language contest



### ●Initiatives to Address Community Issues in Australia

Idemitsu Australia Resources Pty Ltd. (based in Brisbane), which is one of the coal business bases, is working to promote initiatives that could contribute to solving social problems in the community from a long-term perspective under the following four policies by the management level.

- Environmental Management Policy
- Energy Management Policy
- Cultural Heritage Policy
- Stakeholder Engagement Policy

#### 2018 Initiatives

##### Girls' Academy

To lower the high unemployment rate among Aboriginal women and help realize quality of life improvements for the community over the long-term, IAR sponsors a youth training program that offers guidance to local female students through the cultural exchange.

■ Girls' Academy



##### Investment in the West Pack Rescue Helicopters and Community Hospitals

IAR helps support improvements in emergency medical care in rural areas as well as better community hospitals.

##### Hands-on Agricultural Learning Program

To support local high schools, IAR has opened a portion of its landholdings scheduled for future development for use in hands-on agricultural programs that teach livestock grazing, growing crops, and land management (such as maintaining fences). Through these initiatives, IAR is striving to promote better communication with the community.

Over the long-term going forward, IAR will continue to support initiatives that could contribute to maintaining local population levels and creating richer communities.

### ●Forest Restoration Activities in Indonesia

In 2004, P.T. Idemitsu Lube Techno Indonesia was founded to produce and market lubricants in Indonesia. On the island of Sumatra, the company is working with a local NGO (Orangutan Information Centre) to rejuvenate forests that are at risk of destruction.

The Leuser Ecosystem, which is a world heritage site centered on Leuser, North Sumatra Province, is one of South Asia's most precious forests, spanning over 2.6 million ha and providing a habitat for tigers, Sumatran rhinos, elephants, and other wildlife. However, due to its mineral reserves, the forest is in crisis of forest destruction from roadworks, large-scale mining operations, palm oil plantation, and other development. Thus, with a portion of profit from the sale of fuel-efficient motor oil 0W-20 for gasoline engines as funds for planting, we have been planting trees in a 7 ha area of forest to return the area to its original forested state over about five years from May 2017. The tree planting area will steadily expand in line with sales of the fuel efficient motor oil 0W-20 for gasoline engines.

Through this initiative, the company contributes to reducing the environmental impact while supporting activities that directly protect the natural environment.

■ Tree planting activities







## Message from Outside Directors



**Increasing diversity within employees and the board of directors to "stronger and more agile global company."**

Outside Director  
**Mackenzie Clugston**



**"I would like to provide support for development of next-generation leaders and success of female leaders."**

Outside Director  
**Yuko Yasuda**

### How do you recognize your expected role as an outside director? Please tell us what role you currently play?

The role expected as an outside director is to provide diversity to the Board of Directors when considering corporate strategies, monitoring executive departments and making decisions on important management issues, in other words, to give opinions from a perspective different from that of internal directors. At the Board of Directors, I actively express constructive opinions from the perspective of a foreign national and former diplomat. I hope to continue contributing to the enhancement of our company's corporate value.

### What are the characteristics of Idemitsu Kosan's governance?

After the business integration, the number of independent outside directors increased to five, and several experienced corporate managers joined the board, creating a diverse and powerful structure. I believe that a broad approach from business perspective has revitalized the deliberations of the Board of Directors. The chairman oversees the deliberations of the Board of Directors and leads discussions from a broad perspective even on difficult issues.

Other notable changes following the business integration include internal rules enhancement and Nomination

and Compensations Advisory Committee reorganization.

In addition, outside directors are provided with detailed prior explanations of the Board of Directors meetings and given opportunities to visit business sites in Japan and overseas. Through these efforts, we gain a better understanding of the company's business operations and enhances the effectiveness of its governance to support board discussions.

### What are your expectations for the Idemitsu Group?

I believe that the business integration is proceeding very smoothly. I think this is because employees at any level of the two companies are actively working toward the integration. I expect to see significant synergies, both financially and non-financial.

Since its founding, our company has been unique among Japanese companies, demonstrating boldness and distinctive corporate culture. I hope Idemitsu Group will make the most of both companies' legacies and use its excellent knowledge in business expansion overseas as well as cutting-edge research as leverage to become one of the world's top energy companies. I believe that by improving the diversity of our workforce, our company can become a "stronger and more agile global company."

Also, I expect that we will anticipate the changes caused by global climate change and take appropriate measures, which at the same time will lead to the resolution of various social issues.

### How do you recognize your expected role as an outside director? Please tell us what role you currently play?

I believe that the most important role of outside directors is to supervise and support executive management which formulates strategy and translates it into action. By engaging in such activities in an objective manner, I hope to contribute to the company to attain sustainable growth. Although I lack actual management experience at large listed companies or knowledge of the oil industry, I believe I am expected to contribute with knowledge of corporate governance, leadership development and succession in terms of global standards as well as diversity. In particular, for the new integrated company, I hope to contribute to the company to implement a transparent leadership succession and development program.

I strongly believe the female talent at this company to be a very important asset for our energy industry in Japan and want to see their further success in this market. As the Chair of the Compensation Advisory Committee of the new integrated company, my mission will be to supervise the development of transparent, performance-based compensation system.

### What are the characteristics of Idemitsu's governance?

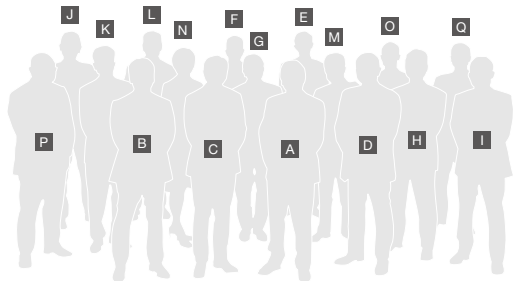
I've observed that the new integrated company aims for a highly effective corporate governance structure that takes advantage of the strengths of both companies. The board consists of diverse background including management, foreign nationals, academics and women which encourages very active and robust discussions to enhance the quality of the board.

In order to deepen the knowledge and the understanding of business, there are a number of training programs or onsite visiting options available to outside directors, and they provide well-considered explanations of each agenda item just before the actual board meetings. The board spends relatively enough time discussing forward-looking topics such as medium-term management plan and actual action plans to implement the strategy, which I believe to be the most important mission of the board. For example, the board discussed how they could become a resilient energy company to supply energy infrastructure to society, under such high pressure needs as balancing ESG and SDGs issues.

In my observation, one of the challenges of most of Japanese company boards is less active internal directors, compared to the active participation of outside directors. However, at our company, internal directors actively express their opinions to participate in board discussions, which I believe to be a gift of the history and culture of Idemitsu's DNA.



## Directors and Audit &amp; Supervisory Board Members



## Directors and Audit &amp; Supervisory Board Members (June 29, 2109)

Name	Position	Numbers of shares held	Experience	
<b>A</b> Takashi Tsukioka	Chairman and Representative Director	44,535	April 1975 June 2007 June 2008 June 2009 June 2010	Joined Idemitsu Kosan Co.,Ltd. ("Idemitsu Kosan") Executive Officer and General Manager of Supply & Logistics Department, Idemitsu Kosan Managing Executive Officer and General Manager of Supply & Logistics Department, Idemitsu Kosan Director and General Manager of Supply & Logistics Department, Idemitsu Kosan Managing Director and Managing Executive Officer and General Manager of Corporate Planning Department, Idemitsu Kosan
			April 2011 June 2012 June 2013 April 2018 May 2018	Managing Director, Idemitsu Kosan Executive Vice President and Representative Director, Idemitsu Kosan Representative Director & Chief Executive Officer, Idemitsu Kosan Chairman and Representative Director, Idemitsu Kosan (to date) President, Petroleum Association of Japan (to date)
			April 1979 March 2006 March 2009 March 2013 March 2014 March 2015 March 2016 March 2018 April 2019	Joined Shell Sekiyu K.K. Executive Officer, Showa Shell Sekiyu K.K. ("Showa Shell") Corporate Executive Officer, Showa Shell Executive Officer Vice President, Oil Business COO, Showa Shell Executive Officer, Oil Business COO, Showa Shell President & Representative Director, Group CEO, Energy Solution Business COO, Showa Shell President & Representative Director, Group CEO, Showa Shell Representative Director, President, Executive Officer, CEO, Showa Shell Vice Chairman and Representative Director, and Vice Chairman and Executive Officer, Idemitsu Kosan Co.,Ltd. (to date)
			April 1980 June 2011 June 2013	Joined Idemitsu Kosan Co.,Ltd. ("Idemitsu Kosan") Executive Officer and General Manager of Treasury Department, Idemitsu Kosan Director, Managing Executive Officer and General Manager of Treasury Department, Idemitsu Kosan
			June 2014 June 2017 April 2018 April 2019	Managing Director, Idemitsu Kosan Executive Vice President and Director, Idemitsu Kosan Representative Director & Chief Executive Officer, Idemitsu Kosan President and Representative Director, and Chief Executive Officer, Idemitsu Kosan (to date)
			April 1980 March 2011 March 2013 June 2014 June 2015 March 2016 March 2018 April 2019	Joined Showa Sekiyu K.K. Corporate Executive Officer, Showa Shell Sekiyu K.K. ("Showa Shell") Senior Corporate Executive Officer, Showa Shell Director & Vice President, Seibu Oil Co., Ltd. ("Seibu Oil") Representative Director & President, Seibu Oil Representative Director, Vice President, Showa Shell Representative Director, Vice President, Executive Officer and Oil Business COO, Showa Shell Representative Director, Executive Vice President and Executive Officer, Idemitsu Kosan Co.,Ltd. (to date)
<b>E</b> Takashi Matsushita	Director, Executive Vice President and Executive Officer	17,502	April 1979 April 2010 April 2013 June 2014 June 2017 April 2018 April 2019	Joined Idemitsu Kosan Co.,Ltd. ("Idemitsu Kosan") Executive Officer and General Manager of Tokuyama Refinery and General Manager of Tokuyama Plant, Idemitsu Kosan Executive Officer and General Manager of Manufacturing & Technology Department, Idemitsu Kosan Director, Managing Executive Officer and General Manager of Manufacturing & Technology Department, Idemitsu Kosan Managing Director, Idemitsu Kosan Executive Vice President and Director, Idemitsu Kosan Executive Vice President and Representative Director, Idemitsu Kosan Director, and Executive Vice President and Executive Officer, Idemitsu Kosan (to date) Director, Showa Shell Sekiyu K.K. (to date)
			April 1980 March 2009 March 2013 April 2019	Joined Shell Sekiyu K.K. Executive Officer, Showa Shell Sekiyu K.K. ("Showa Shell") Corporate Executive Officer, Showa Shell Director and Senior Managing Executive Officer, Idemitsu Kosan Co.,Ltd. (to date) President & Representative Director, Showa Shell (to date)
			April 2010	Councilor, Public Interest Incorporated Foundation Idemitsu Museum of Arts Councilor, Public Interest Incorporated Foundation Idemitsu Culture and Welfare Foundation
			Dec. 2015 April 2016 April 2019	Director and Vice President, Nissho Kosan Co., Ltd. ("Nissho Kosan") Representative Director and President, Nissho Kosan (to date) Director, Idemitsu Kosan Co.,Ltd. (to date)
			Dec. 2008 April 2010	Registered as an attorney, established Kyuhodo Law Firm Committee Member, Tokyo Local Third-Party Committee to Check Pension Records, Ministry of Internal Affairs and Communications
			April 2011 Sep. 2015	Delegate, Dai-ichi Tokyo Bar Association Auditor, General Incorporated Association for Realizing Prescription of Adequate Amount of Anti-Dementia Drugs (to date)
<b>H</b> Kazunari Kubohara	Director	—	June 2016 July 2017 March 2018 April 2018 April 2019	Outside Statutory Auditor, Class Technology Co., Ltd. (to date) Auditor, Medical Corporation Hakuikai Miyake Dental Clinic (to date) Delegate, Japan Federation of Bar Associations (to date) Vice Chairperson of the Legal Services Obstruction Countermeasures Committee, Dai-ichi Tokyo Bar Association (to date) Director, Idemitsu Kosan Co.,Ltd. (to date)
			April 1984 July 2013 June 2018 April 2019	Joined Idemitsu Kosan Co.,Ltd. ("Idemitsu Kosan") Executive Officer and General Manager of Logistics Department, Idemitsu Kosan Audit & Supervisory Board Member, Idemitsu Kosan (to date) Auditor, Showa Shell Sekiyu K.K. (to date)
			April 1984 March 2016 April 2019	Joined Shell Sekiyu K.K. Audit & Supervisory Board Member, Showa Shell Sekiyu K.K. ("Showa Shell") Audit & Supervisory Board Member, Idemitsu Kosan Co.,Ltd. (to date) Auditor, Showa Shell (to date)



## Directors and Audit &amp; Supervisory Board Members (June 29, 2019)

Name	Position	Numbers of shares held	Experience	Reason for appointment	Committee		Attendance at Board of Directors Meetings in FY2018	Attendance at Audit & Supervisory Board in FY2018
					Nominating Advisory Committee	Compensation Advisory Committee		
K Takeo Kikkawa	Outside Director	—	April 1987 Assistant Professor, Aoyama Gakuin University School of Business	Mr. Takeo Kikkawa has not engaged in corporate management in any manner other than serving as an outside officer. However, management has judged that he will be able to perform his duties as an Outside Director properly as he has long experience and wide knowledge as a university professor, has full knowledge about corporate management as an expert in business administration studies and especially in energy industry theory, and satisfies the "Requirements for Independence of Outside Officers" of the Company.	Chairman		15 of 15 (100%)	—
			April 1996 Professor, Institute of Social Science, University of Tokyo					
			April 2007 Professor, Hitotsubashi University Graduate School of Commerce and Management					
			Jan. 2013 President, Business History Society of Japan					
			June 2013 Outside Director, Mitsubishi Chemical Holdings Corporation					
			April 2015 Professor, Graduate School of Innovation Studies, Tokyo University of Science (currently, Graduate School of Management, Tokyo University of Science) (to date)					
June 2017 Director, Idemitsu Kosan Co., Ltd. (to date)								
L Mackenzie Clugston	Outside Director	—	June 1982 Joined Department of Foreign Affairs and International Trade of the Canadian Government	Mr. Mackenzie Clugston has not engaged in corporate management in any manner other than serving as an outside officer. However, management has judged that he will be able to perform his duties as an Outside Director properly as he is familiar with business, administration, and international affairs as a former diplomat and a university professor, has full knowledge about corporate management, and satisfies the "Requirements for Independence of Outside Officers" of the Company.		○	15 of 15 (100%)	—
			Nov. 2012 Ambassador of Canada to Japan					
			June 2016 Outside Director, Kameda Seika Co., Ltd. (to date)					
			Sep. 2016 Advisor, Sapporo Holdings Limited Professor, Kwansai Gakuin University (to date)					
			June 2017 Director, Idemitsu Kosan Co., Ltd. (to date)					
			March 2018 Outside Director, Sapporo Holdings Limited (to date)					
June 2019 Outside Director, NGK SPARK PLUG CO., LTD. (to date)								
M Norio Otsuka	Outside Director	664	April 1973 Joined NSK Ltd. ("NSK")	Management has judged that Mr. Norio Otsuka will be able to perform his duties as an Outside Director properly as he served as President and Chief Executive Officer, and Director, Chairman of NSK, has promoted its global growth strategy, enhanced its corporate governance, and accumulated wide experience and advanced insight regarding corporate management, and satisfies the "Requirements for Independence of Outside Officers" of the Company.	○		Appointed in April 2019	—
			June 2009 President and Chief Executive Officer, Chairperson of the Nomination Committee, NSK					
			June 2015 Director, Chairman, NSK					
			June 2016 Chairman, the Japan Bearing Industry Association					
			March 2017 Outside Director, Showa Shell Sekiyu K.K.					
			June 2017 Honorary Chairman, NSK					
June 2018 Outside Director, Sojitz Corporation (to date)								
April 2019 Director, Idemitsu Kosan Co., Ltd. (to date)								
June 2019 Outside Director, Taisei Corporation (to date)								
N Yuko Yasuda	Outside Director	199	April 1985 Joined IBM Japan, Ltd.	Management has judged that Ms. Yuko Yasuda will be able to perform her duties as an Outside Director properly as she served as Representative in Japan of Russell Reynolds Association Japan, and engaged in the executive assessment of a corporation and in the training of CEO successors, has accumulated wide experience as a business manager and broad knowledge about the training of global leaders, and satisfies the "Requirements for Independence of Outside Officers" of the Company.		Chairman	Appointed in June 2019	—
			Sep. 1991 Joined Booz Allen Hamilton Inc.					
			Sep. 1993 Joined Russell Reynolds Associates Japan Inc. ("Russell Reynolds Associates Japan")					
			June 1996 Managing Director, Russell Reynolds Associates Japan (to date)					
			April 2003 Representative in Japan, Russell Reynolds Associates Japan					
			April 2013 Member of Executive Committee, Russell Reynolds Associates Inc. (resigned in March 2006)					
June 2015 Member of Executive Committee, Russell Reynolds Associates Inc. (reappointed, until March 2016)								
March 2015 Outside Director, SCSK Corporation								
June 2017 Outside Director, Showa Shell Sekiyu K.K.								
June 2018 Outside Director, Murata Manufacturing Co., Ltd. (to date)								
April 2019 Director, Idemitsu Kosan Co., Ltd. (to date)								
O Mitsunobu Koshiba	Outside Director	—	Oct. 1981 Joined Japan Synthetic Rubber Co., Ltd. (currently, JSR Corporation)	Mr. Mitsunobu Koshiba has long been engaged in research and electronic materials business at JSR, served as the General Manager of Electronic Materials Division, and has been serving as the Representative Director and President of JSR since 2009. Management has judged that Mr. Mitsunobu Koshiba will be able to perform his duties as an Outside Director properly as he has expertise in the technology area as well as long experience and wide knowledge as a business manager, and satisfies the "Requirements for Independence of Outside Officers" of the Company.			Appointed in June 2019	—
			June 2002 Officer and General Manager of Electronic Materials Department I, Electronic Materials Division, JSR Corporation ("JSR")					
			June 2003 Officer, General Manager of Electronic Materials Division, and General Manager of Electronic Materials Department, JSR					
			June 2004 Director, General Manager of Electronic Materials Division, JSR					
			June 2005 Senior Officer, General Manager of Electronic Materials Division and Assistant in charge of Fine Chemicals Business, JSR					
			June 2006 Managing Director, General Manager of Electronic Materials Division, JSR					
June 2007 Managing Director, JSR								
June 2008 Senior Managing Director, JSR								
April 2009 Representative Director and President, JSR								
June 2019 Representative Director and Chairman, JSR (to date)								
Director, Idemitsu Kosan Co., Ltd. (to date)								
P Taigi Ito	Outside Audit & Supervisory Board Member	4,656	May 1973 Registered as Certified Public Accountant (Registration No. 5095)	Mr. Taigi Ito has not engaged in corporate management in any manner other than serving as an outside officer. However, management has judged that he will be able to perform his duties as an Outside Audit & Supervisory Board Members properly as he is familiar with corporate accounting as a certified public accountant and a university professor, has full knowledge about corporate management, and satisfies the "Requirements for Independence of Outside Officers" of the Company.	○		14 of 15 (93%)	16 of 16 (100%)
			July 2004 Deputy Chairman, The Japanese Institute of Certified Public Accountants					
			Jan. 2012 Chairman of the Disciplinary Committee, The Japanese Institute of Certified Public Accountants					
			June 2012 Outside Audit & Supervisory Board Member, Idemitsu Kosan Co., Ltd. (to date)					
			June 2014 Outside Audit & Supervisory Board Member, IT Holdings Corporation (currently, TIS INC.) (to date)					
			June 2014 Outside Audit & Supervisory Board Member, Mitsubishi Chemical Holdings Corporation					
June 2015 Outside Audit & Supervisory Board Member, Mitsubishi Chemical Corporation								
June 2015 Outside Director, Mitsubishi Chemical Holdings Corporation (to date)								
Sep. 2018 Outside Director, Koa Shoji Holdings Co., Ltd (to date)								
Q Kenji Yamagishi	Outside Audit & Supervisory Board Member	—	April 1973 Registered as an attorney	Mr. Kenji Yamagishi has not engaged in corporate management in any manner other than serving as an outside officer. However, management has judged that he will be able to perform his duties as an Outside Audit & Supervisory Board Members properly as he is familiar with corporate legal affairs as an attorney, has full knowledge about corporate management, and satisfies the "Requirements for Independence of Outside Officers" of the Company.		○	Appointed in April 2019	Appointed in April 2019
			April 1997 Vice President, Tokyo Bar Association					
			April 2004 Secretary General, Japan Federation of Bar Associations					
			July 2007 Committee Member, Central Third-Party Committee to Check Pension Records, Ministry of Internal Affairs and Communications					
			March 2008 Outside Audit & Supervisory Board Member, Showa Shell Sekiyu K.K.					
			April 2009 President, Tokyo Bar Association					
May 2012 Vice President, the Japan Federation of Bar Associations								
April 2019 President, the Japan Federation of Bar Associations								
April 2019 Outside Audit & Supervisory Board Member, Idemitsu Kosan Co., Ltd. (to date)								



## Corporate Governance

### Basic Concept of Corporate Governance

The Company, a company originating in Japan which co-creates energy, will continue to strive to create new values together with its customers and stakeholders, while aiming to harmonize with the environment and society in the spirit of diversity and inclusiveness.

