



Our Response to Climate Change

To prevent global warming, which is one cause of climate change, we are advancing energy conservation in our business activities, including in production and transport and through the provision of products and services that help save energy at the consumer consumption stage. Also, we are striving to further reduce CO₂ emissions and develop the renewable energy production business.

Advancement of Energy Conservation in Our Business Activities

By encouraging energy conservation in our business activities, we help reduce environmental impact through lower emissions of CO₂ and other greenhouse gases, sulfur oxides (SOx), and nitrogen oxides (NOx) while saving energy resources and cutting supply costs to contribute to the creation of a sustainable society.

Issues/Targets and Results

<Energy conservation in the manufacturing sector>

P	Fiscal 2017 Targets	D	Results	C	A	Evaluation/ Improvements	P	Fiscal 2018 Targets (Plan)
•	Reduce unit energy consumption by an average of 1% between fiscal 2013 and 2017	Unit energy consumption: 8.79 l/kl (0.3% average decrease) at refineries and 0.406 kl/t (4.2% average increase) at petrochemical plants	•	Goal not achieved for petrochemical plants or refineries due mainly to unplanned suspensions	•	Reduce unit energy consumption by an average of 1% between fiscal 2014 and 2018		

<Energy conservation in domestic transportation>

P	Fiscal 2017 Targets	D	Results	C	A	Evaluation/ Improvements	P	Fiscal 2018 Targets (Plan)
•	Reduce unit energy consumption by an average of 1% between fiscal 2013 and 2017	As a result of continuing with such measures from fiscal 2016 as making full use of large vessels, unit energy consumption was 8.65 kl/million t-km (1.3% average decrease).	•	Goal achieved	•	Reduce unit energy consumption by an average of 1% between 2014 and 2018		

Energy Conservation in the Manufacturing Sector

Idemitsu's refineries and petrochemical plants account for a significant portion of the total energy consumption of the Idemitsu Group. Therefore, energy conservation activities undertaken at the Group's refineries and petrochemical plants contribute significantly to the reduction of greenhouse gas emissions. Because petroleum products and petrochemicals are directly connected with daily life and industrial activities, we need to stably supply said items in volumes commensurate with the level of demand. Accordingly, our approach to energy conservation is not predicated on a reduction in total energy consumption volume but on efforts to lower unit energy consumption.

Based on the Act on the Rational Use of Energy, we are targeting an average 1% annual reduction in unit energy consumption in the medium term. Fiscal 2017 unit energy consumption was 8.79 l/kl at refineries and 0.406 kl/t at the petrochemical plants. At refineries, consumption fell 0.3% on average for the year. The energy conservation attained by upgrading equipment

and improving operations is clearly having a lowering effect on unit consumption. Going forward, we will continue working to achieve our goal by promoting initiatives aimed at ensuring safe operations and energy conservation reforms. However, the annual average increased 4.2% at the petrochemical plants, but this was largely attributable to the change in the balance of services after crude oil processing at the Tokuyama Refinery had been suspended. Other negative factors included the decreased production and non-productive services rendered at the Chiba Complex (Chemicals) due to the planned suspension of two major pieces of equipment to conduct regular maintenance and upgrades.

■ Commitment to a Low Carbon Society

Amid the post-Kyoto Protocol environment, Nippon Keidanren (Japan Business Federation) formulated the Commitment to a Low Carbon Society action plan, which it has been implementing since 2013. Under the Commitment, the goals outlined for the Japanese petroleum and petrochemicals industries are as shown below. To help ensure that these goals are met, Idemitsu is advancing an energy conservation agenda at its refineries and petrochemical plants.

