





## Special Feature

# Uniqueness and Competitive Advantages

The Cosmo Energy Group aims at achieving sustainable growth in order to continue to be an energy company valued by society.

Uniqueness and competitive advantages are sources for growth for the Cosmo Energy Group.

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Cosmo Energy Group's Uniqueness and Competitiveness

# 01 Consideration for the Environment

As our management vision states "Harmony and Symbiosis with the Global Environment," we have been implementing diverse measures with the aim of becoming the world's most environmentally-friendly oil/energy corporate group. We are proud to present our environmental measures and initiatives from the viewpoint of uniqueness and competitiveness.

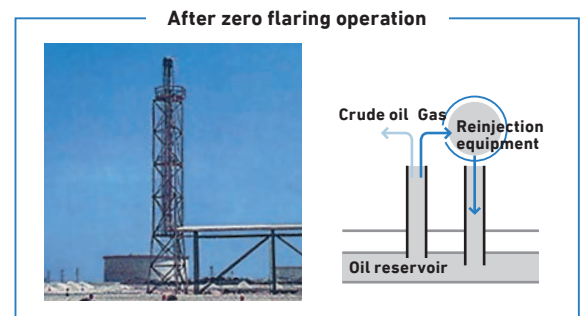
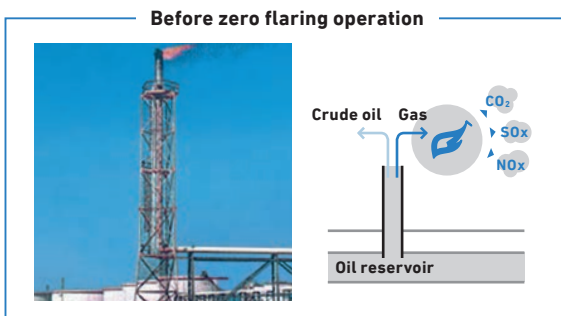
## Zero flare project and zero discharge of oil field wastewater

The oil fields of Abu Dhabi Oil Co., Ltd. and Qatar Petroleum Development Co., Ltd. in the Cosmo Energy Group have been realizing the zero flaring operation by collecting the associated gas generated in oil production and reinjecting it into the subsurface oil reservoirs. This is contributing to the prevention of air pollution and the reduction of CO<sub>2</sub> emissions.

Formation water associated in oil production and the wastewater generated in the crude oil treatment process are required to be disposed properly. Cosmo Energy Group companies have the operation without any discharge of the formation water and

the wastewater by reinjecting them back into the subsurface through the water disposal wells after oil removal treatment.

In the development of Hail oil field, where includes the Marawah Marine Biosphere Reserve, registered by UNESCO as a sanctuary, any discharge of wastewater and cuttings fluid generated in development activities were strictly prohibited. By installing a wastewater disposal well and cuttings reinjection well prior to drilling activities, we have achieved the "zero discharge operation" in accordance with regulations.



Water disposal well for wastewater injection to subsurface



Mangroves near the causeway to the West Mubarras site terminal



## Steadily progressing to be well prepared for the new IMO regulations

In October 2016, as an air pollution preventive measure, the International Maritime Organization (IMO) decided to set a global limit to reduce the content of sulfur in marine fuel oil from 3.5% at present to 0.5% by 2020, in order to reduce ships' emissions of sulfur oxide (SOx).

The Cosmo Energy Group plans to establish a system to produce fuel oil that complies with the regulation before the tightening of the IMO regulation in 2020. Specific measures are to make maximum use of an increase in the capacity of the direct desulfurization unit at Chiba Refinery so as to supply fuel oil that complies with the IMO regulation; and to increase the

capacity of the Delayed Coker unit at Sakai Refinery so as to increase production of profitable products with a shift from heavy oil to middle distillate.



Delayed Coker unit at Sakai Refinery

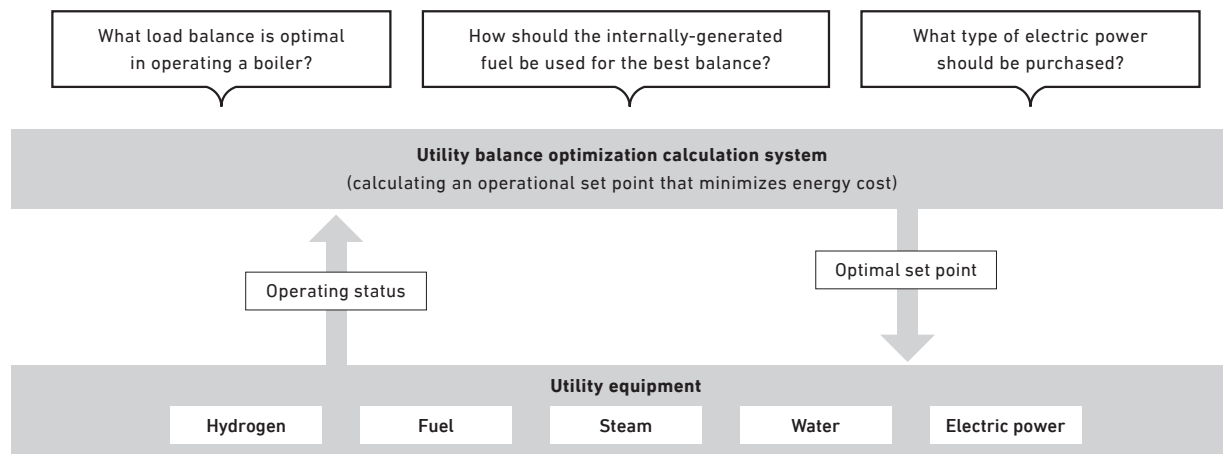
### What are the IMO regulations?