With this aim in mind, the Company recognizes the importance of constructing positive relationships with all stakeholders, including customers, shareholders, business partners, local communities and employees, by fulfilling its social responsibility as a good corporate citizen, improving management transparency and promoting sound and sustainable growth.

Japan's Corporate Governance Code is aimed at achieving sustainable corporate growth and increasing medium to long-term corporate value through Dialogue with Shareholders. The Company which strives to become a socially respected and highly trusted company believes that it must comply with the code in principle.

The Company attaches great importance to be self-governing, thinking by ourselves and judge ourselves in accordance with the Company's vision. In addition, the Company openly discusses its business status and management circumstances with Independent Outside Directors and Independent Outside Audit & Supervisory Board Member with a wide range of knowledge and backgrounds and sincerely absorbs their unrestricted views, thereby endeavoring to continue operating in a transparent and fair manner.

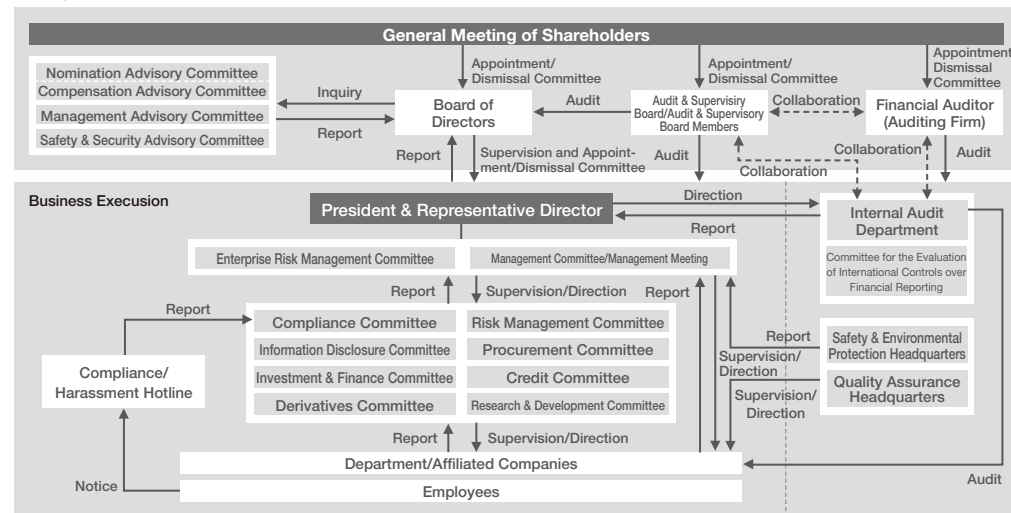
### Outline of Corporate Governance System

While the Board of Directors of the Company shall make important business decisions and supervise the execution of business, the Company, as a company with Audit & Supervisory Board, shall ensure that Audit & Supervisory Board Members and the Audit & Supervisory Board that are independent of the Board of Directors shall audit the execution of duties by officers and employees.

The Board of Directors shall, in accordance with laws, regulations, the Articles of Incorporation, and other rules set down by the Company, make decisions on business strategy, business planning and other key business matters for the Company and supervise the execution of business.

In order to increase the objectivity of the Board of Directors, the Company has made it possible to separate the roles of the chairperson and the CEO by revising a clause in the Articles of Incorporation stipulating that the CEO will serve as the chairperson of the Board of Directors to read that the chairperson will be determined by the Board of Directors.

#### ■ Corporate Governance Structure



With regard to matters other than those mentioned above, the Company shall delegate authority for business execution to the Representative Director and CEO, Management Meeting, Directors who also serve as Executive Officers, Executive Officers and General Managers, with a view to facilitating decision making on the execution of business. The Management Meeting, which has the Representative Director and some Executive Officers as its members, decides on business execution based on the Authority Rules.

### Each Committee

#### Management Advisory Committee and Safety and Security Advisory Committee

To maintain management transparency and soundness, our company has established two committees as advisory bodies to the Board of Directors, the "Management Advisory Committee" and the "Safety and Security Advisory Committee." Both committees receive frank opinions on our company from a third-party perspective and reflect them in management improvements.

The "Management Advisory Committee" is positioned as a body that advises on issues related to overall management reform. In principle, it meets once every six months and receives recommendations from 2 outside advisors.

The "Safety and Security Advisory Committee" has consulted on security issues, particularly technical issues, to prevent large-scale disasters at refineries and plants. Recent changes in the business environment have increased the importance of ensuring safety in business deployment, new businesses, and overseas expansion. Therefore, we have set up a working group within the Safety & Environmental Protection Headquarters to select themes appropriate to the business development and receive recommendations from outside experts each time.

#### Nominating Advisory Committee and Compensation Advisory Committee

To enhance the transparency and objectivity of its nomination and compensation functions, as advisory bodies to the Board of Directors, our company has established the "Nominating Advisory Committee" and "Compensation Advisory Committee" which are comprised of Independent Outside Directors and independent outside auditors, and chaired by Independent Outside Directors.

The "Nominating Advisory Committee" reports on the president's proposal submitted to a general meeting of shareholders, for the election of candidates for Directors and Audit & Supervisory Board Members, as well as the election of the President and Representative Director and Executive Officers. "Compensation Advisory Committee" also reports on matters related to the remuneration of Directors and Executive Officers.

#### Management Committee, Enterprise Risk Management Committee, and Other Committees

In addition to examining management issues such as the Group's strategy and governance, the "Management Committee" has been established to deliberate on important business execution issues. In addition, the "Enterprise Risk Management Committee" has been established as an organization to discuss and decide matters related to the Group's risk management and to monitor them as necessary.

At the bottom of the "Management Committee" are 5 specialized committees to discuss specialized risks in business execution: "Investment and Finance Committee," "Derivatives Committee," "Procurement Committee," "Credit Committee," and "Research & Development Committee." In addition, we have established the "Risk Management Committee" and the "Compliance Committee" under the "Enterprise Risk Management Committee" in order to strengthen our response to business risk cases and develop a framework for reviewing and drafting risk management policies. In addition, we have established the "Committee for the Evaluation of International Controls over Financial Reporting" to strengthen J-SOX compliance and the "Information Disclosure Committee" to provide timely and appropriate information disclosure based on the Group's information disclosure policy.

For an overview of each committee, please refer to page 53 of the Idemitsu Sustainability Report 2019.



## Corporate Governance

Committee Name	Chair	Members	Meeting frequency	Roles
Management Committee	President	Committee members appointed by chair	In principle, three times a month	To discuss and consider management strategies and issues for the entire group and for each division. To deliberate the execution of business.
Enterprise Risk Management Committee	President	Committee members appointed by chair	In principle, twice a year	To decide on and monitor risk management policies for group management
Investment and Finance Committee	Director in charge (determined by management meeting)	General managers of relevant departments	As needed	To deliberate and report on investment-related matters and to establish investment standards
Derivatives Committee	Director in charge (determined by management meeting)	General managers of relevant departments	In principle, once a month	To perform derivative audits and to confirm and report on the status of risk management for the entire group
Procurement Committee	Director in charge (determined by management meeting)	General managers of relevant departments	In principle, once a month	To deliberate on and consider matters regarding the placement of orders for services, raw materials, and other items
Credit Committee	Director in charge (determined by management meeting)	General managers of relevant departments	In principle, once a month	To formulate basic policies related to debt management and measures for collecting non-performing loans or bad debts
Research & Development Committee	Director in charge (determined by management meeting)	General managers of relevant departments	In principle, four times a year	To consider matters related to the direction, strategies, and issues pertaining to Company-wide research and development
Risk Management Committee	Director in charge (determined by management meeting)	General managers of relevant departments	In principle, four times a year	To deliberate and prepare important policies to promote business risk management
Compliance Committee	Director in charge (determined by management meeting)	General managers of relevant departments	In principle, twice a year	To make appropriate response to compliance concerns and to promote compliance activities
Committee for the Evaluation of Internal Controls over Financial Reporting	Director in charge of accounting	Relevant directors or executive officers	In principle, twice a year	To assess and consider matters related to internal controls regarding financial reporting
Information Disclosure Committee	Director in charge of accounting	Relevant directors, executive officers, and general managers	As needed	To decide on disclosure of information

## Changes in Corporate Governance Structure

There are 13 Directors, 5 of whom are Independent Outside Directors with diverse backgrounds, including women and non-Japanese nationals. The term of Directors shall continue until the conclusion of the annual shareholders meeting for the last business year which ends within one year from the time of their election pursuant to the provisions of the Articles of Incorporation.

In FY2018, the Board of Directors met 15 times.

There are four Audit & Supervisory Board Members, two of whom are Independent Outside Audit & Supervisory Board Members, and we have established a system that allows them to fully perform management oversight functions from outside. The Audit & Supervisory Board works to improve the level of auditing by sharing issues and information among Audit & Supervisory Board Members and, when necessary, requesting information from the Directors and departments. In FY2018, the Audit & Supervisory Board met 16 times.

Fiscal Year	Form of Organization	Number of Directors	of Which, Number of Independent Outside Directors	Number of Audit & Supervisory Board Members	of Which, Number of Independent Outside Audit & Supervisory Board
FY2015	Company with Audit & Supervisory Board	10 people	2 (One woman)	5 people	3 people
FY2016	Company with Audit & Supervisory Board	10 people	2 (One woman)	5 people	3 people
FY2017	Company with Audit & Supervisory Board	12 people	4 (One woman and one foreigner)	4 people	2 people
FY2018	Company with Audit & Supervisory Board	11 people	4 (One woman and one foreigner)	4 people	2 people
FY2019	Company with Audit & Supervisory Board	13 people	5 (One woman and one foreigner)	4 people	2 people

## Policy for Nominating Candidates for Directors and Audit & Supervisory Board Members by Board of Directors

### Nomination of Candidates for Directors

Our company has adopted human resource standards for Directors that take into account the composition of the Board of Directors.

Our company believes that it is important for the Board of Directors to have a certain number of people who are familiar with our company's business and its issues as a member of the Board of Directors, to ensure the independence and objectivity of the Board of Directors, and to ensure diversity in the knowledge, experience, and capabilities of the Directors, in order for the Board to fulfill its roles and responsibilities and to strategically direct our group, and has prepared a Skill Matrix as one of the criteria for selection.

Based on this, the Board of Directors receives recommendations from the Nominating Advisory Committee and appoints a certain number of candidates who are familiar with our company's business and its issues, and who are capable of carrying out our company's management appropriately, fairly and efficiently.

In the election of Director candidates, after discussions among representative directors, the CEO shall submit a draft to the Nomination Advisory Committee on full assessment of the abilities, knowledge and performance of individual candidates, regardless of whether they are from inside or outside of the Company. The Board of Directors shall make a decision based on a report submitted by the Nomination Advisory Committee.

The Nomination Advisory Committee, when it deems it necessary, deliberates on the dismissal of directors and reports the results to the Board of Directors.

### Nomination of Candidates for Audit & Supervisory Board Members

Our company determines the standards for the personnel of Audit & Supervisory Board Members based on the structure of the Audit & Supervisory Board, after obtaining the prior consent of the Audit & Supervisory Board.

Candidates for Audit & Supervisory Board Members are selected based on the prior consent of the Audit & Supervisory Board, provided that they have appropriate experience and abilities as well as the necessary knowledge of finance, accounting or legal affairs. Candidates for internal Audit & Supervisory Board Members are selected based on their full knowledge of our company's business and its issues, and are able to conduct audits and supervision of our company appropriately, fairly and efficiently.

In the selection of candidates for Audit & Supervisory Board Members, the President and Representative Director discusses this with all representative directors and, based on the recommendations of the Nominating Advisory Committee, submits to the Board of Directors a draft which sufficiently evaluates the abilities, knowledge and performance of each candidate, as for both inside and outside the company, with the consent of the Audit & Supervisory Board.

### Independence Requirements for Outside Officers

In order for the Board of Directors to fulfill its supervisory functions, our company's basic policy is to appoint more than 1/3 of its Directors and half of its Audit & Supervisory Board Members as Independent Outside Directors and auditors, respectively, who have the knowledge and experience to provide useful advice for the management of our company, from among persons who satisfy the "Independence Requirements for Outside Officers" by taking into consideration a variety of knowledge and backgrounds.

1. A person who has become an executive officer of the Company or its subsidiaries in the present or in the past.
2. A person who is a major shareholder or currently affiliated with an organization that is a major shareholder with a 10% or higher share ratio in the Company's latest shareholder list.
3. A person who is currently affiliated with the Company's business partners or their consolidated subsidiaries with a total annual transaction amount of 2% or more of consolidated net sales in the three most recent business years.



## Corporate Governance

4. A person who is a consultant, accounting professional, legal expert, accounting auditor, or contractor (if they are corporations, associations, or other organizations, those who actually belong to those organizations) who receives money or other properties of ¥10 million or more per annum from the Company other than remuneration for a Director or 4 Audit & Supervisory Board Member in the three most recent fiscal years.
5. A person who is currently affiliated with non-profit organizations that have received 2% or more of their gross or ordinary income from the Company in the three most recent fiscal years.
6. In the case where a person has belonged to any of the organizations or business partners described in "2." to "5." above, five years have not elapsed since (s)he left the organization or business partner.
7. A person who is the spouse or relative within the third degree of kinship of an officer (excluding those that are not important) of the Company or a specified associated company of the Company.

## Training

Our company provides training to its Directors and Audit & Supervisory Board Members on the roles, responsibilities, and compliance that are expected of them when they become Directors or Audit & Supervisory Board Members of listed companies.

In addition, we explain our company's business, finance, and organization to newly appointed Independent Outside Directors and auditors of our company, so that they can fulfill their roles and responsibilities.

In addition, our company encourages Directors and Audit & Supervisory Board Members to improve their skills and provides them with training opportunities tailored to their needs, while at the same time providing a broad range of support for necessary expenses.

## Assessment of the Effectiveness of the Board of Directors

At least once a year, all the directors and Audit & Supervisory Board Members assess the effectiveness of the Board of Directors, and the Company disclose an overview of the results. The first effectiveness evaluation of the integrated new company, which was established in April 2019, will be conducted in the second half of FY2019.

## Compensation for Executives

### Basic Policy on Executive Compensation

Our company's basic policies regarding remuneration for its Directors and Executive Officers (Directors, etc.) are twofold: 1) to increase corporate performance and corporate value over the medium to long term to realize its management vision; 2) to establish a remuneration system and decision-making process that is transparent, rational and fair so that the company can fulfill its accountability to customers, society, the environment, shareholders, business partners, employees, and other stakeholders. Based on this policy, our company's executive compensation system is as follows.

### Compensation Standard

Compensation levels for Directors and others shall be reviewed as appropriate in light of changes in the business environment and external survey data.

### Compensation Structure

Our company and Showa Shell Sekiyu K.K. merged on April 1, 2019. Starting in FY2019, the compensation structures for the Directors (excluding Outside Directors) and Executive Officers will be based on new arrangements, with the emphasis being placed on contributing to the maximization of synergy creation, business portfolio rearrangement, and enhancement of initiatives for the environment, society and governance, which in turn will lead to further improvement of corporate value, and will consist of (1) fixed compensation, (2) performance-based bonuses (shift from performance-linked

monetary compensation (periodic equal pay) to performance-based bonuses for the purpose of clarifying the incentive structure), and (3) performance-linked stock compensation.

The ratios of fixed compensation, performance-based bonuses, and performance-linked stock compensation at the time of standard payment are set at approximately 70%, 15%, and 15%. Compensation for Outside Directors consists solely of fixed compensation from the perspective of objectively assessing the appropriateness of business execution and ensuring appropriate supervisory functions.

### 1. Fixed compensation

Fixed compensation shall be paid on a monthly basis in an amount determined according to the role.

### 2. Performance-based bonus

Performance-based bonuses are designed to fluctuate within a range of 0 - 200% according to achievement levels (such as roles and company performance (hereinafter "net income") and consolidated operating income attributable to shareholders of the parent company).

### 3. Performance-linked stock compensation

From the perspective of sharing value with shareholders, performance-linked stock compensation is designed to fluctuate within the range of 0 - 200% in accordance with the achievement of corporate performance (net income and consolidated operating income) for all executives. This is a medium- to long-term incentive in which the value of assets fluctuates due to stock price fluctuations during the term of office as stock is given to Directors, etc., after their resignation.

Our company uses net income and consolidated operating income as indicators to share value with shareholders and investors, and believes that they are appropriate indicators to strengthen profitability and increase our corporate value.

The weight of each indicator is determined in accordance with the duties of each director.

## The Date of Resolution at the Shareholders General Meeting Concerning remuneration, etc. for Executives and the Details of Such Resolution

At the 91th Ordinary General Meeting of Shareholders held on June 27, 2006, the amount of compensation for Directors and Audit & Supervisory Board Members was set at 1.2 billion yen or less per year for Directors and 120 million yen or less per year for Audit & Supervisory Board Members. At the time of the resolution, there were 12 Directors and 5 Audit & Supervisory Board Members.

At the 104th Ordinary General Meeting of Shareholders held on June 27, 2019, it was resolved that in addition to the above compensation limits, our company would contribute up to 1.9 billion yen (provided, however, that in the case of a trust that has already commenced in FY2018, the total amount of 2.3 billion yen shall be calculated for the four business years from FY2018 to FY2021.) in total to a trust that would be covered by the performance-linked stock compensation system for Directors and others during the 3 consecutive fiscal years. At the time of resolution, the number of Directors (excluding Outside Directors) covered by this system is 6 and the number of Executive Officers who do not concurrently serve as Directors is 31.

Individual compensation for Directors is determined by the Board of Directors based on the recommendations of the Nomination and Compensation Advisory Committee, which is composed of Independent Outside Directors and Independent Outside Audit & Supervisory Board Members. Individual compensation for Audit & Supervisory Board Members is determined through discussions between Audit & Supervisory Board Members. The Nomination and Compensation Advisory Committee met a total of 11 times in FY2018, including deliberation on executive compensation.



## Corporate Governance

### Total Amount of Compensation, etc. by Executive Category

In FY2018, Directors' and Audit & Supervisory Board Members' salaries totaled 1.19 billion yen and 100 million yen, respectively.

Category	People (number)	Fixed Compensation (1 million yen)	Performance-linked compensation (1 million yen)		Other Compensation (Response to the transition to the new company system) (1 million yen)	Total compensation (1 million yen)
			Cash Compensation (periodic equal pay)	Stock compensation		
Directors (excluding Outside Directors)	7	393	136	132	472	1,135
Audit & Supervisory Board Members (excluding Independent Outside Audit & Supervisory Board Members)	3	59	4	—	12	77
Outside Directors and Independent Outside Audit & Supervisory Board Members	6	69	—	—	9	78
<b>Total</b>	<b>16</b>	<b>522</b>	<b>141</b>	<b>132</b>	<b>494</b>	<b>1,290</b>

\* Our company's current executive compensation plan consists of fixed compensation as well as performance-linked cash compensation (periodic equal payment) and performance-linked stock compensation. In FY2019, to clarify the composition of incentives, we shifted from performance-linked cash compensation (periodic equal payment) to bonus payments. "Other Compensation" refers to the extraordinary payment of the portion corresponding to the transition to bonus payments and the adjustment of executive compensation accompanying the management integration.