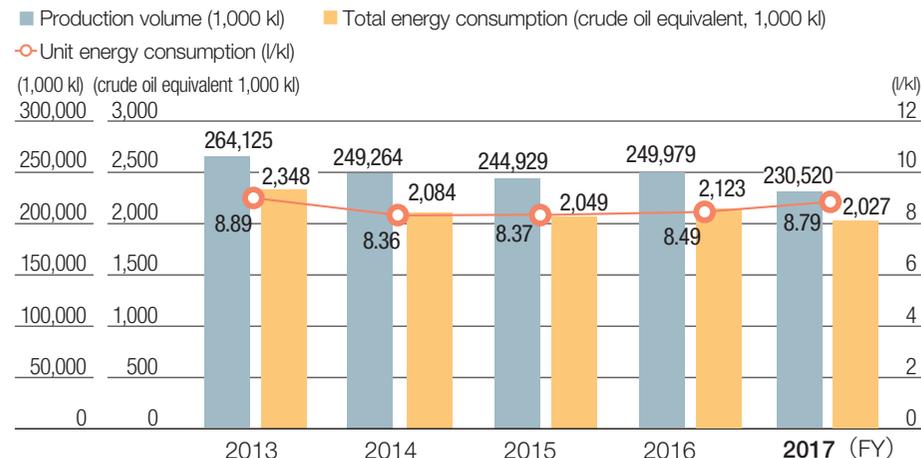
Industry Goals :

Petroleum Association of Japan: Cumulative energy savings equivalent to 530,000 kl of crude oil between fiscal 2010 and 2020.
 Japan Chemical Industry Association: Reduce annual CO₂ emissions in 2020 by 1,500,000 t from 2010 levels (based on levels before new measures were put in place).

Production Volumes, Total Energy Consumption (Crude Oil Equivalent) and Unit Energy Consumption at Refineries and Petrochemical



Refineries

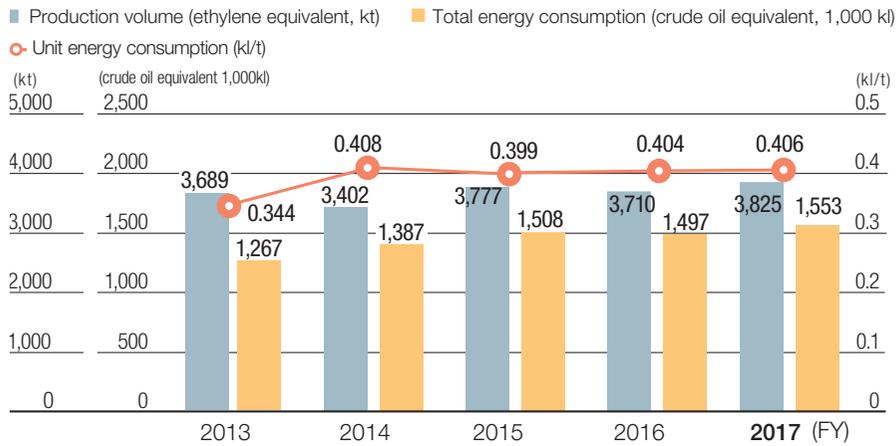


Scope of collection: Fiscal 2013: the Hokkaido, Chiba, Aichi and Tokuyama refineries. From fiscal 2014 to 2017: the Hokkaido Refinery, Chiba Complex (Chemicals) and Aichi Refinery

Note: As of October 2017, the Chiba Refinery and Chiba Petrochemical Plant have been integrated into the Chiba Complex. Within this report, "Chiba Complex" refers to the combined total of the previous Chiba Refinery and Chiba Petrochemical Plant; "Chiba Complex (Petroleum)" refers to the previous Chiba Refinery only; and "Chiba Complex (Chemicals)" refers to the previous Chiba Petrochemical Plant only.

Unit energy consumption (in liters per kiloliters) at refineries is calculated as follows: Total energy consumption (crude oil equivalent, in liters) ÷ Production volume of atmospheric distillation units (in kiloliters)