- International environmental regulations on marine fuel oil set by the International Maritime Organization (IMO)
- Tighter regulation to reduce the content of sulfur in marine fuel oil from 3.5% at present to 0.5% from January 2020
- Shipping companies have the following three options to choose from but the latter two require a significant amount of investment.
  - ① Use fuel oil with low sulfur content
  - ② Build vessels that use liquid natural gas (LNG) with no sulfur content as fuel oil
  - ③ Newly construct a scrubber that removes sulfur from the exhaust gas

## Reduction in CO<sub>2</sub> emissions by adopting a utility balance optimization calculation system

Refineries use diverse utilities, such as steam, electricity, and fuel to operate equipment. A utility balance optimization calculation system calculates how to operate optimally to minimize these energy costs. For example, we utilize operational data for the entire refinery, calculate which boiler should be operated with which load balance for efficient operation or how much electricity should be purchased, make them visible, and thereby conduct energy-efficient operation.

In FY2018 Cosmo Oil adopted a system for steam and electric power at Chiba Refinery and managed to reduce CO<sub>2</sub> emissions by about 15,000 tons. In FY2019 and beyond, the company plans to promote greater efficiency by adopting the same system for hydrogen and fuel at Chiba Refinery. It also has a plan to adopt the system at Yokkaichi Refinery and Sakai Refinery in an effort to achieve a further reduction in environmental impact.



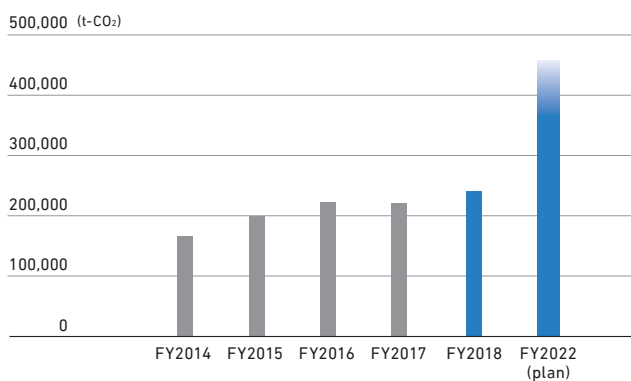
**Maruzen Petrochemical first in world to adopt innovative energy saving distillation system**

Maruzen Petrochemical installed a cutting-edge energy saving distillation tower in the methyl ethyl ketone manufacturing facility of its Chiba Plant in 2016. This marked a world-first adoption of SUPERHIDIC™ (co-licensed by Toyo Engineering Corporation and the National Institute of Advanced Industrial Science and Technology), an innovative energy saving distillation system that adjusts heat exchange at a desirable heat duty and curbs energy injection from outside. Compared to a conventional distillation tower, over 50% of energy saving has been achieved.



**Promoting wind power generation business to reduce CO<sub>2</sub> emissions**

**CO<sub>2</sub> Emission Reduction by the Wind Power Generation**



\* Wind power generation: Calculated by using the total power generation volume multiplied by the actual CO<sub>2</sub> emission coefficient, adjusted CO<sub>2</sub> emission coefficient, and other alternative measures.

Wind power is eco-friendly, clean energy with no concern over depletion of resources and no CO<sub>2</sub> emissions. Wind power generated by Cosmo Eco Power Co., Ltd. in the Cosmo Energy Group is distributed by local electric power companies to support the lives of people there. The amount of power generated has expanded to serve around 150,000 households, contributing not only to CO<sub>2</sub> emission reduction but also to boosting the energy self-sufficiency rate of Japan, which is highly dependent on imported energy. We aim to become a leading company by continuing to develop new onshore wind farms and also by entering the offshore wind power generation business at an early point.