### Management Monitoring System

Our company's internal control system is based on the supervision by the Board of Directors, audits by Outside Directors and Independent Outside Audit & Supervisory Board Members, and accounting audits, as well as the effective functioning of the 3 defense lines under the direction of execution (under President and Representative Director). (1) Each department controls risks by incorporating self-management into daily operations, and ensures the legality of operations. (2) The management division supports the division in each specialized field and monitors the status of self-management. (3) We have established an "Internal Audit Department" under the direct control of the President and Representative Director, and its staff implement "Internal Audits" and "Assessment of Internal Control over Financial Reporting (J-SOX)" from an independent and objective standpoint. The Internal Audit Department conducts internal audits of domestic and overseas offices and affiliated companies. In this way, the effectiveness of internal controls in each division is evaluated, and the results are reported to the President and Representative Director, Audit & Supervisory Board Members, division heads, and relevant executives. The departments that receive advice and proposals for improvement systematically make improvements, and the Internal Audit Department conducts follow-up audits as necessary.

### Audits by Audit & Supervisory Board Members

Audit & Supervisory Board Members (4 people) attend meetings of the Board of Directors and audit business reports, financial statements, and consolidated financial statements that are submitted to the annual general meeting of shareholders. They also audit the execution of business operations by Directors on a daily basis. Full-time Audit & Supervisory Board Members attend important internal meetings, such as those of the Management Committee, and meet with department heads, overseas store managers, and the presidents of subsidiaries. Part-time Audit & Supervisory Board Members strive to enhance auditing by visiting key departments. As a general rule, we hold quarterly meetings with the representative director to discuss issues.

## Strategically-held Listed Shares

### Policy on strategic holdings of listed shares

The Company strategically holds listed shares which are found to be necessary to maintain and expand relationships with business partners over the medium to long term. And yet, the Company shall validate the appropriateness of such holdings annually in the following way, and has been reducing those share holdings.

More specifically, the Company shall scrutinize those share holdings in terms of both quantitative evaluation, which analyzes whether the benefits and risks of holding such shares are commensurate with the relevant cost of capital, and qualitative evaluation, which analyzes the degree of contribution to improving business stability, etc., and the appropriateness of selling shares shall be decided after the deliberation of the Board of Directors.

As for shares which are decided to be sold, the Company shall have sufficient dialogues with the relevant business partners to get their understanding, and then proceeds with the stock sales while considering the impact on share prices. In FY2018, we sold a total of six stocks worth 887 million yen.

### Standards for exercising voting rights of strategically-held listed shares

The Company shall exercise voting rights of strategically-held listed shares only when it finds that such exercise will improve on a sustainable basis the corporate values of both the Company and the company whose shares it strategically holds.

The Company shall examine whether or not the exercise of voting rights improves on a sustainable basis the corporate value of the company whose shares it strategically holds, based on management strategies, business results, etc. of the said company. Depending on the agenda, the Company shall ask the said company for an explanation before exercising voting rights.

In cases where the agenda of the company whose shares the Company strategically holds may be in conflict with the interests of the Company and if the need arises, the Company shall exercise voting rights based on Independent Outside Directors' and outside experts' opinions.



## Compliance

### Concept of to Compliance

The "Compliance Code of Conduct" was established for all employees working around the world, both overseas and in Japan, to disseminate the compliance mindset that each employee should have and to practice actions based on this. We will act with a compliance-first attitude based on the common concept of "Compliance Code of Conduct."

### Compliance Code of Conduct

In accordance with the "high integrity" set forth in the Action Mindset, we have established the following items as specific compliance codes of conduct.

#### 1. Compliance with Laws, Regulations, and Morals

We will comply with domestic and international laws and regulations, social ethics, internal regulations, and contracts, and act with integrity as good corporate citizens.

#### 2. Respect for Human Rights

We will not tolerate any infringement of human rights.

We accept diversity in all forms (e.g. race, nationality, gender, etc.), and strive to create healthy and comfortable workplaces free of harassment.

#### 3. Safety, Quality, and Environmental Preservation

We will ensure the appropriate quality of our products and services; We will do our utmost to prevent accidents and minimize losses due to disasters, and will act with due consideration to the preservation of the global environment.

#### 4. Fair and Free Competition

We will conduct business transactions based on fair and free competition.

#### 5. Anti-Corruption

We will maintain sound and transparent relationships with civil servants, government authorities, etc., both in Japan and abroad when conducting our business activities.

#### 6. Information Disclosure and Information Management

We will manage information held by the Company appropriately with transparency and soundness of management. We will disclose information appropriately to the general public when necessary.

## Compliance Promotion Structure

### Compliance Committee

Our group has established the "Compliance Committee" under the Enterprise Risk Management Committee, and is working to ensure thorough compliance by responding to cases of compliance concern, implementing compliance promotion activity plans, and monitoring the status of compliance activities. Chaired by an Executive Officer in charge of internal control appointed by the Management Meeting, the committee consists of each head of General Affairs Department, Legal Department, Human Resources Department 1, Human Resources Department 2, Internal Audit Department, and Internal Control Promotion Department. The committee meets once every six months.

### Assignment of Compliance Promotion Officers in Departments and Subsidiaries

The heads of our group's divisions and the presidents of its subsidiaries appoint officers in charge of compliance promotion and are responsible for promoting compliance at each division.

## Establishment of Consultation Center

### Domestic Consultation Center

We have established the "Compliance Consultation Center (cp-sodan)" (Reception of Internal Control Promotion Department) to receive compliance-related consultations and internal reports. We have also established "Harassment Consultation Center" (Reception of Human Resources Department) as contact points for all forms of harassment, including sexual and power harassment. The consultation center have been set up on the company-wide internal information portal and are also displayed on posters so that anyone can recognize its existence.

- The counters are for employees (including part-time employees, temporary employees, employees on loan, and contract employees) of our company, our company subsidiaries and others.
- Each of these consultation center has an "External third party contact" (reception of a lawyer's office). In order to ensure anonymity, a lawyer in charge acts as a liaison with the in-house consultant staff. In addition to ensuring the confidentiality of the content of consultations, we have also established a ban on disadvantageous treatment of those who report or consult with us.

### Consultation center for cases of compliance and harassment concerns

	Compliance Contacts (fraud, misconduct, and other compliance issues)
Internal Contacts (real name consultation in principle)	Harassment Contacts (sexual harassment, power harassment, and other forms of harassment)
External Contacts (anonymous consultation available)	Common External Contact for Compliance and Harassment Consultation

### Overseas Consultation Hotline

In order to respond to reports from overseas offices, we established the "Idemitsu Global Hotline (IGHL)" in FY2018 and operating. (Applicable to all languages of local subsidiaries)

Number of consultations received in FY2018 *1		(Unit: cases)
Idemitsu Group	Number of Compliance Consultation received	11
	Number of Harassment Consultation received	5
Showa Shell Sekiyu K.K.	Number of VOP *2 received	22
	Number of Harassment Consultation received	1

\*1 Both companies disclose their results in accordance with their respective regulations.

\*2 VOP (Voice of People): Showa Shell Sekiyu Group's employee consultation center



Poster of consultation center





## Compliance

### Compliance Promotion Activities

#### Raising Employee Awareness

- Compliance Room

In July 2019, we established the "Compliance Room" on our internal information portal to raise compliance awareness. We post violation cases, four-frame comics, and blogs, and update the latest internal and external cases and disseminate them throughout the Group.

- Compliance Web Learning

In November 2019, the "Compliance Web Learning" was held for our group employees to help them acquire knowledge about compliance and to identify problems in the workplace. More than 10,000 employees in the Group took the course.

- Compliance Book

In accordance with the "Compliance Code of Conduct" newly established in November 2019, we published the latest version of our Compliance Book at the end of January 2020, which describes specific compliance standards.

#### Bribery and Corruption Prevention

Our group's Compliance Code of Conduct stipulates that all forms of corruption must be prevented in Japan and overseas. Furthermore, we have established basic rules and systems to be observed in the prevention of bribery, and in FY2019 we established the "Rules for the Prevention of Bribery" with the aim of preventing violations of laws and regulations in each country that prohibit bribery, such as the OECD convention and the FCPA (Foreign Corrupt Practices Act). We regard anticorruption as a particularly important issue for compliance at overseas sites, and are raising awareness of the importance of specific preventive measures.

#### Tax Compliance Initiatives

Our group fulfills its corporate social responsibility by paying taxes in a proper manner and complying with all applicable tax laws of each country and international rules, as stipulated in the "Group Tax Regulations" "Group Tax Practices Guide."

#### Major Compliance Violations in FY2018

(Unit: cases)

Significant compliance violations at Idemitsu Group*	0
Significant compliance violations at the Showa Shell Sekiyu Group*	0

\* Violations disclosed as having a serious impact on our group's management

## Risk Management

### Policy of Risk Management

Our group strives to stabilize its management by proactively recognizing and evaluating various risks associated with its business activities and taking appropriate measures in accordance with those risks.

### Risk Management Promotion Structure

At our group, we classify risks associated with our business activities into two categories: "Operational Risk" and "Business Strategy Risk" and promote countermeasures against them. "Operational Risk" is a risk of impeding business execution and causing only losses, as typified by accidents, disasters, non-compliance, business errors, product defects, claims, environmental pollution, system failures, terrorism, and labor problems. The term "Business Strategy Risk" refers to risks associated with business activities that exclude business risk and cause profit or loss. In addition to risks associated with current business strategies such as investments and finance, this category includes risks associated with the future business environment. The Risk Management Committee is responsible for responding to "Operational Risk." The Enterprise Risk Management Committee is responsible not only for "Operational Risk" but for "Business Strategy Risk."

#### Managing Operational Risk

Our group has established the "Risk Management Committee" and is promoting company-wide risk management related to operational risks by taking necessary measures in a timely and prompt manner. Chaired by a Director or Executive Officer appointed by the Management Committee, the committee selects major risks common to the Group, discusses countermeasures, and manages the progress of these risks at quarterly meetings.

#### Group's Risk Management

The "Enterprise Risk Management Committee" supervised by the Board of Directors determines risk management policies related to Group management and monitors the status of management. Please refer to page 52 for details on the Enterprise Risk Management Committee.

### Initiatives for Risk Management

#### Further Reinforcing Crisis Management

The Idemitsu Group has formulated Crisis Response Rules as the topmost of its regulations concerning crisis readiness, stipulating response policy and crisis-level definitions, the system for emergency communication and cooperation, and methods for establishing emergency task forces.

Based on the Rules, from the initial stage of risk, the Group's risk-related information is swiftly shared with the department in charge of the business site where the risk has occurred and the General Affairs Department risk management section, as well as with the Risk Management Committee members as appropriate. According to the level of crisis, relevant departments, including the Corporate Departments, support the business site facing the risk or take the initiative in responding to the risk to minimize any potential social impact or damage.

In FY2006, we formulated a Business Continuity Plan (BCP) for the eventuality of an earthquake with an epicenter in the Tokyo metropolitan area, in FY2009, formulated a BCP for the eventuality of an outbreak of avian influenza, and in FY2012, formulated a BCP for the a Nankai megathrust earthquake. In FY2015, as Idemitsu was appointed as a designated public institution by the Cabinet Office, we announced the Disaster Prevention Action Plan. We have held annual comprehensive disaster drills based on those BCPs and confirm problems in actual action to take and coordination with each business base to strengthen our practical response capabilities and to reflect revisions to the BCP. At our refineries, complexes, plants, and other business sites, we implement periodic disaster prevention drills in the whole site based on applicable crisis response regulations.



## Risk Management

### ■ Comprehensive disaster drill



#### TOPICS Acquiring Highest BCM Rating from the Development Bank of Japan

Idemitsu became the first oil refiner and primary oil distributor to receive the highest "Rank A" from the Development Bank of Japan (DBJ) in the DBJ BCM Rated Loan Program.

The DBJ BCM Rated Loan Program is the world's first loan menu to incorporate the BCM (Business Continuity Management) ratings. Using a proprietary screening system, DBJ assesses a company's disaster measures and business continuity plans and offers loan conditions based on the assessment results. The rating is classified into three grades from the highest "Rank A" to "Rank C."

We received Rank A: company with excellent advanced initiatives to disaster measures and BCP as the following three aspects were highly evaluated:

1. Under the commitment of the top management, we have established a risk management system that covers all-risk hazards, including geopolitics and cyber risks. Employees work together with management to strengthen its resilience to risks, including risk control through prior investment, and preparation of various risk financing methods based on the analysis of financial impact at the time of risk occurrence.
2. Considering it as a social mission to continue supply of oil for people's life, we have thoroughly implemented advanced quake-resistance measures in the industry by introducing an overseas risk engineer survey to ensure safety, disaster prevention inspection and preventive measures in the global standards. In addition, we have established a system to continue oil supply across Japan based on the "Plan for Joint-Operations of Oil Supply in Disasters," which is industrial cooperative framework for emergency supply.
3. We work to constantly improve the business continuity plans through implementing various BC drills involving outside stakeholders, including Self-Defense Forces. We also improve the effectiveness of emergency response, including the enhancement a human resource development system to support sophisticated risk management.



Cooperative Joint drill for fuel supply in a disaster by the JGSDF Northern Army and the Hokkaido Bureau of Economy, Trade and Industry (February 2018)

We continue to review its BC plans through active use of external evaluations and implementation of practical drills aimed at strengthening response capabilities.

### ● Information Management System

In line with the Information Security Basic Policies, the Idemitsu Group is endeavoring to ensure the secrecy of its information assets and secure the availability and security of information systems and networks. Utilizing information technologies, Idemitsu thus striving to maintain and enhance the level of customer services. In addition, Idemitsu has established the Customer Information Management Standards to appropriately collect and use customer information, and store it safely and at the latest status. The standards also mandate the proper disposal of such information.

We also implement periodic staff education on Security standards for the Use of IT Systems for all employees as part of our thoroughgoing information management measures. At the same time, autonomous inspection of information management is implemented by each division while data security audits are implemented through periodic business operation audits by the Internal Audit Office. When information leakage occurs, the incident is handled in accordance with the Guidelines on How to Deal with a Crisis, and the Information Control Guidelines.

#### Information Security Basic Policies

1. The Idemitsu Group shall endeavor to ensure the secrecy of its information assets, secure the availability and security of its information systems and networks, and enhance the level of customer services by employing information technologies.
2. The Idemitsu Group shall put in place appropriate protective measures to prevent the leakage, falsification or destruction of customer information.
3. The Idemitsu Group shall strive to secure the availability and security of its information systems and networks and protect their secrecy, in an effort to prevent information-related incidents that may cause troubles to customers, business partners and other stakeholders.
4. The Idemitsu Group shall ensure that all employees, temporally staff and vendors are aware of the importance of information security and properly educated about the use of information and information systems by providing them with training and otherwise raising their awareness.
5. The Idemitsu Group shall conduct periodic audits aimed at inspecting and evaluating the status of security policy compliance, thereby ensuring robust information security.

#### FY2018 Results

		(Unit: %)
Idemitsu Group	e-learning enrollment rate	100
Showa Shell Group	IT security web learning enrollment rate	100



## Intellectual Property

### Utilization of intellectual property

Our group has established the Intellectual Property Department to supervise intellectual property. The Intellectual Property Department supports our group's business development and activities to increase the brand value of its products by collaborating with its business divisions and R&D divisions to apply for, secure, maintain and utilize intellectual property rights, such as patents and trademarks.

### Initiatives to Utilize Intellectual Property

#### Promotion of intellectual property activity plans

Our company uses the PDCA cycle to formulate IP Activity Plans based on the "Intellectual Property Strategy Council" headed by the general managers of each division. The divisions, research laboratories, and the Intellectual Property Department work together to promote to solve priority issues. We have also introduced the "Unit Structure" which efficiently solves problems in a wide range of business fields, from fuel oil to high-functionality materials, in accordance with the characteristics and strategies of each business. By doing so, each unit can smoothly carry out intellectual property activities such as research and analysis of patent information, patent application entitlements, public relations, planning, and management.

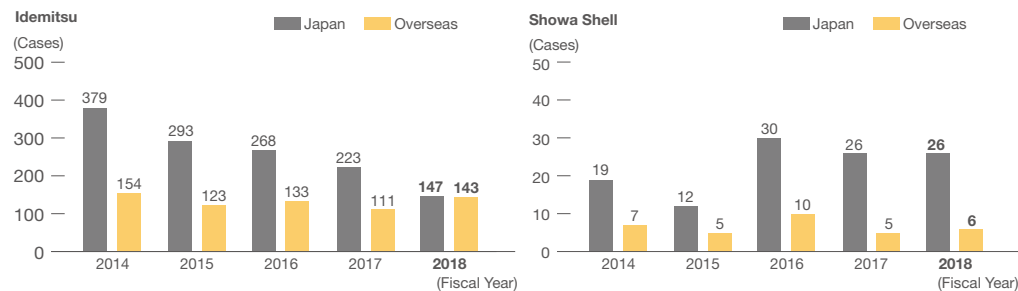
In the fuel oil field, we have entered into a cross-licensing agreement and are working to strengthen our competitiveness by reducing costs by making available patents from both parties. In the lubricating oil field, we have a large share of the global market for refrigerating machine oil, which is one of our strengths, and we have established a global patent network.

Because market growth is expected in the organic EL business, the core field of the electronic materials business, we have entered into alliance agreements with companies in Japan and overseas that hold useful patents related to organic EL materials, enabling the mutual use of patents in specific fields. Through these and other measures, we are working to create and expand businesses while expanding the areas in which development is possible.

#### Exercising Intellectual Property Rights

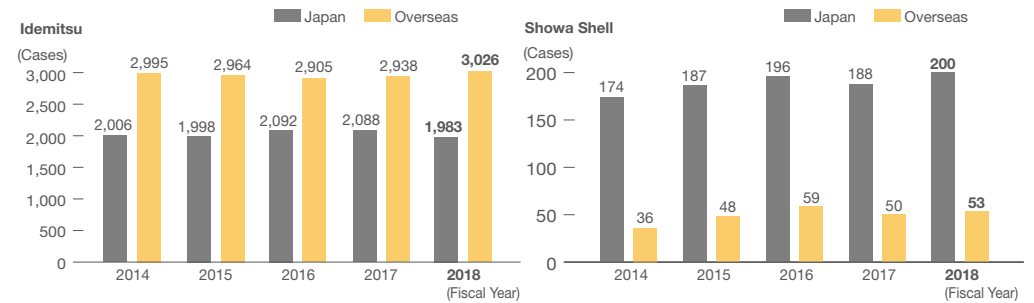
Intellectual property rights are being exercised with increasing frequency in response to the diversification of business activities, from licensing to the pursuit of alliances and mergers and acquisitions. Idemitsu established a specialized negotiations team within the Intellectual Property Department to support its various business segments by handling the negotiation and signing of technology contracts with partners as well as performing due diligence.

#### Trends in the number of patent publication



\* The number of patent publication is counted based on the international publication date.

#### Trends in the number of registered patent held



#### Working with Patent Firms and Government Agencies

Through cooperative efforts with patent firms in Japan and major overseas countries, we are focusing our energy on securing the intellectual property rights necessary for business development. We are strengthening cooperation with overseas patent firms through direct communication with patent attorneys and the dispatch of trainees. We are working to secure patent rights everywhere we do business through direct interviews, negotiations, and technology presentations with each country's examiners. In addition, with the support of the Japan External Trade Organization (JETRO), we address pressing issues besetting emerging nations, such as counterfeit products, while lobbying governmental organizations. In these ways, we remain apprised of the patent-related problems and implement robust countermeasures.