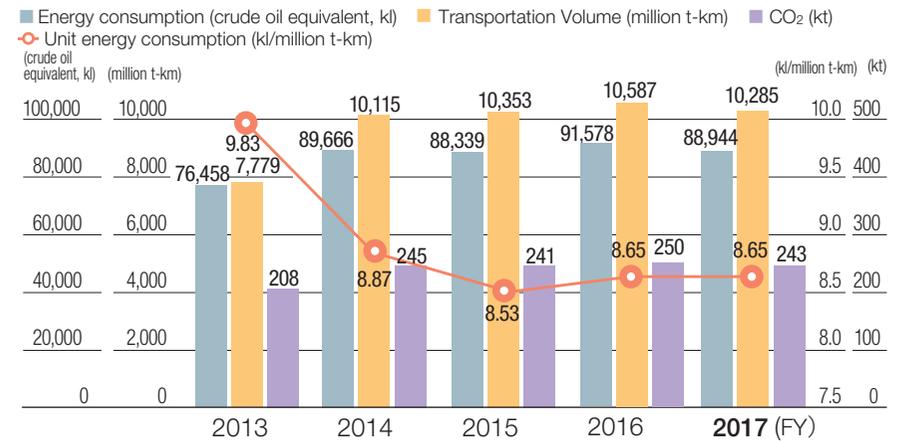
Petrochemical Plants



Scope of collection: Fiscal 2013: the Chiba and Tokuyama petrochemical plants, Prime Polymer Co., Ltd.'s Anesaki Works, and Cray Valley Idemitsu Corporation. From fiscal 2014 to 2017: the Chiba Complex (Chemicals), Tokuyama Complex, Prime Polymer Co., Ltd.'s Anesaki Works, and Cray Valley Idemitsu Corporation
 Note: As of October 2017, the Chiba Refinery and Chiba Petrochemical Plant have been integrated into the Chiba Complex. Within this report, "Chiba Complex" refers to the combined total of the previous Chiba Refinery and Chiba Petrochemical Plant; "Chiba Complex (Petroleum)" refers to the previous Chiba Refinery only; and "Chiba Complex (Chemicals)" refers to the previous Chiba Petrochemical Plant only.
 Unit energy consumption (in kiloliters per ton) at petrochemical plants is calculated as follows: Total energy consumption (crude oil equivalent, in kiloliters) ÷ Production volume (ethylene equivalent, in tons)

CO₂ Emissions as Consignor

Independent Practitioner's Assurance



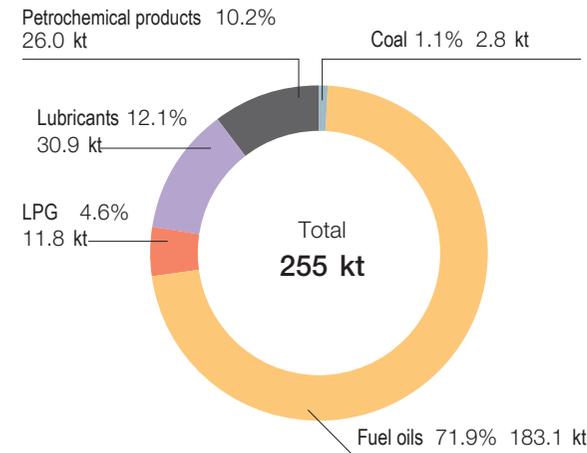
Scope of tabulation: Idemitsu Kosan Co., Ltd.;
 LPG not included because a different method of calculation is used

Energy Conservation in the Domestic Transport Sector

In accordance with the Act on the Rational Use of Energy, Idemitsu is working toward a target of reducing unit energy consumption by 1% annually on average over the medium to long term. To achieve this goal, we encourage energy conservation in the transport sector (as a consignor) by promoting large-sized shipping lots on inland tankers and tanker trucks as well as by eliminating operational inefficiencies resulting from nonshipment. Distance traveled and energy used for the maritime transport of fuel oil have increased since the suspension of crude oil processing at the Tokuyama Refinery (now Tokuyama Complex), but we have been advancing efforts to improve distribution efficiency through the use of larger shipping lots and optimization of shipping bases. In fiscal 2017, we continued efforts advanced in fiscal 2016 to maximize the use of larger vessels; as a result, unit energy consumption stood at 8.65 kl crude oil equivalent per million t-km and we reached our goal of a 1.0% reduction in average annual unit energy consumption.