#### Responding to the Patent Laws of Each Country

Patent laws are set independently by each country, and the application for as well as the receipt and maintenance of patents requires adherence to said laws. With a rising number of corporations pursuing global expansion, there has recently been a global trend toward patent law revision aimed at facilitating swift patent acquisition and the international harmonization, including by ironing out differences between laws, rules, and examination processes. Because of this, in the countries in which they operate or their products are sold, businesses have to pay close attention to every law revision and new piece of legislation. In line with the globalization of business, the Intellectual Property Department stays informed of changes in relevant laws and examination processes used by individual countries and regions, from the United States to Europe, China, South Korea, Taiwan and others, and takes these changes into account during daily intellectual property activities.

#### Providing Staff Education

Idemitsu is striving to help its employees to be mindful of Intellectual property by, for example, providing staff education.

\* This means we strive to ensure employees' awareness of fair competition and respect for the intellectual property rights of other companies while promoting business development by leveraging competitive advantages afforded by acquiring and exercising our own intellectual property rights.

#### Data Analysis

To beat global competition, it is imperative that the Idemitsu Group understands the strengths and weaknesses of its intellectual properties within the industry while comparing and analyzing the competitiveness of rival companies. Because it is important to examine and analyze large numbers of patent abstracts around the world to create our own strategies leveraging our strengths, we have established a specialized patent information group.



## Intellectual Property

### External Recognitions

#### ● Award from the Commissioner of Japan Patent Office under the Intellectual Property Achievement Awards Program (April 11, 2018)

Idemitsu was chosen to receive an Award from the Commissioner of the Japan Patent Office, as one of recipients of Awards for Excellent Corporation Utilizing the Intellectual Property Rights System under the FY2018 Intellectual Property Achievement Awards program.

The Intellectual Property Achievement Awards program, sponsored jointly by the Ministry of Economy, Trade and Industry and the Japan patent Office, is intended to commend individuals and corporations that contributed to the development of the country's intellectual property right system.

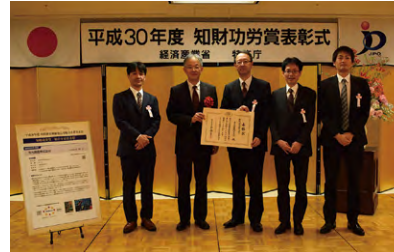
Idemitsu was highly commended for its track record in promoting its plans associated with intellectual property rights.

#### ● 2018 Japan Institute of Invention and Innovation's Excellent Invention Award (May 17, 2018)

Idemitsu was selected as a winner of both an Excellent Invention Award and an Award for Outstanding Practice of Innovation by the Japan Institute of Invention and Innovation under its FY2018 National Commendation for Invention program. This selection was attributable to an OLED element and an organic light emitting medium both developed by Idemitsu (patent No. 4221050).

The Japan Institute of Invention and Innovation has been sponsoring this award program to commend Japan's leading researchers and scientists who contributed to the enhancement of the country's scientific technologies and the development of its industrial sector. This award program is widely recognized as the most prestigious among intellectual property-related award programs in Japan.

In the development of a blue light-emitting element, which had been said to be difficult to put into practical use, Idemitsu achieved a blue color light-emitting element with much higher color purity than the previous blue one, contributing to prolonged life of displays. Idemitsu was highly evaluated by the institute for the significant contribution to the practical use of OLED full color displays.





## ESG Data

## Environment

- Environmental data covers Idemitsu Kosan Co.,Ltd. and its group companies indicated with ●. However, the scope of reporting of each data point differs. For details, please refer to the notes for each data point.
- Environmental data for FY2018 indicated with ☑ has been assured by the Independent Practitioner.
- Idemitsu's FY2018 is from April 2018 to March 2019 (12 months). However, the reporting period of each data point differs. For details, please refer to the notes for each data point.
- Totals may not be exact due to rounding.
- In addition, some numerical data in the previous fiscal years has been revised.

## Idemitsu

Overview of Environmental Impacts		Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Scope of Reporting and Calculation Method
Extraction	Energy	PJ	32	32	33	31	30 ☑	Crude oil
	Equivalent in crude oil	thousand kl	830	830	841	800	780 ☑	● Idemitsu Petroleum Norge AS
	Crude oil purchase (including below production)	thousand kl	29,141	28,762	29,421	28,007	26,964	Coal
	Crude oil production (from January to December 2018)	thousand kl	1,684	2,089	2,500	2,145	1,557	● ENSHAM COAL SALES PTY. LTD.
	Gas purchase	thousand t	2,347	2,659	3,201	1,612	1,578	● MUSWELLBROOK COAL COMPANY LTD
	Coal purchase (including below production)	thousand t	14,523	16,212	16,741	16,759	16,357	● BOGGABRI COAL OPERATIONS PTY LTD
	Coal production (from January to December 2018)	thousand t	11,274	12,405	13,100	13,438	12,543	● TARRAWONGA COAL SALES PTY LTD
	CO <sub>2</sub> -Scope 1	thousand tCO <sub>2</sub>	-	329	334	315	285 ☑	● PT MITRABARA ADIPERDANA Tbk
	CO <sub>2</sub> -Scope 2	thousand tCO <sub>2</sub>	-	75	84	68	73 ☑	[Calculation method]
	CO <sub>2</sub> -Scope 3	thousand tCO <sub>2</sub>	-	1,475	1,486	1,424	1,410 ☑	CO <sub>2</sub> emissions by Scope: Calculated in accordance with the GHG Protocols
	Total CO <sub>2</sub> (Scope 1~3)	thousand tCO <sub>2</sub>	1,872	1,879	1,904	1,807	1,769 ☑	CO <sub>2</sub> emissions, SO <sub>x</sub> , NO <sub>x</sub> : Calculated by multiplying volume of crude oil production and coal extraction by the CO <sub>2</sub> emission intensity
	SO <sub>x</sub> emissions	t	21,917	21,742	22,164	21,155	20,450 ☑	CO <sub>2</sub> emission intensity uses figures from "Energy consumption and environmental impact of the entire life cycle of crude oil and coal" reported by JPEC (Japan Petroleum Energy Center)
NO <sub>x</sub> emissions	t	5,894	6,143	6,296	6,137	5,959 ☑	Environmental impact related to gas extraction is not calculated	
Crude oil procurement and import	Energy	PJ	11	13	14	13	13 ☑	[Scope 3 category]
	Equivalent in crude oil	thousand kl	287	347	361	340	336 ☑	Category1: Purchased products and services
	Crude oil import	thousand kl	27,457	26,673	26,921	25,862	25,406	CO <sub>2</sub> emissions from crude oil and coal extracted from oil fields and mines owned by other companies
	LPG import	thousand t	2,347	2,659	3,201	1,612	1,578	Category3: Fuel and energy-related activities (Ones not included in Scope 1 and Scope 2)
	Coal import	thousand t	7,773	11,789	12,706	12,721	12,771	CO <sub>2</sub> emissions from coal collected from mines owned by other companies
	CO <sub>2</sub> -Scope 1	thousand tCO <sub>2</sub>	-	196	241	209	190 ☑	● Idemitsu Tanker Co., Ltd.
	CO <sub>2</sub> -Scope 2	thousand tCO <sub>2</sub>	-	0	0	0	0 ☑	● Astomos Energy Corporation
	CO <sub>2</sub> -Scope 3	thousand tCO <sub>2</sub>	-	766	760	733	740 ☑	[Calculation method]
	Total CO <sub>2</sub> (Scope 1~3)	thousand tCO <sub>2</sub>	795	962	1,002	943	931 ☑	CO <sub>2</sub> emissions by Scope: Calculated in accordance with the GHG Protocols
	SO <sub>x</sub> emissions	t	14,784	18,171	18,984	17,919	17,711 ☑	CO <sub>2</sub> emissions: Calculated by multiplying energy consumption (raw material transportation) by the CO <sub>2</sub> emission coefficient
	NO <sub>x</sub> emissions	t	22,182	26,963	28,098	26,482	26,156 ☑	CO <sub>2</sub> emission coefficient uses figures from the Act on Promotion of Global Warming Countermeasures



## Idemitsu

Overview of Environmental Impacts		Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Scope of Reporting and Calculation Method
Domestic manufacturing	Energy	PJ	136	139	142	140	139	<ul style="list-style-type: none"> <li>• Hokkaido Refinery</li> <li>• Chiba Complex</li> <li>• Aichi Refinery</li> <li>• Tokuyama Complex</li> <li>• Cray Valley Idemitsu Corporation</li> <li>• Prime Polymer Co., Ltd., Anesaki Works</li> <li>• BASF Idemitsu Co., Ltd.</li> <li>• Omaezaki Factory</li> <li>• Keihin Lube Center</li> <li>• Idemitsu Unitech Co., Ltd.</li> <li>• Union Oil Industry Co., Ltd.</li> <li>• Moji Lube Center</li> <li>• SDS Biotech K.K.</li> </ul>
	Equivalent in crude oil	thousand kl	3,512	3,596	3,661	3,605	3,584	
	Seawater	thousand t	1,199,226	1,205,868	1,231,103	1,257,447	1,288,375	
	Water	thousand t	60,415	61,032	58,555	58,314	60,130	
	Crude oil throughput	thousand kl	27,066	26,761	27,195	25,604	25,571	
	Lubricants production	thousand kl	673	695	735	726	744	
	Petrochemical product manufacturing (ethylene equivalent)	thousand t	3,402	3,777	3,710	3,825	3,870	
	CO <sub>2</sub> -Scope 1	thousand tCO <sub>2</sub>	-	6,958	7,004	6,941	6,862	[Calculation method]
	CO <sub>2</sub> -Scope 2	thousand tCO <sub>2</sub>	-	338	325	324	363	Energy: Calculated based on the Act on the Rational Use of Energy (not including fuel coming under sales of electricity and steam)
	CO <sub>2</sub> -Scope 3	thousand tCO <sub>2</sub>	-	-	-	-	-	Seawater, Water: All amount of water intake used at production sites (Water include industrial water, tap water and underground water)
	Total CO <sub>2</sub> (Scope 1~3)	thousand tCO <sub>2</sub>	7,121	7,296	7,329	7,264	7,225	CO <sub>2</sub> emissions by Scope: Calculated in accordance with the GHG Protocols
	SOx emissions	t	7,967	7,105	7,058	5,994	6,066	CO <sub>2</sub> emissions: Calculated based on the Act on Promotion of Global Warming Countermeasures
	NOx emissions	t	6,392	6,453	6,565	6,457	6,640	However, only CO <sub>2</sub> emissions are disclosed (excluding CH <sub>4</sub> , N <sub>2</sub> O, HFC, PFC, SF <sub>6</sub> , NF <sub>3</sub> )
	Soot/dust	t	232	245	285	230	231	SOx, NOx, Soot/dust: Calculated by multiplying exhaust gases' actual measured value by actual measured value of exhaust gases' concentration levels (excluding Omaezaki Factory, Union Oil Industry Co., Ltd.)
	Wastewater	thousand t	1,257,684	1,265,015	1,287,635	1,313,998	1,345,984	Wastewater: Total amount of wastewater from sites
	COD	t	86	94	96	104	97	COD, Total nitrogen (TN), Total phosphorus (TP): Figures regularly reported to government offices based on actual measured value
	Total nitrogen (TN)	t	100	82	91	93	104	
	Total phosphorus (TP)	t	1.6	1.1	1.1	1.2	1.5	
	Total waste	t	233,861	243,841	213,550	215,354	209,828	<ul style="list-style-type: none"> <li>• Hokkaido Refinery</li> <li>• Chiba Complex</li> <li>• Aichi Refinery</li> <li>• Tokuyama Complex</li> <li>• Cray Valley Idemitsu Corporation</li> <li>• Prime Polymer Co., Ltd., Anesaki Works</li> </ul>
	Final disposal (landfill)	t	76	84	137	945	1,383	[Calculation method] Total waste: Total amount of industrial waste
Unit energy consumption (refinery)	Energy usage (crude oil equivalent) (l) / Atmospheric distillation equipment converted throughput (kl)		8.36	8.37	8.49	8.79	8.87	<ul style="list-style-type: none"> <li>• Hokkaido Refinery</li> <li>• Chiba Complex</li> <li>• Aichi Refinery</li> </ul>
Unit energy consumption (petrochemical plant)	kl/t	0.408	0.399	0.404	0.406	0.396	<ul style="list-style-type: none"> <li>• Chiba Complex</li> <li>• Tokuyama Complex</li> <li>• Cray Valley Idemitsu Corporation</li> <li>• Prime Polymer Co., Ltd., Anesaki Works</li> </ul>	
Domestic transportation	Energy	PJ	3.8	3.8	3.9	3.6	3.6	[Calculation method]
	Equivalent in crude oil	thousand kl	98.2	97.6	100.7	93.3	92.5	Energy: Calculated based on the Act on the Rational Use of Energy (Scope: Petroleum+Lubricants+Petrochemical products+Coal+LPG)
	Water	thousand t	12.3	6.5	6.5	8.4	12.6	Water: Amount of water used at coal depot
	Oil product transportation (ship, truck)	thousand t-km	8,966,342	9,097,901	9,201,165	8,910,000	8,728,000	CO <sub>2</sub> emissions by Scope: Calculated in accordance with the GHG Protocols
	Petrochemical product transportation (truck, ship, railway)	thousand t-km	445,043	528,081	612,677	622,642	607,623	CO <sub>2</sub> emissions: Calculated by multiplying energy consumption (product transportation) by the CO <sub>2</sub> emission coefficient
	Lubricant transportation (truck, ship, railway)	thousand t-km	548,598	574,685	619,185	609,646	589,499	CO <sub>2</sub> emission coefficient uses figures from the Act on Promotion of Global Warming Countermeasures
	LPG transportation (truck, etc.)	thousand t	2,017	2,122	1,996	1,009	-	However, only CO <sub>2</sub> emissions are disclosed (excluding CH <sub>4</sub> , N <sub>2</sub> O, HFC, PFC, SF <sub>6</sub> , NF <sub>3</sub> )
	Coal transportation (truck)	thousand t-km	154,586	152,282	153,585	143,156	162,312	SOx: Calculated by multiplying fuel consumption by sulphur concentration levels
	CO <sub>2</sub> -Scope 1	thousand tCO <sub>2</sub>	0	0	0	0	0	NOx: Calculated in consideration of NOx emission coefficient intensity table by vehicle type of the Ministry of Land, Infrastructure, Transport and Tourism, mileage, vehicle weight and transport volume, etc.
	CO <sub>2</sub> -Scope 2	thousand tCO <sub>2</sub>	0	0	0	0	0	
	CO <sub>2</sub> -Scope 3	thousand tCO <sub>2</sub>	268	266	275	255	253	Wastewater: Wastewater discharged from coal depots
	Total CO <sub>2</sub> (Scope 1~3)	thousand tCO <sub>2</sub>	268	266	275	255	253	[Scope 3 category]
	SOx emissions	t	3,062	3,032	2,828	3,155	3,122	Category9: Downstream transportation and distribution (product transportation)
	NOx emissions	t	3,625	3,611	3,394	3,747	3,274	CO <sub>2</sub> emissions attributable to transportation by contracted transport companies and maritime shipping companies
	Wastewater	thousand t	2.8	2.9	3.0	3.5	6.0	
Of the datas mentioned above, excludes LPG	Equivalent in crude oil	thousand kl	89.7	88.3	91.6	88.9	88.5	[Calculation method]
	Transportation volume	million t-km	10,115	10,353	10,587	10,285	10,087	Unit energy consumption: Calculated based on the Act on the Rational Use of Energy
	Unit energy consumption	kl/million t-km	8.87	8.53	8.65	8.65	8.77	(Scope: Petroleum+Lubricants+Petrochemical products+Coal)



## Idemitsu

Overview of Environmental Impacts		Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Scope of Reporting and Calculation Method
Domestic sales	Energy	PJ	0.8	0.8	0.7	0.8	0.7	<ul style="list-style-type: none"> <li>Oil depots (Kushiro, Hakodate, Hachinohe, Akita, Shiogama, Hitachi, Tokyo, Hachijojima, Oigawa, Niigata, Fushiki, Kishiwada, Hiroshima, Takamatsu, Kochi, Fukuoka, Nagasaki, Kagoshima)</li> <li>Advanced Technology Research Laboratories</li> <li>Lubricants Research Laboratory</li> <li>Coal &amp; Environment Research Laboratory</li> <li>Offices (Head Office, Branches, Idemitsu Retail Marketing Co., Ltd., Idemitsu Unitech Co., Ltd., SDS Biotech K.K., etc.)</li> </ul> [Calculation method] Energy: Calculated based on the Act on the Rational Use of Energy CO <sub>2</sub> emissions by Scope: Calculated in accordance with the GHG Protocols CO <sub>2</sub> emissions: Calculated based on the Act on Promotion of Global Warming Countermeasures However, only CO <sub>2</sub> emissions are disclosed (excluding CH <sub>4</sub> , N <sub>2</sub> O, HFC, PFC, SF <sub>6</sub> , NF <sub>3</sub> )
	Equivalent in crude oil	thousand kl	19.7	19.7	19.2	19.5	18.7	
	CO <sub>2</sub> -Scope 1	thousand tCO <sub>2</sub>	0	0	0	0	10	
	CO <sub>2</sub> -Scope 2	thousand tCO <sub>2</sub>	44	43	39	32	24	
	CO <sub>2</sub> -Scope 3	thousand tCO <sub>2</sub>	-	-	-	-	0	
	Total CO <sub>2</sub> (Scope 1~3)	thousand tCO <sub>2</sub>	44	43	39	32	34	
Consumption	Gasoline sales	thousand kl	8,199	8,478	8,109	7,876	7,691	[Calculation method] CO <sub>2</sub> emissions by Scope: Calculated in accordance with the GHG Protocols Calculated by multiplying domestic product sales (fuel, coal) by the CO <sub>2</sub> emission coefficient CO <sub>2</sub> emission coefficient uses figures from the Act on Promotion of Global Warming Countermeasures However, only CO <sub>2</sub> emissions are disclosed (excluding CH <sub>4</sub> , N <sub>2</sub> O, HFC, PFC, SF <sub>6</sub> , NF <sub>3</sub> ) * The sales volumes of LPG (propane) and LPG (butane) are those of Astomos Energy Corporation. CO <sub>2</sub> emissions are calculated by multiplying the investment ratio in Astomos Energy Corporation (51%).  [Scope 3 category] Category11: Product use by customers Domestic sales volumes * Lubricants and petrochemical products that are not used as fuel are not included in the calculation.
	Jet fuel sales	thousand kl	1,655	1,604	1,678	1,856	1,973	
	Kerosene sales	thousand kl	2,950	2,606	2,570	2,579	2,280	
	Diesel oil sales	thousand kl	6,153	6,041	6,107	6,163	6,041	
	Heavy fuel oil A sales	thousand kl	2,863	2,553	2,421	2,320	2,099	
	Heavy fuel oil C sales	thousand kl	2,720	2,585	2,433	2,386	2,143	
	LPG (propane) sales	thousand t	2,710	2,808	2,688	2,778	2,577	
	LPG (butane) sales	thousand t	827	845	719	701	641	
	Coal	thousand t	5,666	7,850	7,116	6,955	6,868	
	Lubricants	thousand kl	557	563	570	595	601	
	Basic chemicals	thousand t	3,096	3,273	3,316	3,403	3,493	
	Performance chemicals	thousand t	47	46	47	47	50	
	CO <sub>2</sub> -Scope 1	thousand tCO <sub>2</sub>	-	0	0	0	0	
	CO <sub>2</sub> -Scope 2	thousand tCO <sub>2</sub>	-	0	0	0	0	
	CO <sub>2</sub> -Scope 3	thousand tCO <sub>2</sub>	-	91,626	87,715	82,224	79,318	
	Total CO <sub>2</sub> (Scope 1~3)	thousand tCO <sub>2</sub>	87,820	91,626	87,715	82,224	79,318	
	SOx emissions	t	87,588	86,688	85,402	86,960	91,223	

CO <sub>2</sub> Emissions by Scope	Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Scope of Reporting and Calculation Method
Scope 1	thousand tCO <sub>2</sub>	-	7,483	7,579	7,465	7,347	Extraction+Crude oil procurement and import+Domestic manufacturing+Domestic transportation+Domestic sales+Consumption
Scope 2	thousand tCO <sub>2</sub>	-	456	448	424	460	
Scope 3	thousand tCO <sub>2</sub>	-	94,133	90,236	84,637	81,723	Extraction+Crude oil procurement and import+Domestic transportation+Domestic sales+Consumption+Business travel and Employee commuting * Excluding business travel and employee commuting until FY2017 [Calculation method] CO <sub>2</sub> emissions related to business travel: Calculated by multiplying the number of employees by emission intensity CO <sub>2</sub> emissions related to employee commuting: Calculated by multiplying employee commuting costs by emission intensity CO <sub>2</sub> emission intensity uses figures from the Emissions Unit Values Database on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain
(CO <sub>2</sub> emissions related to business travel and employee commuting) * This data is included in Scope 3.	thousand tCO <sub>2</sub>	-	-	-	-	1.4	
Totals (Scope 1~3)	thousand tCO <sub>2</sub>	97,920	102,072	98,263	92,526	89,530	[Scope 3 category] Category6: Business travel (Scope: Idemitsu Kosan Co.,Ltd.) Category7: Employee commuting (Scope: Idemitsu Kosan Co.,Ltd.)