Breakdown of FY2017 CO₂ Emissions as Consignor

Independent Practitioner's Assurance



Scope of tabulation: Idemitsu Kosan Co., Ltd. and Astomos Energy Corporation.
 The figures for Astomos Energy are calculated in proportion to Idemitsu's stake (51%).

Energy Conservation in the Ocean-Going Transportation Sector

Idemitsu Tanker, which handles the Group's oceangoing transportation sector, operates 18 tankers, including both owned and long-term chartered vessels. Of that number, the company engages in the ship management*1 of a total of seven tankers. The vessel Nissho Maru, built in fiscal 2004, minimizes energy loss through the use of contra-rotating propellers. The Idemitsu Maru, built in fiscal 2007, is equipped with additional thrusting fins fitted to each side of its helm in addition to an electronically controlled engine (flex engine) for fuel-efficient operation. The APOLLO DREAM, which was constructed in 2014, is equipped with the latest energy conservation technology, including a semicircular duct*2 and SURF-BULB,*3 while featuring an up-to-date electronically controlled engine and an improved hull configuration. As a result, the vessel delivers about 13% better fuel efficiency than the IDEMITSU MARU. Exhaust gas economizers, which are currently installed in all our ships under management, recover exhaust heat from the main engine system to help the boilers generate steam. This enables the steam turbine electric generator system to provide nearly all the onboard power needed while the ships are at sea. Moreover, we actively promote slower tanker speeds and, in our day-to-day transport operations, strive to reduce fuel consumption and conserve energy through efficient ship assignment, setting such targets as reducing demurrage to less than one and a half days.



Semicircular duct (source: [Japan Marine United Corporation](#))



SURF-BULB (source: [Japan Marine United Corporation](#))

*1 Ship management: To maintain a vessel and register its ship classification, which is required to actually operate a ship at sea, and to operate said vessel, ensuring its fully seaworthy state by providing necessary crew as well as stores, lubricants and other expendables. Number of tankers is as of March 31, 2018.

*2 Semicircular duct: A device used to improve fuel efficiency by around 3% to 8% by recovering the energy of longitudinal vortices, which are created near the stern, to produce thrust.

*3 Swept-back Up-thrusting Rudder Fin (SURF) with BULB. A device used to improve fuel efficiency by around 3% to 5% by recovering the energy of the hub vortex, which is created behind the propeller, to produce thrust.

[Idemitsu Tanker](#)

Energy Conservation at Service Stations

To reduce CO₂ emissions from service stations, Idemitsu had switched to LEDs for lighting for 1,343 sign poles at its 3,545 Idemitsu service stations (as of the end of March 2018) throughout Japan.

The Idemitsu Group's Greenhouse Gas Emissions

Within the Idemitsu Group, business sites categorized as specified emitters as outlined in the Act on Promotion of Global Warming Countermeasures comprise the lubricant blend factories, performance chemicals factories and plastic processing factories of Idemitsu and its consolidated subsidiaries as well as a number of fuel oil sales subsidiaries. CO₂ from energy consumption makes up the majority of greenhouse gases emitted in Japan by the Idemitsu Group, with over 99% being emitted by manufacturing divisions.

Breakdown of FY2017 Greenhouse Gas Emissions

Independent Practitioner's Assurance

Category	Actual Emissions (1,000 t-CO ₂ equivalent)	Breakdown of Actual Emissions		Adjusted Emissions* ⁴ (1,000 t-CO ₂ equivalent)
		Energy sources CO ₂ (1,000 t-CO ₂)	Other GHG (1,000 t-CO ₂ equivalent)	
Manufacturing Dept.* ⁵	7,379	7,245	135	7,378
Logistics Dept.* ⁶	17	17	0	19
Administration Dept.* ⁷	4	4	0	4
Research Dept.* ⁸	12	11	0	11
Total	7,412	7,277	135	7,413

Note: Figures are rounded off and therefore may not exactly match the totals shown.

*4 Adjusted emissions: CO₂ emissions are calculated using an adjusted emission factor that reflects Kyoto mechanism credits and domestic certified emission reduction (credits) under the Act on Promotion of Global Warming Countermeasures.