## Idemitsu

Waste	Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Scope of Reporting and Calculation Method	
Total waste	t	233,861	243,841	213,550	215,354	209,828 <input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>•Hokkaido Refinery</li> <li>•Chiba Complex</li> <li>•Aichi Refinery</li> <li>•Tokuyama Complex</li> <li>•Cray Valley Idemitsu Corporation</li> <li>•Prime Polymer Co., Ltd., Anesaki Works</li> </ul>	
Reduced by intermediate treatment	t	95,023	98,319	86,998	91,227	107,605 <input checked="" type="checkbox"/>		
Recycled	t	138,762	145,438	126,415	123,182	100,840 <input checked="" type="checkbox"/>		
Final disposal (landfill)	t	76	84	137	945	1,383 <input checked="" type="checkbox"/>		
Final disposal rate	%	0.032	0.034	0.064	0.439	0.659 <input checked="" type="checkbox"/>		
Amount of Water Resources Used, Water Recycling Rate	Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Scope of Reporting and Calculation Method	
Seawater	thousand t	1,199,226	1,205,868	1,231,103	1,257,447	1,288,375 <input checked="" type="checkbox"/>	•Domestic manufacturing+Domestic transportation	
Water	thousand t	60,427	61,039	58,562	58,322	60,143 <input checked="" type="checkbox"/>		
Wastewater	thousand t	1,257,687	1,265,018	1,287,638	1,314,002	1,345,990 <input checked="" type="checkbox"/>		
Water recycling rate	%	-	-	-	-	90.2 <input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>•Hokkaido Refinery</li> <li>•Aichi Refinery</li> <li>•Cray Valley Idemitsu Corporation</li> <li>•Chiba Complex</li> <li>•Tokuyama Complex</li> <li>•Prime Polymer Co., Ltd., Anesaki Works</li> </ul> <p>* Water recycling rate = Volume of recycled / (Volume of recycled + Volume of water intake for industrial water)</p>	
Air Pollutant Emissions	Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Scope of Reporting and Calculation Method	
VOC emissions	t	3,778	3,892	3,751	3,707	3,658 <input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>•Hokkaido Refinery</li> <li>•Aichi Refinery</li> <li>•Oil depots (Kushiro, Hakodate, Hachinohe, Akita, Shiogama, Hitachi, Tokyo, Hachijojima, Oigawa, Niigata, Fushiki, Kishiwada, Hiroshima, Takamatsu, Kochi, Fukuoka, Nagasaki, Kagoshima)</li> <li>•Okinawa Idemitsu Co., Ltd.</li> <li>•Chiba Complex</li> <li>•Tokuyama Complex</li> </ul>	
High-Concentration PCB Waste Processing Results	Unit	Storage Volume or Volume Reduced				Scope of Reporting and Calculation Method		
Storage volume of previous fiscal year (as of the end of March 2018)	t			41 <input checked="" type="checkbox"/>		<ul style="list-style-type: none"> <li>•Chiba Complex</li> <li>•Prime Polymer Co., Ltd., Anesaki Works</li> <li>•Lubricants Research Laboratory</li> <li>•Oil depots (Kushiro, Hakodate, Hachinohe, Akita, Shiogama, Hitachi, Tokyo, Hachijojima, Oigawa, Niigata, Fushiki, Kishiwada, Hiroshima, Takamatsu, Kochi, Fukuoka, Nagasaki, Kagoshima)</li> <li>•Okinawa Idemitsu Co., Ltd.</li> <li>•Idemitsu Unitech Co., Ltd., R&amp;D Center for Plastic Products</li> </ul>	<ul style="list-style-type: none"> <li>•Aichi Refinery</li> <li>•BASF Idemitsu Co., Ltd.</li> <li>•Keihin Lube Center</li> </ul>	<ul style="list-style-type: none"> <li>•Cray Valley Idemitsu Corporation</li> <li>•Advanced Technology Research Laboratories</li> </ul>
Volume reduced through treating and sorting in FY2018	t			8 <input checked="" type="checkbox"/>				
Storage volume as of the end of March 2019	t			33 <input checked="" type="checkbox"/>			<ul style="list-style-type: none"> <li>•Astomos Energy Corporation</li> <li>•Kanazawa Gas Terminal</li> </ul>	
Amount of CFCs and HCFCs Used by Large-Scale Processing Equipment	Unit	March 2018	March 2019	March 2026 (Planned)	Scope of Reporting and Calculation Method			
CFC	t	0.0	0.0 <input checked="" type="checkbox"/>	0.0	<ul style="list-style-type: none"> <li>•Hokkaido Refinery</li> <li>•Tokuyama Complex</li> <li>•BASF Idemitsu Co., Ltd.</li> </ul>	<ul style="list-style-type: none"> <li>•Chiba Complex</li> <li>•Cray Valley Idemitsu Corporation</li> </ul>	<ul style="list-style-type: none"> <li>•Aichi Refinery</li> <li>•Prime Polymer Co., Ltd., Anesaki Works</li> </ul>	
HCFC	t	42.9	42.9 <input checked="" type="checkbox"/>	0.0				
Chlorofluorocarbons Leakage Results	Unit	FY2018				Scope of Reporting and Calculation Method		
Large-scale equipments	t-CO <sub>2</sub>			383.7 <input checked="" type="checkbox"/>		<ul style="list-style-type: none"> <li>•Hokkaido Refinery</li> <li>•Tokuyama Complex</li> <li>•BASF Idemitsu Co., Ltd.</li> <li>•Performance Materials Laboratories</li> </ul>	<ul style="list-style-type: none"> <li>•Chiba Complex</li> <li>•Cray Valley Idemitsu Corporation</li> <li>•Advanced Technology Research Laboratories</li> <li>•Idemitsu Unitech Co., Ltd.</li> </ul>	<ul style="list-style-type: none"> <li>•Aichi Refinery</li> <li>•Prime Polymer Co., Ltd., Anesaki Works</li> </ul>
Air conditioners	t-CO <sub>2</sub>			1471.2 <input checked="" type="checkbox"/>				
Others	t-CO <sub>2</sub>			2.5 <input checked="" type="checkbox"/>				
Totals	t-CO <sub>2</sub>			1857.4 <input checked="" type="checkbox"/>				
Number of Environmental Accidents FY2018		0 case						
<b>Acquisition Status of ISO 14001 (Environmental Management Systems)</b> * As of July 1, 2019								
Domestic business sites		19 sites						
Overseas business sites		8 sites						





## Environment

- Environmental data covers Showa Shell Sekiyu K.K. and its group companies indicated with ●. However, the scope of reporting of each data point differs. For details, please refer to the notes for each data point.
- Environmental data for FY2018 indicated with ☑ has been assured by the Independent Practitioner.
- Showa Shell's FY2018 is from January 2018 to March 2019 (15 months). However, the reporting period of each data point differs. For details, please refer to the notes for each data point.
- Totals may not be exact due to rounding.
- In addition, some numerical data in the previous fiscal years has been revised.

### Showa Shell

Overview of Environmental Impacts		Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Scope of Reporting and Calculation Method
Crude oil procurement and import	Energy	PJ	7.1	7.6	9.0	9.5	12 ☑	[Calculation method] Energy: Calculated by multiplying fuel consumption during crude oil transportation by unit of heat release
	Equivalent in crude oil	thousand kl	183	195	233	246	315 ☑	In regard to a part of transportation data whose direct fuel consumption cannot be measured, estimates are based on average fuel consumption
	CO <sub>2</sub> -Scope 1	thousand tCO <sub>2</sub>	-	-	-	-	0 ☑	Unit of heat release uses figures from the Act on the Rational Use of Energy
	CO <sub>2</sub> -Scope 2	thousand tCO <sub>2</sub>	-	-	-	-	0 ☑	CO <sub>2</sub> emissions by Scope: Calculated in accordance with the GHG Protocols
	CO <sub>2</sub> -Scope 3	thousand tCO <sub>2</sub>	-	-	-	-	873 ☑	CO <sub>2</sub> emissions: Calculated by multiplying energy consumption by CO <sub>2</sub> emission coefficient CO <sub>2</sub> emission coefficient uses figures from the Act on Promotion of Global Warming Countermeasures
	Total CO <sub>2</sub> (Scope 1~3)	thousand tCO <sub>2</sub>	506	540	647	681	873 ☑	[Scope 3 category] Category4: Upstream transportation and distribution (raw material) CO <sub>2</sub> emissions attributable to transportation using ships chartered from other companies
Domestic manufacturing Oil refining	Energy	PJ	69	72	67	67	88 ☑	● Showa Yokkaichi Sekiyu Co., Ltd. ● TOA Oil Co., Ltd. ● Seibu Oil Co., Ltd.
	Equivalent in crude oil	thousand kl	1,784	1,857	1,732	1,727	2,282 ☑	
	Seawater	thousand t	135,472	138,733	137,039	133,554	170,600 ☑	
	Industrial water	thousand t	32,718	32,866	31,433	30,627	40,316 ☑	[Calculation method]
	Tap water	thousand t	184	173	196	170	194 ☑	Energy: Calculated based on the Act on the Rational Use of Energy
	Crude oil throughput	thousand kl	22,182	23,639	22,051	22,622	30,294 ☑	Water consumption: All amount of water intake used at production sites
	CO <sub>2</sub> -Scope 1	thousand tCO <sub>2</sub>	-	-	-	-	6,982 ☑	CO <sub>2</sub> emissions by Scope: Calculated in accordance with the GHG Protocols
	CO <sub>2</sub> -Scope 2	thousand tCO <sub>2</sub>	-	-	-	-	434 ☑	CO <sub>2</sub> emissions: Calculated based on the Act on Promotion of Global Warming Countermeasures
	CO <sub>2</sub> -Scope 3	thousand tCO <sub>2</sub>	-	-	-	-	- ☑	However, only CO <sub>2</sub> emissions are disclosed (excluding CH <sub>4</sub> , N <sub>2</sub> O, HFC, PFC, SF <sub>6</sub> , NF <sub>3</sub> )
	Total CO <sub>2</sub> (Scope 1~3)	thousand tCO <sub>2</sub>	4,820	5,068	4,750	4,852	7,416 ☑	SOx: Calculated by multiplying fuel consumption by sulphur concentration levels
	SOx emissions	t	2,902	3,018	2,694	2,250	2,972 ☑	NOx, Soot/dust: Calculated by multiplying exhaust gases' actual measured value by actual measured value of exhaust gases' concentration levels
	NOx emissions	t	2,125	2,262	2,189	1,942	2,769 ☑	Wastewater: Total amount of wastewater from sites
	Soot/dust	t	80	135	91	72	95 ☑	Total waste: Total amount of industrial waste discharged excluding special controlled industrial waste
	Wastewater	thousand t	168,374	171,772	151,698	147,257	196,122 ☑	Unit energy consumption: Calculated based on the Act on the Rational Use of Energy
	COD	t	-	-	-	-	255 ☑	
	Total waste	t	46,009	42,607	42,886	37,994	51,296 ☑	
Final disposal (landfill)	t	24	32	16	3	0 ☑		
Unit energy consumption	Energy usage(crude oil equivalent)(l) /Atmospheric distillation equipment converted throughput(kl)		7.63	7.45	7.55	7.47	7.28 ☑	



## Showa Shell

Overview of Environmental Impacts		Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Scope of Reporting and Calculation Method
Domestic manufacturing Other manufacturing (lubricants, asphalt, solar modules, etc.)	Energy	PJ	3.2	3.0	3.2	2.8	2.9 <input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>• Showa Shell Sekiyu K.K.</li> <li>• Shell Lubricants Japan K.K.</li> <li>• Keihin Biomass Power Co., Ltd.</li> <li>• Solar Frontier K.K.</li> <li>• Nippon Grease Co., Ltd.</li> <li>• Shoseki Kako Co., Ltd. (excluding Sunamachi Plant)</li> <li>• Rekisei Kagaku K.K.</li> </ul> [Calculation method] Energy: Calculated based on the Act on the Rational Use of Energy Water consumption: All amount of water intake used at production sites CO <sub>2</sub> emissions by Scope: Calculated in accordance with the GHG Protocols CO <sub>2</sub> emissions by Scope: Calculated based on the Act on Promotion of Global Warming Countermeasures However, only CO <sub>2</sub> emissions are disclosed (excluding CH <sub>4</sub> , N <sub>2</sub> O, HFC, PFC, SF <sub>6</sub> , NF <sub>3</sub> ) Wastewater: Total amount of wastewater from sites Total waste: Total amount of industrial waste discharged excluding special controlled industrial waste
	Equivalent in crude oil	thousand kl	83	77	81	72	75 <input checked="" type="checkbox"/>	
	Seawater	thousand t	2,248	-	-	-	-	
	Industrial water	thousand t	2,053	1,800	1,790	1,170	1,479 <input checked="" type="checkbox"/>	
	Tap water	thousand t	197	116	110	79	110 <input checked="" type="checkbox"/>	
	Underground water	thousand t	0	1,990	1,734	2,009	2,102 <input checked="" type="checkbox"/>	
	CO <sub>2</sub> -Scope 1	thousand tCO <sub>2</sub>	-	-	-	-	32 <input checked="" type="checkbox"/>	
	CO <sub>2</sub> -Scope 2	thousand tCO <sub>2</sub>	-	-	-	-	108 <input checked="" type="checkbox"/>	
	CO <sub>2</sub> -Scope 3	thousand tCO <sub>2</sub>	-	-	-	-	- <input checked="" type="checkbox"/>	
	Total CO <sub>2</sub> (Scope 1~3)	thousand tCO <sub>2</sub>	201	178	176	139	139 <input checked="" type="checkbox"/>	
	Wastewater	thousand t	4,497	3,906	3,634	3,258	3,691 <input checked="" type="checkbox"/>	
	Total waste	t	10,716	11,164	18,102	19,664	23,009 <input checked="" type="checkbox"/>	
Domestic transportation and storage	Energy	PJ	2.5	2.5	2.2	2.4	2.9 <input checked="" type="checkbox"/>	Storage <ul style="list-style-type: none"> <li>• Showa Shell Sekiyu K.K.</li> <li>• Wakamatsu Gas K.K.</li> <li>• Japan Oil Network Co., Ltd.</li> </ul> [Calculation method] Energy during product transportation: Calculated for shippers based on the Act on the Rational Use of Energy Energy at storage locations: Calculated based on the Act on the Rational Use of Energy CO <sub>2</sub> emissions by Scope: Calculated in accordance with the GHG Protocols CO <sub>2</sub> emissions: Calculated by multiplying energy consumption by the CO <sub>2</sub> emission coefficient CO <sub>2</sub> emission coefficient uses figures from the Act on Promotion of Global Warming Countermeasures
	Equivalent in crude oil	thousand kl	65	63	56	61	75 <input checked="" type="checkbox"/>	
	CO <sub>2</sub> -Scope 1	thousand tCO <sub>2</sub>	-	-	-	-	1.0 <input checked="" type="checkbox"/>	
	CO <sub>2</sub> -Scope 2	thousand tCO <sub>2</sub>	-	-	-	-	4.3 <input checked="" type="checkbox"/>	
	CO <sub>2</sub> -Scope 3	thousand tCO <sub>2</sub>	-	-	-	-	193 <input checked="" type="checkbox"/>	
	Total CO <sub>2</sub> (Scope 1~3)	thousand tCO <sub>2</sub>	175	170	149	162	198 <input checked="" type="checkbox"/>	
Of the datas mentioned above, excludes storage	Equivalent in crude oil	thousand kl	-	-	-	-	72 <input checked="" type="checkbox"/>	[Calculation method] Unit energy consumption: Calculated based on the Act on the Rational Use of Energy
	Transportation volume	million t-km	-	-	-	-	7,172 <input checked="" type="checkbox"/>	
	Unit energy consumption	kl/million t-km	-	-	-	-	10.1 <input checked="" type="checkbox"/>	



## Showa Shell

Overview of Environmental Impacts		Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Scope of Reporting and Calculation Method
Domestic sales	Energy	PJ	1.7	1.6	2.0	1.9	2.3 <input checked="" type="checkbox"/>	Showa Shell Contract Service Stations (approx. 3,000 locations)
	Equivalent in crude oil	thousand kl	43	41	51	50	61 <input checked="" type="checkbox"/>	[Calculation method] Energy: Calculated by multiplying actual energy consumption per marketing service station by the number of sales sites
	CO <sub>2</sub> -Scope 1	thousand tCO <sub>2</sub>	-	-	-	-	0 <input checked="" type="checkbox"/>	CO <sub>2</sub> emissions by Scope: Calculated in accordance with the GHG Protocols
	CO <sub>2</sub> -Scope 2	thousand tCO <sub>2</sub>	-	-	-	-	9.9 <input checked="" type="checkbox"/>	CO <sub>2</sub> emissions: Calculated by multiplying energy consumption by the CO <sub>2</sub> emission coefficient CO <sub>2</sub> emission coefficient uses figures from the Act on Promotion of Global Warming Countermeasures
	CO <sub>2</sub> -Scope 3	thousand tCO <sub>2</sub>	-	-	-	-	102 <input checked="" type="checkbox"/>	[Scope 3 category] Category14: Service stations sales Service Stations not included in Scope 1 and 2
	Total CO <sub>2</sub> (Scope 1~3)	thousand tCO <sub>2</sub>	55	53	95	93	112 <input checked="" type="checkbox"/>	[Calculation method] Calculated by multiplying energy consumption of service stations not included in Scope 1 and 2 by CO <sub>2</sub> emission coefficient
Consumption	Gasoline sales	thousand kl	8,694	8,699	8,678	8,663	9,555 <input checked="" type="checkbox"/>	[Calculation method]
	Jet fuel sales	thousand kl	1,791	1,794	1,919	2,179	2,501 <input checked="" type="checkbox"/>	Oil product sales: Domestic sales of oil products are aggregated by the oil product category. Export sales and product supply to other companies with volume business alliances are included in others of FY2018.
	Kerosene sales	thousand kl	2,681	2,625	2,670	2,790	3,248 <input checked="" type="checkbox"/>	
	Diesel oil sales	thousand kl	5,395	5,366	5,337	5,655	6,622 <input checked="" type="checkbox"/>	CO <sub>2</sub> emissions by Scope: Calculated in accordance with the GHG Protocols
	Heavy fuel oil A sales	thousand kl					2,255 <input checked="" type="checkbox"/>	CO <sub>2</sub> emissions (during burning of domestic oil products): Calculated by multiplying domestic product sales by the CO <sub>2</sub> emission coefficient
	Heavy fuel oil C sales	thousand kl	3,009	3,081	3,176	3,206	1,070 <input checked="" type="checkbox"/>	CO <sub>2</sub> emission coefficient uses figures from the Act on Promotion of Global Warming Countermeasures
	LPG (propane) sales	thousand kl				253	80 <input checked="" type="checkbox"/>	
	LPG (butane) sales	thousand kl					160 <input checked="" type="checkbox"/>	[Scope 3 category]
	Lubricants	thousand kl	*Included in others	*Included in others	*Included in others		344 <input checked="" type="checkbox"/>	Category11: Product use by customers
	Bacsic chemicals	thousand kl				*Included in others	1,448 <input checked="" type="checkbox"/>	Domestic sales volumes
	Others	thousand kl	6,085	6,588	4,760	4,509	8,980 <input checked="" type="checkbox"/>	* Lubricants and petrochemical products that are not used as fuel are not included in the calculation.
	CO <sub>2</sub> -Scope 1	thousand tCO <sub>2</sub>	-	-	-	-	0 <input checked="" type="checkbox"/>	
	CO <sub>2</sub> -Scope 2	thousand tCO <sub>2</sub>	-	-	-	-	0 <input checked="" type="checkbox"/>	
	CO <sub>2</sub> -Scope 3	thousand tCO <sub>2</sub>	-	-	-	-	63,331 <input checked="" type="checkbox"/>	
Total CO <sub>2</sub> (Scope 1~3)	thousand tCO <sub>2</sub>	69,390	70,446	66,278	56,526	63,331 <input checked="" type="checkbox"/>		



## Showa Shell

CO <sub>2</sub> Emissions by Scope	Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Scope of Reporting and Calculation Method
Scope1	thousand tCO <sub>2</sub>	-	-	-	5,137	7,015 <input checked="" type="checkbox"/>	Domestic manufacturing (oil refining, other manufacturing)+Domestic transportation and storage
Scope2	thousand tCO <sub>2</sub>	-	-	-	530	556 <input checked="" type="checkbox"/>	Domestic manufacturing (oil refining, other manufacturing)+Domestic transportation and storage+ Domestic sales
Scope3	thousand tCO <sub>2</sub>	-	-	-	57,448	64,500 <input checked="" type="checkbox"/>	Crude oil procurement and import+Domestic transportation and storage+Domestic sales+ Consumption+Business travel and Employee commuting
(CO <sub>2</sub> emissions related to business travel and employee commuting) * This data is included in Scope 3.	thousand tCO <sub>2</sub>	-	-	-	0.4	0.6 <input checked="" type="checkbox"/>	[Calculation method] CO <sub>2</sub> emissions related to business travel: Calculated by multiplying the number of employees by emission intensity CO <sub>2</sub> emissions related to employee commuting: Calculated by multiplying employee commuting costs by emission intensity CO <sub>2</sub> emission intensity uses figures from the Emissions Unit Values Database on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain
Totals (Scope 1~3)	thousand tCO <sub>2</sub>	75,148	76,454	72,095	63,115	72,070 <input checked="" type="checkbox"/>	[Scope 3 category] Category6: Business travel (Scope: Showa Shell Sekiyu K.K.) Category7: Employee commuting (Scope: Showa Shell Sekiyu K.K.)

Waste	Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Scope of Reporting and Calculation Method
Total waste	t	46,009	42,607	42,886	37,994	40,188 <input checked="" type="checkbox"/>	• Showa Yokkaichi Sekiyu Co., Ltd. • TOA Oil Co., Ltd.
Reduced by intermediate treatment	t	-	-	-	-	26,087 <input checked="" type="checkbox"/>	• Seibu Oil Co., Ltd.
Recycled	t	-	-	-	-	14,102 <input checked="" type="checkbox"/>	FY2014~2017: Calculated from January to December of each year FY2018: Calculated from April 2018 to March 2019
Final disposal (landfill)	t	24	32	16	3	0 <input checked="" type="checkbox"/>	
Final disposal rate	%	0.052	0.075	0.036	0.008	0.000 <input checked="" type="checkbox"/>	



## Showa Shell

Amount of Water Resources Used, Water Recycling Rate	Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Scope of Reporting and Calculation Method
Seawater	thousand t	137,719	138,733	137,039	133,554	170,600 <input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>• Showa Yokkaichi Sekiyu Co., Ltd.</li> <li>• TOA Oil Co., Ltd.</li> </ul>
Industrial water	thousand t	34,770	34,666	33,223	31,797	41,795 <input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>• Seibu Oil Co., Ltd.</li> <li>• Showa Shell Sekiyu K.K.</li> </ul>
Tap water	thousand t	381	289	306	248	304 <input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>• Shell Lubricants Japan K.K.</li> <li>• Keihin Biomass Power Co., Ltd.</li> </ul>
Underground water	thousand t	0	1,990	1,734	2,009	2,102 <input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>• Solar Frontier K.K.</li> <li>• Nippon Grease Co., Ltd.</li> </ul>
Wastewater	thousand t	172,871	175,678	155,332	150,515	199,812 <input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>• Shoseki Kako Co., Ltd.(excluding Sunamachi Plant)</li> <li>• Rekisei Kagaku K.K.</li> </ul>
Water recycling rate	%	-	-	-	96.8	96.6 <input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>• Showa Yokkaichi Sekiyu Co., Ltd.</li> <li>• TOA Oil Co., Ltd.</li> <li>• Seibu Oil Co., Ltd.</li> </ul> <p>* Water recycling rate = Volume of recycled / (Volume of recycled + Volume of water intake for industrial water)</p> <p>* Some data for Showa Yokkaichi Sekiyu Co., Ltd. uses estimates</p>

Air Pollutant Emissions	Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Scope of Reporting and Calculation Method
VOC emissions	t	-	-	-	4,873	4,639	<ul style="list-style-type: none"> <li>• Showa Shell Sekiyu K.K.</li> <li>• Showa Yokkaichi Sekiyu Co., Ltd.</li> <li>• TOA Oil Co., Ltd.</li> <li>• Seibu Oil Co., Ltd.</li> <li>• Shell Lubricants Japan K.K.</li> <li>• Japan Oil Network Co., Ltd.</li> </ul>

Chlorofluorocarbons Leakage Results	Unit	FY2018	Scope of Reporting and Calculation Method
Large-scale equipments			<ul style="list-style-type: none"> <li>• Showa Shell Sekiyu K.K.</li> </ul>
Air conditioners	t-CO <sub>2</sub>	165.5 <input checked="" type="checkbox"/>	Reporting period: From April 2018 to March 2019
Others			
Totals	t-CO <sub>2</sub>	165.5 <input checked="" type="checkbox"/>	

Number of Environmental Accidents FY2018	0 case
	* As of July 1, 2019

Acquisition Status of ISO 14001 (Environmental Management Systems)	
Domestic business sites	11 sites



## Social

- Social data covers Idemitsu Kosan Co.,Ltd. and Showa Shell Sekiyu K.K. on non-consolidated basis. Its group companies are included in the scope of data for some data points. For details, please refer to the notes for each data point.
- Results reported are as of 2019, but some data reported may be from a different period. For details, please refer to the notes for each data point.
- Social data for FY2019 indicated with  has been assured by the Independent Practitioner.

### Idemitsu

Status of Employees	Unit	FY2019	Scope of Reporting and Calculation Method
* As of July 1, 2019			
Number of employees	people	4,825 <input checked="" type="checkbox"/>	Idemitsu hiring (employees, seniors, full-time contract employees, and advisors) Including employees seconded from Showa Shell, but excluding employees seconded to other companies
Men	people	4,254 <input checked="" type="checkbox"/>	
Women	people	571 <input checked="" type="checkbox"/>	
Percentage of women	%	11.8 <input checked="" type="checkbox"/>	
Number of employees in managerial positions	people	971 <input checked="" type="checkbox"/>	
Men	people	949 <input checked="" type="checkbox"/>	
Women	people	22 <input checked="" type="checkbox"/>	
Percentage of women	%	2.3 <input checked="" type="checkbox"/>	
Average age	years old	43.0 <input checked="" type="checkbox"/>	
Men	years old	43.3 <input checked="" type="checkbox"/>	
Women	years old	41.0 <input checked="" type="checkbox"/>	
Average years employed	years	19.3 <input checked="" type="checkbox"/>	
Men	years	19.6 <input checked="" type="checkbox"/>	
Women	years	16.9 <input checked="" type="checkbox"/>	
Percentage of employees with disabilities	%	2.11 <input checked="" type="checkbox"/>	Idemitsu hiring (employees, seniors, full-time contract employees, and advisors) Including employees seconded from Showa Shell and seconded to other companies It is based on the calculation method of the Ministry of Health, Labour and Welfare.
Number of employees (Consolidated)	people	13,756	Idemitsu and 59 consolidated subsidiaries
Status of Recruitment	Unit	FY2019	Scope of Reporting and Calculation Method
* Hired in April 2019			
Recruitment of new graduates	people	178 <input checked="" type="checkbox"/>	Results are from Idemitsu's and Showa Shell's direct hiring
Men	people	142 <input checked="" type="checkbox"/>	
Women	people	36 <input checked="" type="checkbox"/>	
Percentage of women	%	20.2 <input checked="" type="checkbox"/>	
Foreign nationality	people	5 <input checked="" type="checkbox"/>	
Percentage of foreign nationality	%	2.8 <input checked="" type="checkbox"/>	



## Social

- Social data covers Idemitsu Kosan Co.,Ltd. on non-consolidated basis. Its group companies are included in the scope of data for some data points. For details, please refer to the notes for each data point.
- Results reported are as of the end of FY2018, but some data reported may be from a different period. For details, please refer to the notes for each data point.
- Social data for FY2018 indicated with  has been assured by the Independent Practitioner.
- In addition, some numerical data in the previous fiscal years has been revised.

### Idemitsu

Status of Employees	Unit	Joined in FY2012	Joined in FY2013	Joined in FY2014	Joined in FY2015	Joined in FY2016	Scope of Reporting and Calculation Method
New graduate retention rate (Average for newly hired employees between 2014 and 2016)	%	-	-	-	-	91.5 <input checked="" type="checkbox"/>	Results are from Idemitsu's direct hiring Retention rate: Average rate of three-year retention of new graduates in the relevant fiscal years
Turnover rate of new graduates	%	7.3	5.8	4.0	10.6	13.8 <input checked="" type="checkbox"/>	Turnover rate: Turnover rate of new graduates within three years after employment in the relevant fiscal year

Status of Recruitment	Unit	FY2018	Scope of Reporting and Calculation Method
Career recruitment	people	67 <input checked="" type="checkbox"/>	Results are from Idemitsu's direct hiring

Work-Life Balance Support Systems and Usage Numbers	Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Scope of Reporting and Calculation Method	
Maternity leave	Women	people	16	22	25	26	28 <input checked="" type="checkbox"/>	Systems are available for direct and temporary employees, but not for workers from other temp-staff companies.
Childcare leave		people	24	42	51	47	47 <input checked="" type="checkbox"/>	
	Men	people	-	-	-	-	3 <input checked="" type="checkbox"/>	
	Women	people	-	-	-	-	44 <input checked="" type="checkbox"/>	
Nursing care leave		people	0	0	1	4	3 <input checked="" type="checkbox"/>	
	Men	people	-	-	-	-	3 <input checked="" type="checkbox"/>	
	Women	people	-	-	-	-	0 <input checked="" type="checkbox"/>	
Reduced working hours for parenting		people	22	21	34	51	42 <input checked="" type="checkbox"/>	
	Men	people	-	-	-	-	1 <input checked="" type="checkbox"/>	
	Women	people	-	-	-	-	41 <input checked="" type="checkbox"/>	
Leave to care for sick/injured child		people	-	-	-	-	113 <input checked="" type="checkbox"/>	
	Men	people	-	-	-	-	51 <input checked="" type="checkbox"/>	
	Women	people	-	-	-	-	62 <input checked="" type="checkbox"/>	
Family care leave		people	-	-	-	-	43 <input checked="" type="checkbox"/>	
	Men	people	-	-	-	-	34 <input checked="" type="checkbox"/>	
	Women	people	-	-	-	-	9 <input checked="" type="checkbox"/>	

Overtime Work and Annual Paid Leave	Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Scope of Reporting and Calculation Method
Average overtime work hours per employee	hours/month	8.0	8.8	9.9	12.3	15.3 <input checked="" type="checkbox"/>	Results for Idemitsu non-consolidated, excluding employees on leave, and seconded employees
Average annual paid leave taken by an employee	days	9.5	10.5	11.2	11.7	12.7 <input checked="" type="checkbox"/>	Results of overtime work is excluding employees in managerial positions.
Average usage rate of annual paid leave per employee	%	-	-	-	-	68.4 <input checked="" type="checkbox"/>	



## Idemitsu

Training Results		Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Scope of Reporting and Calculation Method
Training hours	Total hours	hours	-	-	-	101,920	70,880 <input checked="" type="checkbox"/>	Results are from training organized by the Human Resources Department (non-consolidated basis)
	Per person	hours	-	-	-	26.0	17.8 <input checked="" type="checkbox"/>	
Amount of investment in training	Total hours	thousand yen	-	-	-	142,612	226,769 <input checked="" type="checkbox"/>	
	Per person	thousand yen	-	-	-	51	57 <input checked="" type="checkbox"/>	

Occupational Accidents		Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Scope of Reporting and Calculation Method
Frequency rate	-		0.22	0.00	0.00	0.51	0.28 <input checked="" type="checkbox"/>	From January to December 2018 <ul style="list-style-type: none"> <li>• Hokkaido Refinery</li> <li>• Chiba Complex</li> <li>• Aichi Refinery</li> <li>• Tokuyama Complex</li> <li>• Prime Polymer Co., Ltd., Anesaki Works</li> <li>• BASF Idemitsu Co., Ltd.</li> </ul> Excluding employees of partner companies
Severity rate	-		0.03	0.00	0.00	0.01	0.03 <input checked="" type="checkbox"/>	[Calculation method] Frequency rate= (Number of fatalities and injuries due to work-related accidents/hours of actual work) × 1,000,000 Severity rate= (Number of lost working days / hours of actual work) × 1,000

		FY2018	Scope of Reporting and Calculation Method
Number of accidents related to safety	Fatalities	1 case	From January to December 2018
	Lost time injuries	16 cases	
	Environmental anomalies	0 case	

## Acquisition Status of ISO 9001 (Quality Management Systems) \* As of July 1, 2019

Domestic and overseas business sites	39 sites
* Including Showa Shell Group's sites	





## Social

- Social data covers Showa Shell Sekiyu K.K. on non-consolidated basis. Its group companies are included in the scope of data for some data points. For details, please refer to the notes for each data point.
- Results reported are as of the end of FY2018, but some data reported may be from a different period. For details, please refer to the notes for each data point.
- Social data for FY2018 indicated with  has been assured by the Independent Practitioner.
- In addition, some numerical data in the previous fiscal years has been revised.

### Showa Shell

Status of Employees	Unit	Joined in FY2012	Joined in FY2013	Joined in FY2014	Joined in FY2015	Joined in FY2016	Scope of Reporting and Calculation Method
New graduate retention rate (Average for newly hired employees between 2014 and 2016)	%	-	-	91.5	89.4	95.5 <input checked="" type="checkbox"/>	Results are from Showa Shell's direct hiring Retention rate: Average rate of three-year retention of new graduates in the relevant fiscal years Turnover rate: Turnover rate of new graduates within three years after employment in the relevant fiscal year
Turnover rate of new graduates	%	0.0	23.8	4.0	5.0	4.8 <input checked="" type="checkbox"/>	

Status of Recruitment	Unit	FY2018	Scope of Reporting and Calculation Method
Career recruitment	people	42 <input checked="" type="checkbox"/>	Results are from Idemitsu's direct hiring * Including contract employees

Work-Life Balance Support Systems and Usage Numbers	Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Scope of Reporting and Calculation Method	
Maternity leave	Women	people	-	-	-	26 <input checked="" type="checkbox"/>	Systems are available for only direct and contract employees (re-employed only)	
Childcare leave	people	30	40	52	43	37 <input checked="" type="checkbox"/>		
	Men	people	3	2	2	4		3 <input checked="" type="checkbox"/>
Nursing care leave	Women	people	27	38	50	39		34 <input checked="" type="checkbox"/>
	Men	people	0	1	0	1		2 <input checked="" type="checkbox"/>
Reduced working hours for parenting	Women	people	0	0	0	0		0 <input checked="" type="checkbox"/>
	Men	people	14	19	27	32		38 <input checked="" type="checkbox"/>
Leave to care for sick/injured child	Women	people	1	1	1	0		0 <input checked="" type="checkbox"/>
	Men	people	13	18	26	32		38 <input checked="" type="checkbox"/>
Family care leave	Women	people	45	35	61	82		113 <input checked="" type="checkbox"/>
	Men	people	23	16	26	32		56 <input checked="" type="checkbox"/>
Telecommuting	Women	people	22	19	35	50		57 <input checked="" type="checkbox"/>
	Men	people	20	13	9	16		17 <input checked="" type="checkbox"/>
Self-development leave of absence	Women	people	13	8	6	10		11 <input checked="" type="checkbox"/>
	Men	people	7	5	3	6		6 <input checked="" type="checkbox"/>
Volunteer leave of absence	Women	people	4	5	15	24		191 <input checked="" type="checkbox"/>
	Men	people	0	0	1	1	111 <input checked="" type="checkbox"/>	
Volunteer leave of absence	Women	people	4	5	14	23	80 <input checked="" type="checkbox"/>	
	Men	people	2	4	3	2	3 <input checked="" type="checkbox"/>	
Volunteer leave of absence	Women	people	0	1	1	0	1 <input checked="" type="checkbox"/>	
	Men	people	2	3	2	2	2 <input checked="" type="checkbox"/>	
Volunteer leave of absence	Women	people	-	-	-	0	1	
	Men	people	-	-	-	0	1	
Volunteer leave of absence	Women	people	-	-	-	0	0	
	Men	people	-	-	-	0	0	



## Showa Shell

Overtime Work and Annual Paid Leave		Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Scope of Reporting and Calculation Method
Average overtime work hours per employee		hours/month	-	-	12.0	12.0	14.8 <input checked="" type="checkbox"/>	From January to December 2018
Average annual paid leave taken by an employee		days	-	-	13.9	13.3	14.9 <input checked="" type="checkbox"/>	Results for Showa Shell non-consolidated, excluding employees on leave, and seconded employees
Average usage rate of annual paid leave per employee		%	-	-	68.3 * Excluding employees in managerial positions	65.7	74.6 <input checked="" type="checkbox"/>	Results of overtime work is excluding employees in managerial positions.
Training Results		Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Scope of Reporting and Calculation Method
Training hours	Total hours	hours	-	-	-	-	14,633 <input checked="" type="checkbox"/>	Results are from training organized by the Human Resources Department (non-consolidated basis)
	Per person	hours	-	-	-	-	21 <input checked="" type="checkbox"/>	
Amount of investment in training	Total hours	thousand yen	133,961	117,030	133,853	198,733	299,611 <input checked="" type="checkbox"/>	
	Per person	thousand yen	155	145	170	275	430 <input checked="" type="checkbox"/>	
Occupational Accidents		Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Scope of Reporting and Calculation Method
Frequency rate		-	0.39	0.40	0.00	0.39	0.00 <input checked="" type="checkbox"/>	From January to December 2018 <ul style="list-style-type: none"> <li>• Showa Yokkaichi Sekiyu Co., Ltd.</li> <li>• TOA Oil Co., Ltd.</li> <li>• Seibu Oil Co., Ltd.</li> </ul> Excluding employees of partner companies
Severity rate		-	0.03	0.12	0.00	0.01	0.00 <input checked="" type="checkbox"/>	[Calculation method] Frequency rate= (Number of fatalities and injuries due to work-related accidents/hours of actual work) ×1,000,000 Severity rate= (Number of lost working days /hours of actual work) ×1,000
Total recordable case frequency for occupational accidents		overall occupational accidents / 1 million hours of actual work	0.8	1.2	1.0	1.5	-	<ul style="list-style-type: none"> <li>• Showa Shell Sekiyu K.K.</li> <li>• Showa Yokkaichi Sekiyu Co., Ltd.</li> <li>• Seibu Oil Co., Ltd.</li> <li>• Keihin Biomass Power Co., Ltd.</li> <li>• Nippon Grease Co., Ltd.</li> <li>• Rekisei Kagaku K.K.</li> <li>• Japan Oil Network Co., Ltd.</li> <li>• Niigata Joint Oil Stockpiling Co., Ltd.</li> <li>• Showa Shell Sempaku K.K.</li> <li>• TOA Oil Co., Ltd.</li> <li>• Shell Lubricants Japan K.K.</li> <li>• Solar Frontier K.K.</li> <li>• Shoseki Kako Co., Ltd.</li> <li>• Wakamatsu Gas K.K.</li> </ul> [Calculation method] Overall occupational accidents = Accidents resulting in lost work days + Accidents not resulting in lost work day
		FY2018	Scope of Reporting and Calculation Method					
Number of accidents related to safety	Fatalities	1 cases	From January to December 2018					
	Lost time injuries	7 cases						
	Environmental anomalies	0 cases						