*5 The Hokkaido Refinery, Chiba Complex (Petroleum), Aichi Refinery, Chiba Complex (Chemicals), Tokuyama Complex, Omaezaki Factory, Prime Polymer Co., Ltd.'s Anesaki Works, Cray Valley Idemitsu Corporation, Idemitsu Unitech Co., Ltd., BASF Idemitsu Co., Ltd., LION IDEMITSU COMPOSITES CO., LTD, Idemitsu Lube Techno Co., Ltd., Union Oil Industry Co., Ltd., SDS Biotech K.K. (As of October 2017, the Chiba Refinery and Chiba Petrochemical Plant have been integrated into the Chiba Complex. Within this report, "Chiba Complex" refers to the combined total of the previous Chiba Refinery and Chiba Petrochemical Plant; "Chiba Complex (Petroleum)" refers to the previous Chiba Refinery only; and "Chiba Complex (Chemicals)" refers to the previous Chiba Petrochemical Plant only.)

*6 Oil depots, fuel oil and lubricant shipping centers and Idemitsu Retail Marketing Co., Ltd.

*7 Head Office, retail branches, operational branches, training centers

*8 Advanced Technology Research Laboratories, Coal & Environment Research Laboratory, Lubricants Research Laboratory, Performance Materials Laboratories



The Idemitsu Group's FY2017 Greenhouse Gas Emissions by GHG Protocol Scope

Independent Practitioner's Assurance 

Department	Greenhouse Gas Emissions by GHG Protocol Scope (1,000 t-CO ₂ equivalent)			
	Scope 1 ¹⁹	Scope 2	Scope 3	Total
Manufacturing Dept. ¹⁵	7,056	324	0	7,379
Logistics Dept. ¹⁶	15	2	0	17
Administration Dept. ¹⁷	2	2	0	4
Research Dept. ¹⁸	10	1	0	12
Total	7,083	329	0	7,412

Note: Figures are rounded off and therefore may not exactly match the totals shown.

¹⁵ The Hokkaido Refinery, Chiba Complex (Petroleum, Chemical), Aichi Refinery, Tokuyama Complex, Omaezaki Factory, Prime Polymer Co., Ltd.'s Anesaki Works, Cray Valley Idemitsu Corporation, Idemitsu Unitech Co., Ltd, BASF Idemitsu Co., Ltd., LION IDEMITSU COMPOSITES CO., LTD, Idemitsu Lube Techno Co., Ltd., Union Oil Industry Co., Ltd., SDS Biotech K.K. (As of October 2017, the Chiba Refinery and Chiba Petrochemical Plant have been integrated into the Chiba Complex. Within this report, "Chiba Complex" refers to the combined total of the previous Chiba Refinery and Chiba Petrochemical Plant; "Chiba Complex (Petroleum)" refers to the previous Chiba Refinery only; and "Chiba Complex (Chemicals)" refers to the previous Chiba Petrochemical Plant only.)

¹⁶ Oil depots, fuel oil and lubricant shipping centers and Idemitsu Retail Marketing Co., Ltd.

¹⁷ Head Office, retail branches, operational branches, training centers

¹⁸ Advanced Technology Research Laboratories, Coal & Environment Research Laboratory, Lubricants Research Laboratory, Performance Materials Laboratories

¹⁹ Greenhouse gases other than CO₂ are calculated entirely as under Scope 1.

Contributing to GHG Reduction at the Consumption Stage

Fuel oils account for the majority of Idemitsu's petroleum products, while around 90% of the CO₂ generated throughout their life cycles,*10 from crude oil extraction to consumption, is generated when the fuel oils are consumed by customers. For this reason, we have been providing energy-saving technologies, products and services with lower CO₂ emissions and promoting our renewable energy business as another important mission of Idemitsu.