## Governance

### Idemitsu

Composition of Executive	Unit	FY2015	FY2016	FY2017	FY2018	FY2019
Directors	people	10	10	12	11	13
Of the numbers mentioned above, Outside Directors	people	2 (Woman: 1)	2 (Woman: 1)	4 (Woman: 1, Foreigner: 1)	4 (Woman: 1, Foreigner: 1)	5 (Woman: 1, Foreigner: 1)
Audit & Supervisory Board Members	people	5	5	4	4	4
Of the numbers mentioned above, Outside Audit & Supervisory Board Members	people	3	3	2	2	2

Number of Convened Meetings of the Board of Directors, etc.	Unit	FY2018	Note
Board of Directors	Number of meetings	Times	15
	Average rate of attendance	%	98.8 Calculated attendance rates for Outside Directors and Outside Audit & Supervisory Board Members for FY2018
Audit & Supervisory Board	Number of meetings	Times	16
	Average rate of attendance	%	100 Calculated attendance rates for Outside Audit & Supervisory Board Members for FY2018



## Environmental Data of Refineries and Complexes

### Hokkaido Refinery

	Unit	FY2014	FY2015	FY2016	FY2017	FY2018
Crude oil throughput	thousand kl	7,305	8,183	7,450	8,235	6,750
Equivalent in crude oil	thousand kl	530	572	549	608	522
Unit energy consumption	Energy usage(crude oil equivalent)(l) /Atmospheric distillation equipment converted throughput(kl)	8.08	7.90	8.21	8.46	8.73
Seawater	thousand t	121,982	116,731	116,515	138,293	121,659
Water	thousand t	10,033	10,872	10,234	11,114	12,693
CO <sub>2</sub> emissions	thousand tCO <sub>2</sub>	888	959	891	990	894
SO <sub>x</sub>	t	3,735	3,312	2,809	2,086	1,877
NO <sub>x</sub>	t	1,203	1,338	1,202	1,231	1,037
Soot/dust	t	8.7	6.1	2.0	5.3	15.3
Wastewater	thousand t	132,015	127,603	126,749	149,407	134,352
COD	t	27.3	33.2	29.8	36.26	31
Total nitrogen (TN)	t	-	-	-	-	-
Total phosphorus (TP)	t	-	-	-	-	-
Total waste	t	11,969	9,612	12,372	12,003	9,155
Reduced by intermediate treatment	t	1,419	900	1,526	1,026	1,800
Recycled	t	10,536	8,709	10,842	10,973	7,351
Final disposal (landfill)	t	14	3	4	4	4

### Chiba Complex (Only oil refining until FY2017)

	Unit	FY2014	FY2015	FY2016	FY2017	FY2018
Crude oil throughput	thousand kl	10,936	9,678	11,310	10,321	11,122
Petrochemical product manufacturing (ethylene equivalent)	thousand t	-	-	-	-	2,056
Equivalent in crude oil	thousand kl	873	791	904	833	1,555
Unit energy consumption	Energy usage(crude oil equivalent)(l) /Atmospheric distillation equipment converted throughput(kl)	8.64	8.79	8.53	8.65	8.42
	kl/t	-	-	-	-	0.317
Seawater	thousand t	327,124	297,475	355,018	349,977	503,972
Water	thousand t	19,034	18,494	18,311	18,131	22,513
CO <sub>2</sub> emissions	thousand tCO <sub>2</sub>	1,825	1,687	1,380	1,727	3,148
SO <sub>x</sub>	t	2,151	1,975	2,460	2,205	2,579
NO <sub>x</sub>	t	1,480	1,158	1,634	1,440	2,752
Soot/dust	t	155	149	206	150	160
Wastewater	thousand t	346,158	315,969	373,329	368,108	524,140
COD	t	27	28	32	30	40
Total nitrogen (TN)	t	71	54	60	57	80
Total phosphorus (TP)	t	0.3	0.2	0.3	0.4	0.6
Total waste	t	89,574	94,097	83,181	78,087	66,850
Reduced by intermediate treatment	t	25,965	23,012	19,138	20,149	21,213
Recycled	t	63,597	71,077	64,038	57,916	45,630
Final disposal (landfill)	t	12	8	5	22	7

### Chiba Complex (Petrochemicals)

	Unit	FY2014	FY2015	FY2016	FY2017	FY2018
Petrochemical product manufacturing (ethylene equivalent)	thousand t	1,938	1,876	2,054	1,838	Aggregate in Chiba Complex
Equivalent in crude oil	thousand kl	628	598	662	611	
Unit energy consumption	kl/t	0.324	0.319	0.322	0.332	
Seawater	thousand t	127,202	113,898	127,806	109,444	
Water	thousand t	3,462	3,300	3,447	3,303	
CO <sub>2</sub> emissions	thousand tCO <sub>2</sub>	1,317	1,252	1,379	1,274	
SO <sub>x</sub>	t	16	14	17	16	
NO <sub>x</sub>	t	955	843	913	804	
Soot/dust	t	8	18	6	8	
Wastewater	thousand t	128,709	115,315	129,233	110,987	
COD	t	8	8	8	9	
Total nitrogen (TN)	t	10	11	11	12	
Total phosphorus (TP)	t	0.1	0.1	0.1	0.1	
Total waste	t	11,679	13,518	8,842	8,730	
Reduced by intermediate treatment	t	716	770	2,219	3,200	
Recycled	t	10,960	12,726	6,613	5,524	
Final disposal (landfill)	t	3	22	10	6	



## Aichi Refinery

	Unit	FY2014	FY2015	FY2016	FY2017	FY2018
Crude oil throughput	thousand kl	8,825	8,899	8,435	7,049	7,699
Equivalent in crude oil	thousand kl	681	685	676	586	608
Unit energy consumption	Energy usage(crude oil equivalent)(l) /Atmospheric distillation equipment converted throughput(kl)	8.24	8.31	8.70	9.40	9.76
Seawater	thousand t	233,581	228,914	233,974	207,469	242,389
Water	thousand t	12,474	12,339	12,379	12,438	12,375
CO <sub>2</sub> emissions	thousand tCO <sub>2</sub>	1,301	1,299	1,291	1,146	1,187
SOx	t	955	867	845	851	789
NOx	t	1,302	1,308	1,257	1,270	1,267
Soot/dust	t	48	54	53	52	38
Wastewater	thousand t	246,055	241,253	246,353	219,907	254,764
COD	t	9	8	8	6	8
Total nitrogen (TN)	t	7	6	6	6	11
Total phosphorus (TP)	t	0.7	0.5	0.3	0.3	0.4
Total waste	t	95,850	95,850	80,904	81,988	99,762
Reduced by intermediate treatment	t	52,364	53,997	46,398	47,787	64,417
Recycled	t	43,464	41,835	34,493	34,149	35,321
Final disposal (landfill)	t	22	18	13	52	24

## Tokuyama Complex

	Unit	FY2014	FY2015	FY2016	FY2017	FY2018
Petrochemical product manufacturing (ethylene equivalent)	thousand t	1,464	1,901	1,656	1,986	1,814
Equivalent in crude oil	thousand kl	759	909	835	958	898
Unit energy consumption	kl/t	0.518	0.478	0.504	0.474	0.486
Seawater	thousand t	389,337	448,850	397,790	452,264	420,355
Water	thousand t	14,918	15,521	13,741	13,069	11,962
CO <sub>2</sub> emissions	thousand tCO <sub>2</sub>	1,680	1,981	1,816	2,051	1,928
SOx	t	1,109	936	927	835	821
NOx	t	1,446	1,800	1,557	1,712	1,583
Soot/dust	t	12	16	17	15	18
Wastewater	thousand t	404,255	464,371	411,531	465,332	432,508
COD	t	15	17	19	23	18
Total nitrogen (TN)	t	12	11	15	19	14
Total phosphorus (TP)	t	0.4	0.3	0.4	0.4	0.5
Total waste	t	27,181	30,791	28,278	34,573	34,061
Reduced by intermediate treatment	t	14,586	19,666	17,743	19,091	20,175
Recycled	t	12,570	11,092	10,430	14,621	12,537
Final disposal (landfill)	t	25	33	105	861	1,348



## Comparative Table with GRI Standards

		Idemitsu Sustainability Report 2019 Page Listing		Idemitsu Integration Report 2019 Page Listing	
<b>GRI102: General Disclosures</b>					
<b>1. Organizational profile</b>					
102-1	Name of the organization	P.3	Editorial Policy	P.2 P.66	Editorial Policy Corporate Profile
102-2	Activities, brands, products, and services	P.10 P.17	Review of Operations Overview of Environmental Impacts Through Our Business Activities	P.5~6 P.19~20	Value Creation Process Review of Operations
102-3	Location of headquarters	P.1	Cover	P.64	Corporate Profile
102-4	Location of operations	-		P.66	Corporate Profile
102-5	Ownership and legal form	P.3	Editorial Policy	P.2	Editorial Policy
102-6	Markets served	P.7~9 P.10	Medium-term Management Plan Review of Operations	P.11~14 P.19~20	Medium-term Management Plan Review of Operations
102-7	Scale of the organization	P.10 P.17 P.33, 70	Review of Operations Overview of Environmental Impacts Through Our Business Activities Employment Situation and Status of Employees	P.5~6 P.19~20 P.35 P.59~66	Value Creation Process Review of Operations Organization and Human Capital • Employment Situation Data Section
102-8	Information on employees and other workers	P.70~74	Social	P.35	Organization and Human Capital • Creating a Workplace Where Diverse Employees Can Create Together and Hiring Human Resources
102-9	Supply chain	P.10	Review of Operations	P.19~20 P.21~32	Review of Operations Value Creation Initiatives
102-10	Significant changes to the organization and its supply chain	P.3	Editorial Policy	P.2	Editorial Policy
102-11	Precautionary Principle or approach	P.7 P.11~12	Medium-term Management Plan • Long-term Energy Business Environment Scenario Idemitsu Group's Sustainability	P.11~12 P.15~18	Medium-term Management Plan • Long-term Energy Business Environment Scenario Idemitsu Group's Sustainability
102-12	External initiatives	P.12 P.23 P.26 P.29 P.34	Idemitsu Group's Sustainability • Signing of the United Nations Global Compact Response to Circular Economy Conservation of Biodiversity • Collaboration With External Institutions and Organizations Pollution Prevention • Measures to Prevent Water and Marine Pollution Creating a Workplace Where Diverse Employees Can Create Together and Hiring Human Resources • Promotion of Activities by All Employees (Promotion of D&I)	P.18	Idemitsu Group's Sustainability • Signing of the United Nations Global Compact
102-13	Membership of associations	P.12 P.23 P.29	Idemitsu Group's Sustainability • Signing of the United Nations Global Compact Response to Circular Economy Pollution Prevention • Measures to Prevent Water and Marine Pollution	P.18	Idemitsu Group's Sustainability • Signing of the United Nations Global Compact



## Comparative Table with GRI Standards

		Idemitsu Sustainability Report 2019 Page Listing		Idemitsu Integration Report 2019 Page Listing	
<b>GRI102: General Disclosures</b>					
<b>2. Strategy</b>					
102-14	Statement from senior decision-maker	P.4~6	Message from President	P.7~10	Message from President
102-15	Key impacts, risks, and opportunities	P.11 P.18	Idemitsu Group's Sustainability Response to Climate Change • Risks and Opportunities	P.15~16	Idemitsu Group's Sustainability
<b>3. Ethics and integrity</b>					
102-16	Values, principles, standards, and norms of behavior	P.2 P.30	Management Vision, Action Mindset Human Resources Policy	P.1 P.33	Management Vision, Action Mindset Organization and Human Capital • Human Resources Policy
102-17	Mechanisms for advice and concerns about ethics	P.56~57	Compliance	P.55~56	Compliance
<b>4. Governance</b>					
102-18	Governance structure	P.52~53	Corporate Governance • Outline of Corporate Governance System • Each Committee	P.51~52	Corporate Governance • Outline of Corporate Governance System • Each Committee
102-19	Delegating authority	P.15 P.39	Environmental Management / Environmental Policy • Environmental Management System Ensuring Safety • System for Promoting HSSE Initiatives	P.57	Ensuring Safety • System for Promoting HSSE Initiatives
102-20	Executive-level responsibility for economic, environmental, and social topics	P.15 P.39 P.42 P.52~53 P.56 P.57	Environmental Management / Environmental Policy • Environmental Management System Ensuring Safety • System for Promoting HSSE Initiatives Quality Control and Quality Assurance • Quality Control and Quality Assurance System Corporate Governance • Each Committee Compliance • Compliance Promotion Structure Risk Management • Risk Management Promotion Structure	P.52 P.55 P.56 P.57	Corporate Governance • Each Committee Compliance • Compliance Promotion Structure Risk Management • Risk Management Promotion Structure Ensuring Safety • System for Promoting HSSE Initiatives
102-21	Consulting stakeholders on economic, environmental, and social topics	P.13~14	Idemitsu Group's Sustainability • Dialogue with Stakeholders	P.18	Idemitsu Group's Sustainability • Dialogue with Stakeholders
102-22	Composition of the highest governance body and its committees	P.53	Corporate Governance • Changes in Corporate Governance Structure • Policy for Nominating Candidates for Directors and Audit & Supervisory Board Members	P.52~53	Corporate Governance • Changes in Corporate Governance Structure • Policy for Nominating Candidates for Directors and Audit & Supervisory Board Members
102-23	Chair of the highest governance body	P.52~53	Corporate Governance • Each Committee	P.52	Corporate Governance • Each Committee



## Comparative Table with GRI Standards

		Idemitsu Sustainability Report 2019 Page Listing		Idemitsu Integration Report 2019 Page Listing	
<b>GRI102: General Disclosures</b>					
<b>4. Governance</b>					
102-24	Nominating and selecting the highest governance body	P.53	Corporate Governance • Policy for Nominating Candidates for Directors and Audit & Supervisory Board Members	P.53	Corporate Governance • Policy for Nominating Candidates for Directors and Audit & Supervisory Board Members
102-25	Conflicts of interest	P.52~53	Corporate Governance • Outline of Corporate Governance System • Each Committee • Changes in Corporate Governance Structure • Policy for Nominating Candidates for Directors and Audit & Supervisory Board Members	P.51~53	Corporate Governance • Outline of Corporate Governance System • Each Committee • Changes in Corporate Governance Structure • Policy for Nominating Candidates for Directors and Audit & Supervisory Board Members
102-26	Role of highest governance body in setting purpose, values, and strategy	P.52~53	Corporate Governance • Outline of Corporate Governance System • Each Committee • Changes in Corporate Governance Structure • Policy for Nominating Candidates for Directors and Audit & Supervisory Board Members	P.51~53	Corporate Governance • Outline of Corporate Governance System • Each Committee • Changes in Corporate Governance Structure • Policy for Nominating Candidates for Directors and Audit & Supervisory Board Members
102-27	Collective knowledge of highest governance body	P.52~53	Corporate Governance • Outline of Corporate Governance System • Each Committee • Changes in Corporate Governance Structure • Policy for Nominating Candidates for Directors and Audit & Supervisory Board Members	P.51~53	Corporate Governance • Outline of Corporate Governance System • Each Committee • Changes in Corporate Governance Structure • Policy for Nominating Candidates for Directors and Audit & Supervisory Board Members
102-28	Evaluating the highest governance body's performance	P.54	Corporate Governance • Assessment of the Effectiveness of the Board of Directors	P.53	Corporate Governance • Assessment of the Effectiveness of the Board of Directors
102-30	Effectiveness of risk management processes	P.57	Risk Management • Risk Management Promotion Structure	P.56	Risk Management • Risk Management Promotion Structure
102-31	Review of economic, environmental, and social topics	P.15	Environmental Management / Environmental Policy • Environmental Management System	P.52	Corporate Governance • Each Committee
		P.39	Ensuring Safety • System for Promoting HSSE Initiatives	P.55	Compliance • Compliance Promotion Structure
		P.52~53	Corporate Governance • Each Committee	P.56	Risk Management • Risk Management Promotion Structure
		P.56	Compliance • Compliance Promotion Structure	P.57	Ensuring Safety • System for Promoting HSSE Initiatives
		P.57	Risk Management • Risk Management Promotion Structure		
102-33	Communicating critical concerns	P.57	Risk Management • Risk Management Promotion Structure	P.56	Risk Management • Risk Management Promotion Structure
102-34	Nature and total number of critical concerns	P.57~58	Risk Management • Initiatives for Risk Management	-	
102-35	Remuneration policies	P.54	Corporate Governance • Compensation for Executives	P.53~54	Corporate Governance • Compensation for Executives
102-36	Process for determining remuneration	P.54	Corporate Governance • Compensation for Executives	P.53~54	Corporate Governance • Compensation for Executives
102-37	Stakeholders' involvement in remuneration	P.54	Corporate Governance • Compensation for Executives	P.53~54	Corporate Governance • Compensation for Executives





## Comparative Table with GRI Standards

		Idemitsu Sustainability Report 2019 Page Listing		Idemitsu Integration Report 2019 Page Listing	
<b>GRI102: General Disclosures</b>					
<b>5. Stakeholder engagement</b>					
102-40	List of stakeholder groups	P.13~14	Idemitsu Group's Sustainability • Dialogue with Stakeholders	P.18	Idemitsu Group's Sustainability • Dialogue with Stakeholders
102-43	Approach to stakeholder engagement	P.13~14	Idemitsu Group's Sustainability • Dialogue with Stakeholders	P.18	Idemitsu Group's Sustainability • Dialogue with Stakeholders
102-46	Defining report content and topic Boundaries	P.3	Scope of the Reporting	P.2	Scope of the Reporting
102-47	List of material topics	P.11~12 P.18	Idemitsu Group's Sustainability Response to Climate Change • Scenario Analysis • Risks and Opportunities	P.15~18	Idemitsu Group's Sustainability
102-49	Changes in reporting	P.3	Editorial Policy	P.2	Editorial Policy
102-50	Reporting period	P.3	Reporting period	P.2	Reporting period
102-51	Date of most recent report	P.3	Publication Information	P.2	Publication Information
102-52	Reporting cycle	P.3	Publication Information	P.2	Publication Information
102-53	Contact point for questions regarding the report	P.3	Contact point for inquiries about Idemitsu Sustainability Report	P.2	Contact point for inquiries about Idemitsu Integrated Report
102-54	Claims of reporting in accordance with the GRI Standards	P.3	Reference Guidelines	P.2	Reference Guidelines
102-55	GRI content index	P.78~87 P.88~89	Comparative Table with GRI Standards Comparative Table with ISO26000	-	
102-56	External assurance	P.90	Independent Practitioner's Assurance Report	-	
<b>GRI103: Management Approach</b>					
103-1	Explanation of the material topic and its Boundary	P.11~12 P.18	Idemitsu Group's Sustainability Response to Climate Change • Scenario Analysis • Risks and Opportunities	P.15~18	Idemitsu Group's Sustainability
103-2	The management approach and its components	P.7~9 P.11~12	Medium-term Management Plan Idemitsu Group's Sustainability	P.11~14 P.15~18	Medium-term Management Plan Idemitsu Group's Sustainability
103-3	Evaluation of the management approach	P.7~9 P.11~12	Medium-term Management Plan Idemitsu Group's Sustainability	P.11~14 P.15~18	Medium-term Management Plan Idemitsu Group's Sustainability