*10 Life cycle: A series of stages from raw material (crude oil) extraction to consumption by users and disposal as waste

Providing Energy-Saving Products and Services

Issues/Targets and Results

Expanding eco-friendly products and services

P	Fiscal 2017 Targets	D	Results	C	A	Evaluation/ Improvements	P	Fiscal 2018 Targets (Plan)
	Fiscal 2016 Targets Results Evaluation/ Electronic materials: Expand sales volume of OLED materials, organic photoreceptor resin and inorganic electronic materials		Increased by over 100% vs. fiscal 2016			Goal achieved		Expand sales volume of OLED materials, organic photoreceptor resin and inorganic electronic materials
	Agricultural biotechnology: Begin new sales: Environmental greening fields: 1 product Livestock field: 1 product		No new sales			Strengthened product development framework to conduct routine research and development		Agricultural biotechnology: Begin new sales: Environmental greening fields: 1 product Livestock field: 2 products

Fuel oils

For customers with oil-fired boilers, we use "thermal diagnostics" to provide recommendations on operating conditions and operating methods that improve combustion efficiency. In addition, we offer pre-mixed combustion technologies for liquid by-products generated at various factories, including used cooking oil, to achieve greater energy savings and lower CO₂ emissions. In fiscal 2017, we provided 3,181 improvement proposals.

Coal

In 1988, Idemitsu established the Coal Research Office (currently the Coal & Environment Research Laboratory). We worked to develop high-efficiency combustion technologies that reduce the environmental impact of using coal and reduce the amount of coal used. We currently offer customers using coal, including overseas customers, ways to optimize blends of coal types and operation schemes for boilers using incineration simulations and the "Idemitsu Coal Assessment System." In addition, we are working to develop technology that can burn woody biomass and coal simultaneously with high efficiency as an environment-friendly low-carbon solution. If we are able to burn between 30% and 50% woody biomass, which is a renewable energy resource, along with coal, we can reduce CO₂ emissions by that same amount.

TOPICS: Promoting Energy Conservation through ULTY-V plus™, a Control Optimization System for Boilers Featuring AI and IoT Functions

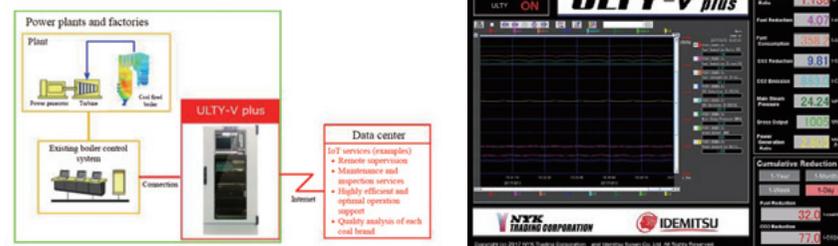
Idemitsu, along with NYK Trading Corporation and NYK Line, jointly developed ULTY-V plus™, which integrates AI and IoT technologies into a control optimization system for boilers.

It can be difficult to maintain stable control of the coal-fired boilers used at power plants and factories as temporary excesses or deficits in the fuel supply as well as a variety of other factors may impact operability. To help ensure stable plant operations via the optimizing of combustion controls, Idemitsu introduced ULTY-V plus™, a system that reduces fuel consumption.

In addition to its energy-saving technology, the system features fully automated AI functions that render it capable of independently handling more complicated series of actions such as measurement, analysis and decision making. The AI functions further improve control optimization system performance by enabling high-precision control of the boilers based on internally stored data and sensing minor changes over time in the properties of the boilers. The inclusion of IoT functions enables remote monitoring and coordinating functions through a network via on-site cameras and small data loggers.

Drawing on Idemitsu's highly efficient coal combustion and quality analysis technologies, we will continue developing various technologies and services, including operational guidance, to reduce our environmental footprint and secure further improvements to combustion and economic efficiency based on operational condition assessments of plants' control optimization systems and boiler data compiled in real time.

Image of features of the coal boiler control optimization system, ULTY-V plus™, equipped with AI and IoT





■ Functional materials

< Lubricants >

Our lubricants, which are a mix of highly refined low-viscosity base oil and high-performance additives, demonstrate fuel conservation and resource saving (longer service life) performance.