## Comparative Table with GRI Standards

## Economic

		Idemitsu Sustainability Report 2019 Page Listing		Idemitsu Integration Report 2019 Page Listing	
<b>GRI201: Economic Performance</b>					
201-2	Financial implications and other risks and opportunities due to climate change	P.11 P.18	Idemitsu Group's Sustainability · Relationship Between Priority Topics (Materialities) and SDGs Response to Climate Change · Scenario Analysis · Risks and Opportunities	P.15~16	Idemitsu Group's Sustainability · Relationship Between Priority Topics (Materialities) and SDGs
<b>GRI203: Indirect Economic Impacts</b>					
203-1	Infrastructure investments and services supported	P.45~48	Social Contribution Activities	-	
<b>GRI205: Anti-corruption</b>					
205-2	Communication and training about anti-corruption policies and procedures	P.56~57	Compliance	P.55~56	Compliance
205-3	Confirmed incidents of corruption and actions taken	P.57	Compliance · Compliance Promotion Activities	P.56	Compliance · Compliance Promotion Activities



## Comparative Table with GRI Standards

Environmental		Idemitsu Sustainability Report 2019 Page Listing		Idemitsu Integration Report 2019 Page Listing	
<b>GRI301: Materials</b>					
301-2	Recycled input materials used	P.23~24	Response to Circular Economy	-	
<b>GRI302: Energy</b>					
302-1	Energy consumption within the organization	P.17 P.61~63 P.65~67	Overview of Environmental Impacts Through Our Business Activities Overview of Environmental Impacts (Idemitsu) Overview of Environmental Impacts (Showa Shell)	-	
302-3	Energy intensity	P.17 P.61~63 P.65~67	Overview of Environmental Impacts Through Our Business Activities Overview of Environmental Impacts (Idemitsu) Overview of Environmental Impacts (Showa Shell)	-	
<b>GRI303: Water and Effluents</b>					
303-1	Interactions with water as a shared resource	P.25	Water Management	-	
303-2	Management of water discharge-related impacts	P.29	Pollution Prevention • Measures to Prevent Water and Marine Pollution	-	
303-3	Water withdrawal	P.64 P.69	Amount of Water Resources Used, Water Recycling Rate (Idemitsu) Amount of Water Resources Used, Water Recycling Rate (Showa Shell)	-	
303-4	Water discharge	P.64 P.69	Amount of Water Resources Used, Water Recycling Rate (Idemitsu) Amount of Water Resources Used, Water Recycling Rate (Showa Shell)	-	
303-5	Water consumption	P.64 P.69	Amount of Water Resources Used, Water Recycling Rate (Idemitsu) Amount of Water Resources Used, Water Recycling Rate (Showa Shell)	-	
<b>GRI304: Biodiversity</b>					
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	P.26 P.27 P.48	Conservation of Biodiversity Land Use Change Social Contribution Activities	-	
304-2	Significant impacts of activities, products, and services on biodiversity	P.26 P.27 P.48	Conservation of Biodiversity Land Use Change Social Contribution Activities	-	
304-3	Habitats protected or restored	P.26 P.27 P.48	Conservation of Biodiversity Land Use Change Social Contribution Activities	-	
304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	P.26 P.48	Conservation of Biodiversity Social Contribution Activities	-	



## Comparative Table with GRI Standards

Environmental		Idemitsu Sustainability Report 2019 Page Listing		Idemitsu Integration Report 2019 Page Listing	
<b>GRI305: Emissions</b>					
305-1	Direct (Scope 1) GHG emissions	P.17 P.19 P.61~63 P.65~68	Overview of Environmental Impacts Through Our Business Activities Response to Climate Change • Concept of Climate Change Mitigation Overview of Environmental Impacts, CO <sub>2</sub> Emissions by Scope (Idemitsu) Overview of Environmental Impacts, CO <sub>2</sub> Emissions by Scope (Showa Shell)	P.43~44	Natural Capital
305-2	Energy indirect (Scope 2) GHG emissions	P.17 P.19 P.61~63 P.65~68	Overview of Environmental Impacts Through Our Business Activities Response to Climate Change • Concept of Climate Change Mitigation Overview of Environmental Impacts, CO <sub>2</sub> Emissions by Scope (Idemitsu) Overview of Environmental Impacts, CO <sub>2</sub> Emissions by Scope (Showa Shell)	P.43~44	Natural Capital
305-3	Other indirect (Scope 3) GHG emissions	P.17 P.19 P.61~63 P.65~68	Overview of Environmental Impacts Through Our Business Activities Response to Climate Change • Concept of Climate Change Mitigation Overview of Environmental Impacts, CO <sub>2</sub> Emissions by Scope (Idemitsu) Overview of Environmental Impacts, CO <sub>2</sub> Emissions by Scope (Showa Shell)	P.43~44	Natural Capital
305-4	GHG emissions intensity	P.19	Response to Climate Change • CO <sub>2</sub> Reduction Targets and Monitoring Indicators	P.43~44	Natural Capital
305-5	Reduction of GHG emissions	P.19	Response to Climate Change • Concept of Climate Change Mitigation	-	
305-6	Emissions of ozone-depleting substances (ODS)	P.28	Management of Chemical Substances and Reduction of Hazardous Substances	-	
305-7	"Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions"	P.17 P.29 P.61~63 P.65~67	Overview of Environmental Impacts Through Our Business Activities Pollution Prevention • Measures to Prevent Air Pollution Overview of Environmental Impacts (Idemitsu) Overview of Environmental Impacts (Showa Shell)	-	
<b>GRI306: Effluents and Waste</b>					
306-1	Water discharge by quality and destination	P.17 P.61~63 P.65~67	Overview of Environmental Impacts Through Our Business Activities Overview of Environmental Impacts (Idemitsu) Overview of Environmental Impacts (Showa Shell)	-	
306-2	Waste by type and disposal method	P.24 P.64 P.68	Waste Reduction Waste (Idemitsu) Waste (Showa Shell)	-	
306-3	Significant spills	P.64 P.69	Number of Environmental Accidents (Idemitsu) Number of Environmental Accidents (Showa Shell)	-	
306-4	Transport of hazardous waste	P.28	Management of Chemical Substances and Reduction of Hazardous Substances	-	
306-5	Water bodies affected by water discharges and/or runoff	P.25	Water Management	-	
<b>GRI307: Environmental Compliance</b>					
307-1	Non-compliance with environmental laws and regulations	P.64 P.69	Number of Environmental Accidents (Idemitsu) Number of Environmental Accidents (Showa Shell)	-	



## Comparative Table with GRI Standards

## Social

		Idemitsu Sustainability Report 2019 Page Listing		Idemitsu Integration Report 2019 Page Listing	
<b>GRI401: Employment</b>					
401-1	New employee hires and employee turnover	P.33 P.70 P.71 P.73	Creating a Workplace Where Diverse Employees Can Create Together and Hiring Human Resources • Status of Recruitment Status of Recruitment Status of Employees and Recruitment (Idemitsu) Status of Employees and Recruitment (Showa Shell)	P.35	Organization and Human Capital • Status of Recruitment
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	P.32 P.72 P.74	Stimulating Self-Growth Motivation and Providing Growth Opportunities Training Results (Idemitsu) Training Results (Showa Shell)	-	
401-3	Parental leave	P.37 P.71 P.73	Establishment of Personnel Systems That are Rewarding and That Enable Employees to Focus on Their Work with Peace of Mind • Expansion of systems to promote D&I Work-Life Balance Support Systems and Usage Numbers (Idemitsu) Work-Life Balance Support Systems and Usage Numbers (Showa Shell)	-	
<b>GRI403: Occupational Health and Safety</b>					
403-1	Occupational health and safety management system	P.39	Ensuring Safety • System for Promoting HSSE Initiatives	P.57	Ensuring Safety • System for Promoting HSSE Initiatives
403-2	Hazard identification, risk assessment, and incident investigation	P.39~41	Ensuring Safety	P.57~58	Ensuring Safety
403-3	Occupational health services	P.38	Promotion of Employees' Health	-	
403-4	Worker participation, consultation, and communication on occupational health and safety	P.39~41	Ensuring Safety	P.57~58	Ensuring Safety
403-5	Worker training on occupational health and safety	P.40~41	Ensuring Safety • Safety Education	-	
403-6	Promotion of worker health	P.38	Promotion of Employees' Health	-	
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	P.39~41	Ensuring Safety	-	
403-8	Workers covered by an occupational health and safety management system	P.39	Ensuring Safety • System for Promoting HSSE Initiatives	P.57	Ensuring Safety • System for Promoting HSSE Initiatives
403-9	Work-related injuries	P.39 P.72 P.74	Ensuring Safety • Activities and Results Based on the Annual Basic Policies on HSSE Work-Related Accidents (Idemitsu) Work-Related Accidents (Showa Shell)	P.57~58	Ensuring Safety • Activities and Results Based on the Annual Basic Policies on HSSE



## Comparative Table with GRI Standards

## Social

		Idemitsu Sustainability Report 2019 Page Listing		Idemitsu Integration Report 2019 Page Listing	
403-10	Work-related ill health	P.36 P.38 P.71 P.74	Establishment of Personnel Systems That are Rewarding and That Enable Employees to Focus on Their Work with Peace of Mind • Promotion of Diverse and Flexible Working Styles Promotion of Employees' Health Overtime Work and Annual Paid Leave (Idemitsu) Overtime Work and Annual Paid Leave (Showa Shell)	-	
<b>GRI404: Training and Education</b>					
404-1	Average hours of training per year per employee	P.32 P.72 P.74	Stimulating Self-Growth Motivation and Providing Growth Opportunities Training Results (Idemitsu) Training Results (Showa Shell)	-	
404-2	Programs for upgrading employee skills and transition assistance programs	P.31 P.32	Human Resources Policy • Basic Concept of Personnel Strategy Stimulating Self-Growth Motivation and Providing Growth Opportunities	P.34	Organization and Human Capital • Basic Concept of Personnel Strategy
404-3	Percentage of employees receiving regular performance and career development reviews	P.36	Establishment of Personnel Systems That are Rewarding and That Enable Employees to Focus on Their Work with Peace of Mind • Fair Evaluation and Compensation	-	
<b>GRI405: Diversity and Equal Opportunity</b>					
405-1	Diversity of governance bodies and employees	P.33, 70 P.53 P.75	Employment Situation and Status of Employees Corporate Governance • Changes in Corporate Governance Structure Composition of Executive	P.52	Corporate Governance • Changes in Corporate Governance Structure
<b>GRI406: Non-discrimination</b>					
406-1	Incidents of discrimination and corrective actions taken	P.56	Compliance • Establishment of Consultation Center	P.55	Compliance • Establishment of Consultation Center
<b>GRI410: Security Practices</b>					
410-1	Security personnel trained in human rights policies or procedures	P.40~41	Ensuring Safety • Safety Education	-	
<b>GRI412: Human Rights Assessment</b>					
412-2	Employee training on human rights policies or procedures	P.34	Creating a Workplace Where Diverse Employees Can Create Together and Hiring Human Resources • Diversity and Inclusion (D&I) Training and Other Activities	-	



## Comparative Table with GRI Standards

Social		Idemitsu Sustainability Report 2019 Page Listing		Idemitsu Integration Report 2019 Page Listing	
<b>GRI413: Local Communities</b>					
413-1	Operations with local community engagement, impact assessments, and development programs	P.45~48	Social Contribution Activities	-	
<b>GRI416: Customer Health and Safety</b>					
416-1	Assessment of the health and safety impacts of product and service categories	P.42	Quality Control and Quality Assurance • Quality Control and Quality Assurance System	-	
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	P.42	Quality Control and Quality Assurance • Response to Complaints on Quality	-	
<b>GRI417: Marketing and Labeling</b>					
417-1	Requirements for product and service information and labeling	P.42	Quality Control and Quality Assurance • Providing Appropriate Product Safety Disclosure and Labeling	-	
417-2	Incidents of non-compliance concerning product and service information and labeling	P.42	Quality Control and Quality Assurance • Response to Complaints on Quality	-	
<b>GRI419: Socioeconomic Compliance</b>					
419-1	Non-compliance with laws and regulations in the social and economic area	P.57	Compliance • Compliance Promotion Activities	P.56	Compliance • Compliance Promotion Activities



## Comparative Table with ISO 26000

## Comparative Table with ISO 26000

Core Subjects and Issues	Idemitsu Sustainability Report 2019 Page Listing	Idemitsu Integrated Report 2019 Page Listing
Organizational governance 1: Organizational governance	P.4~6 Message from the President P.11~12 Idemitsu Group's Sustainability P.50~51 Directors and Audit & Supervisory Board Members P.52~55 Corporate Governance P.56~57 Compliance P.57~58 Risk Management P.59~60 Intellectual Property	P.7~10 Message from the President P.15~18 Idemitsu Group's Sustainability P.40 Intellectual Capital • Utilization of Intellectual Property P.47~50 Directors and Audit & Supervisory Board Members P.51~54 Corporate Governance P.55~56 Compliance P.56 Risk Management
Human rights 1: Due diligence 2: Human rights risk situations 3: Avoidance of complicity 4: Resolving grievances 5: Discrimination and vulnerable groups 6: Civil and political rights 7: Economic, social and cultural rights 8: Fundamental principles and rights at work	P.30 Human Resources Policy P.34 Creating a Workplace Where Diverse Employees Can Create Together and Hiring Human Resources • Promotion of Activities by All Employees (Promotion of D&I) • Diversity and Inclusion (D&I) Training and Other Activities P.38 Promotion of Employees' Health P.39~41 Ensuring Safety P.45~48 Social Contribution Activities P.56~57 Compliance P.57~58 Risk Management	P.33, 35 Organization and Human Capital • Human Resources Policy • Promotion of Activities by All Employees (Promotion of D&I) P.55~56 Compliance P.56 Risk Management P.57~58 Ensuring Safety
Labour practices 1: Employment and employment relationships 2: Conditions of work and social protection 3: Social dialogue 4: Health and safety at work 5: Human development and training in the workplace	P.13~14 Idemitsu Group's Sustainability Dialogue with Stakeholders P.30~31 Human Resources Policy P.32 Stimulating Self-Growth Motivation and Providing Growth Opportunities P.33~34 Creating a Workplace Where Diverse Employees Can Create Together and Hiring Human Resources P.35 Efforts to Improve Workplace Culture and Motivation P.36~37 Establishment of Personnel Systems That are Rewarding and That Enable Employees to Focus on Their Work with Peace of Mind P.38 Promotion of Employees' Health P.39~41 Ensuring Safety P.56~57 Compliance	P.18 Idemitsu Group's Sustainability • Dialogue with Stakeholders P.33~36 Organization and Human Capital P.55~56 Compliance P.57~58 Ensuring Safety
The environment 1: Prevention of pollution 2: Sustainable resource use 3: Climate change mitigation and adaptation 4: Protection of the environment, biodiversity and restoration of natural habitats	P.15~16 Environmental Management / Environmental Policy P.17 Overview of Environmental Impacts Through Our Business Activities P.18~23 Response to Climate Change P.23~24 Response to Circular Economy P.24 Waste Reduction P.25 Water Management P.26~27 Conservation of Biodiversity P.27 Land Use Change P.28 Management of Chemical Substances and Reduction of Hazardous Substances P.29 Pollution Prevention	P.21~32 Value Creation Initiatives P.43~44 Natural Capital





## Comparative Table with ISO 26000

## Comparative Table with ISO 26000

## Core Subjects and Issues

## Idemitsu Sustainability Report 2019 Page Listing

## Idemitsu Integrated Report 2019 Page Listing

## Fair operating practices

- 1: Anti-corruption
- 2: Responsible political involvement
- 3: Fair competition
- 4: Promoting social responsibility in the value chain
- 5: Respect for property rights

- P.43-44 Collaboration with Partners  
 P.52-55 Corporate Governance  
 P.56-57 Compliance  
 P.57-58 Risk Management  
 P.59-60 Intellectual Property

- P.37-38 Social and Relationship Capital  
 P.39-40 Intellectual Capital  
 P.51-54 Corporate Governance  
 P.55-56 Compliance  
 P.56 Risk Management  
 P.58 Quality Control and Quality Assurance

## Consumer issues

- 1: Fair marketing, factual and unbiased information and fair contractual practices
- 2: Protecting consumers' health and safety
- 3: Sustainable consumption
- 4: Consumer service, support, and complaint and dispute resolution
- 5: Consumer data protection and privacy
- 6: Access to essential services
- 7: Education and awareness

- P.13-14 Idemitsu Group's Sustainability  
 • Dialogue with Stakeholders  
 P.15-16 Environmental Management / Environmental Policy  
 P.18-23 Response to Climate Change  
 P.23-24 Response to Circular Economy  
 P.28 Management of Chemical Substances and Reduction of Hazardous Substances  
 P.42 Quality Control and Quality Assurance  
 P.52-55 Corporate Governance  
 P.56-57 Compliance  
 P.57-58 Risk Management

- P.18 Idemitsu Group's Sustainability  
 • Dialogue with Stakeholders  
 P.39-40 Intellectual Capital  
 P.43-44 Natural Capital  
 P.51-54 Corporate Governance  
 P.55-56 Compliance  
 P.56 Risk Management  
 P.58 Quality Control and Quality Assurance

## Community involvement and development

- 1: Community involvement
- 2: Education and culture
- 3: Employment creation and skills development
- 4: Technology development and access
- 5: Wealth and income creation
- 6: Health
- 7: Social investment

- P.22 Idemitsu Group's Technologies Underpinning Innovation  
 P.33-34 Creating a Workplace Where Diverse Employees Can Create Together and Hiring Human Resources  
 P.35 Efforts to Improve Workplace Culture and Motivation  
 P.38 Promotion of Employees' Health  
 P.45-48 Social Contribution Activities  
 P.56 Compliance  
 • Establishment of Consultation Center

- P.18 Idemitsu Group's Sustainability  
 • Dialogue with Stakeholders  
 P.33-36 Organization and Human Capital  
 P.39-40 Intellectual Capital  
 P.55 Compliance  
 • Establishment of Consultation Center



## Independent Practitioner's Assurance Report

**Deloitte.**

デロイト トーマツ

(TRANSLATION)

Independent Practitioner's Assurance Report

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We have undertaken a limited assurance engagement of the ESG data indicated with  for both the year ended March 31, 2019 and March 31, 2020 (the "Sustainability Information") included in the "Idemitsu Sustainability Report 2019" (the "Report") of Idemitsu Kosan Co., Ltd. (the "Company").

The Company's Responsibility

The Company is responsible for the preparation of the Sustainability Information in accordance with the calculation and reporting standard adopted by the Company (as described on ESG Data Collection and indicated with the Sustainability Information of the Report). Greenhouse gas quantification is subject to inherent uncertainty for reasons such as incomplete scientific knowledge used to determine emissions factors and numerical data needed to combine emissions of different gases.

Our Independence and Quality Control

We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior. We apply International Standard on Quality Control 1, *Quality Control for Firms that Perform Audits and Reviews of Financial Statements, and Other Assurance and Related Services Engagements*, and accordingly maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Our Responsibility

Our responsibility is to express a limited assurance conclusion on the Sustainability Information based on the procedures we have performed and the evidence we have obtained. We conducted our limited assurance engagement in accordance with the International Standard on Assurance Engagements ("ISAE") 3000, *Assurance Engagements Other than Audits or Reviews of Historical Financial Information*, issued by the International Auditing and Assurance Standards Board ("IAASB"), ISAE 3410, *Assurance Engagements on Greenhouse Gas Statements*, issued by the IAASB and the *Practical Guideline for the Assurance of Sustainability Information*, issued by the Japanese Association of Assurance Organizations for Sustainability Information.

The procedures we performed were based on our professional judgment and included inquiries, observation of processes performed, inspection of documents, analytical procedures, evaluating the appropriateness of quantification methods and reporting policies, and agreeing or reconciling with underlying records. These procedures also included the following:

- Evaluating whether the Company's methods for estimates are appropriate and had been consistently applied. However, our procedures did not include testing the data on which the estimates are based or reperforming the estimates.
- Undertaking site visits to assess the completeness of the data, data collection methods, source data and relevant assumptions applicable to the sites.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had we performed a reasonable assurance engagement.

Limited Assurance Conclusion

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the Sustainability Information is not prepared, in all material respects, in accordance with the calculation and reporting standard adopted by the Company.

The above represents a translation, for convenience only, of the original Independent Practitioner's Assurance report issued in the Japanese language.

Member of  
Deloitte Touche Tohmatsu Limited