< Electronic Materials >

In the electronic materials field, we are manufacturing and selling long-lasting, low-power-consuming OLED materials for use in such devices as smartphones and OLED television displays.

[Electronic Materials](#)

< Agricultural Biotechnology >

We possess unique technologies that utilize microbial agents and natural products and are promoting the development of practical applications of said technologies. In the livestock field, we have commercialized functional feeds that preserve the health of livestock through new materials incorporating natural products. These functional feeds act on the digestive systems of livestock and are expected to have a secondary effect of reducing emissions of the GHG methane. In the agricultural greening field, we are engaged in research related to microbial agents and natural products that support the robust growth of plants even in various stressful environments caused by climate change. By continuing these efforts, we will contribute to sustainable food production and a lower impact on the global environment.

[Agricultural Biotechnology](#)

Developing Our Renewable Energy Business

Aiming to combat climate change and reduce our environmental impact, we operate an electric power business utilizing renewable energy (geothermal, biomass, solar, and wind).

Issues/Targets and Results

Promoting our renewable energy business

P	Fiscal 2017 Targets	D	Results	C	A	Evaluation/ Improvements	P	Fiscal 2018 Targets (Plan)
	Wind power business: Maintain stable operations at Rokkasho-Mura Futamata Wind Farm		Maintained stable operations and achieved zero accidents requiring time off work			Goal achieved		Maintain stable operations
	Solar power business: • Maintain stable operations at the four power stations		Maintained stable operations at the four power stations and achieved zero accidents requiring time off work			Goal achieved		Maintain stable operations
	Biomass power business: Maintain stable operations at the Tosa Power Station and the Ono Power Station		<ul style="list-style-type: none"> Maintained stable operations at the Tosa Power Station without any accidents that required time off work Began stable operations of the Ono Power Station and achieved zero accidents that required time off work 			Goal achieved		Maintain stable operations
	Electric power retail business: Expand sales of electric power from sources that include renewable energy (including FIT power)		<ul style="list-style-type: none"> Sales exceeded the previous year's figures 			Goal achieved		Expand sales of electric power from sources that include renewable energy (including FIT power)
	Overseas biofuel business: Cambodia: Sum up the results of the five-year study and formulate a policy for operations going forward Southeast Asia: Test technology through the trials in Thailand and elsewhere		<ul style="list-style-type: none"> Summed up the results of the five-year study in Cambodia and formulated a policy for operations going forward Provided technological support, including disclosing technology to improve content ratio of biodiesel with the Thai government and local companies 			Goal achieved		Ethanol business: Begin feasibility study of ethanol business in Vietnam in addition to Cambodia Biodiesel business: Study commercialization feasibility in Thailand and test the superiority of Idemitsu technologies in the Thai government's trials
	Geothermal energy business: <ul style="list-style-type: none"> Maintain stable operations at the Takigami Office, including the binary cycle facilities Drill two wells in the Amemasudake and Oyasu districts and confirm and discover promising geothermal reservoirs 		<ul style="list-style-type: none"> The Takigami Office, including its binary cycle power generation facilities, achieved usage rates according to plan without incident. Drilled exploratory wells in reclaimed areas in Amemasudake and Oyasu regions and conducted fumarole tests 			<ul style="list-style-type: none"> Goal achieved at the Takigami Office Conduct surveys in Amemasudake and Oyasu regions as planned, achieving goal 		<ul style="list-style-type: none"> Maintain stable operations at the Takigami Office, including the binary cycle facilities. Drill one well in the Amemasudake district and confirm geothermal reservoirs Move onto practical trials in the Oyasu district, drill three exploratory wells for production/recovery, and begin drafting environmental protection plans to access the area

Power Generation Business

Wind Power

Idemitsu provided funding to Futamata Wind Development Co., Ltd. in April 2010, and helps operate the Futamata Wind Power Plant (51,000 kW) in Rokkasho-Mura, Kamikita-Gun, Aomori Prefecture.

[Wind Projects](#)

Solar Power (Mega Solar)

Idemitsu is actively engaged in the solar power business on relatively large tracts of idle Company-owned land with good sun exposure, such as the sites of closed refineries. The Company's four power stations produce a total of 15,210 kW.

Moji Power Plant I: 1,900 kW (Fukuoka Prefecture)

Moji Power Plant II: 1,990 kW (Fukuoka Prefecture)

Himeji Power Plant: 10,000 kW (Hyogo Prefecture)

Onahama Power Plant: 1,320 kW (Fukushima Prefecture)

[Solar Power \(Mega Solar\)](#)



The Moji Power Plant

Biomass Power

Idemitsu provided funding for Kochi Prefecture's Tosa Green Power Co., Ltd. and has operated the Tosa Power Plant (6,250 kW) since April 2015. The plant is Japan's first stand-alone wood-fueled biomass power plant, exclusively burning unused wood and handling everything onsite from chipping and drying to power generation. The station contributes to forest management by effectively using waste wood while reducing CO₂ emissions by using renewable energy, and to the stimulation of local economies by creating jobs and encouraging the local production and local consumption of energy. We also acquired a stake in Fukui Prefecture's Fukui Green Power Co., Ltd., and the Ono Power Plant (7,000 kW) commenced operation in April 2016.



The Ono Power Plant

Geothermal Power

Idemitsu has been involved in developing geothermal resources since the 1970s. In 1996, Idemitsu began supplying steam on demand to the Takigami Power Plant (25 MW, Kokonoe-machi, Oita Prefecture), which Idemitsu operates jointly with Kyushu Electric Power Co., Inc. In June 2010, the plant's power generation capacity was increased to 27.5 MW. Our efforts have contributed to the plant's high utilization rate which, averaging over 90%, is at the top of its class in Japan.

The steam is generated at the Takigami Binary-Cycle Power Station (power generation capacity: 5,050 kW), which was established in March 2017 to make effective use of previously unused hot water and commenced commercial operations on the site of the Takigami Power Station, one of the largest geothermal binary-cycle power stations in Japan. At the same time, we are working to further expand the nation's geothermal resource development by drilling survey geothermal wells in the Oyasu district of Akita and the Amemasudake district of Hokkaido Prefecture. Going forward, we will continue to contribute to the expansion of electric power supply through renewable energy sources developed in Japan.



Commercial Operation Begins at One of Japan's Largest Binary Power Plants in Takigami

[Geothermal](#)

The Idemitsu Group's Renewable Energy Businesses

Type	Power Station Name	Output (kW)	Notes
Wind	Futamata Wind Power Development's Rokkasho-Mura Futamata Wind Power Station	51,000	
Solar	Himeji Power Station	10,000	
	Moji No. 1 Power Station	1,900	
	Moji No. 2 Power Station	1,990	
	Onahama Power Station	1,320	
Biomass	Tosa Green Power's Tosa Power Station	6,250	
	Fukui Green Power	7,340	
Geothermal	Idemitsu Oita Geothermal Co., Ltd.'s Takigami Power Plant	27,500	Steam supply
		5,050	Binary cycle power station, operations to begin March 2017

Electric Power Retail

Idemitsu Green Power K.K. and Premium Green Power K.K. comprise the electric power business and provide power in response to customer demands related to environmental and economic concerns. Premium Green Power provides customers with electricity that, in principle, is generated from 100% renewable sources, such as wind, solar, biomass, and binary-cycle geothermal power. Looking to balance environmental and economic concerns, Idemitsu Green Power meets customer needs by drawing on a mix of resources and sources encompassing fossil fuels, recycled power and the aforementioned renewable sources.

Biofuel Business

We are studying the feasibility of biofuel businesses in Southeast Asia. Specifically, we are considering a bioethanol business in Cambodia and Vietnam focused on the cassava plant. In addition, we provide technical support for a government-sponsored project in Thailand to produce highly concentrated blends of biodiesel and are engaged in commercialization efforts in the country.



Cassava, a raw material for bioethanol



Cassava fields in Cambodia

[Biofuels](#)