## Consideration for the Environment



### Environmental contribution activities together with customers

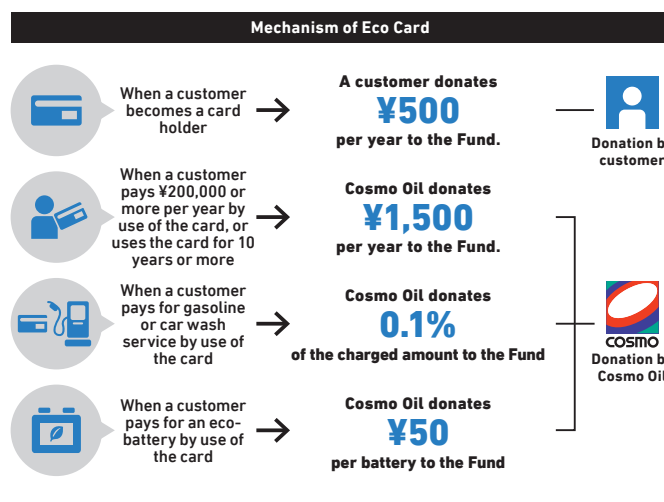
The Cosmo Energy Group has been issuing the Eco Card as a membership card to our loyal customers who frequently use our service stations and have a high level of environmental consciousness since 2002. There are 64,000 card holders. This Eco Card has an add-on feature to contribute to environmental activities: both card members and the Cosmo Energy Group make donations to fund the Cosmo Oil Eco Card Fund, which supports projects to counter climate change issues across the world. In FY2018, the Fund supported 15 projects, and was involved in a project to plant trees as well as another to preserve a forest. The roots of climate change problems are often poverty, education, economic growth, and other social issues in emerging countries. The projects the Fund supports tend to help resolve these issues as well. We will continue to help resolve social issues in the world jointly with our Eco Card members.



Cosmo the Card Eco



Cosmo the Card Opus Eco



See details

Cosmo Oil Eco Card Fund Annual Report 2019

<https://ceh.cosmo-oil.co.jp/eng/envi/ecoreport/index.html>

### Received the Honorable Prize at the Global Environment Awards

The Cosmo Energy Group received the Honorable Prize at the 28th Global Environment Awards (sponsored by Fujisankei Communications Group and supported by the Ministry of Economy, Trade and Industry, the Ministry of Environment, Ministry of Education, Culture, Sports and Technology, the Ministry of Land, Infrastructure, Transport and Tourism, the Ministry of Agriculture, Forestry and Fisheries, and the Japan Economic Federation) for its environmentally-friendly activities. The Global Environment Awards were established in 1992 in special cooperation with the World Wide Fund for Nature (WWF) Japan as an award system for industry with the aim of ensuring "symbiosis between industrial development and the global environment". The Cosmo Energy Group's many years of activities to contribute to an eco-friendly society, such as the Eco Card Fund, and engagement in wide-ranging

eco-friendly energy supply in the oil business and the wind power generation business have been highly regarded and resulted in the receipt of the Honorable Award on this occasion.



## Cosmo Energy Group's Uniqueness and Competitiveness

# Relationship with oil producing countries

The Cosmo Energy Group has been striving to build a trustworthy relationship with Abu Dhabi Government based on the stable operation in Abu Dhabi offshore oil fields over 50 years.

We are pleased to introduce here our relationship with Abu Dhabi and our group's Health, Safety & Environment (HSE) activities and Japanese-language training.

## History of building relationship with UAE goes back to 1967

The relationship between Abu Dhabi Oil Co., Ltd. in Cosmo Energy Group and Abu Dhabi, UAE started in 1967, before the foundation of the country. Back then, Abu Dhabi had previously given oil concessions only to US and European companies, but opened up international bidding to Japan. Maruzen Oil Co., Ltd. and Daikyo Oil Co., Ltd. (both companies are currently Cosmo Energy Holdings Co., Ltd.), as well as Nippon Mining Co., Ltd. (currently JXTG Holdings Co., Ltd.) jointly bided and the oil concessions were awarded to them. Subsequently on December 6, 1967, a concession agreement on the exploration and development of the offshore oil fields in Abu Dhabi was signed. Abu Dhabi Oil Co., Ltd. has been engaged in safe and stable operation for many years through a close relationship with Abu Dhabi National Oil Company

and has been highly evaluated since its foundation. In 2018, Abu Dhabi Oil Co., Ltd celebrated the 50th anniversary. Our Group will strive to be a trusted partner of Abu Dhabi.



Signing for concession in Mubarraz Dalma field

### Oil Development History of the Cosmo Energy Group's Operating Companies

	Abu Dhabi Oil Co., Ltd.	Qatar Petroleum Development Co., Ltd.	United Petroleum Development Co., Ltd	Middle East and global events
1967	Acquired concession of the Mubarraz oil field			1967 Third Arab-Israeli War
1968	Established Abu Dhabi Oil Co., Ltd.			
1970			Signed a concession agreement of El Bunduq oil field Established United Petroleum Development Co., Ltd.	1971 Foundation of the United Arab Emirates
1973	Commenced of Mubarraz oil field production			1973 Fourth Arab-Israeli War → First Oil Shock
1975			Commenced of El Bunduq oil field production	1978 Iranian Revolution → Second Oil Shock
1979	Acquired concession of the Umm Al Anbar oil field			1980 Iran-Iraq War
1988	Reached 100 million barrels in production volume Acquired concession of the Neewat Al Ghalan oil field			
1989	Commenced of Umm Al Anbar oil field production			1991 Gulf War
1993			Reached 100 million barrels in production volume	
1995	Commenced of Neewat Al Ghalan oil field production			
1997		Signed a development and production sharing agreement with the Government of the State of Qatar Established Qatar Petroleum Development Co., Ltd.		
2001	Commenced zero flare operation			2003 Iraq War
2005	Reached 200 million barrels in production volume			
2006		Commenced of oil field production	Reached 200 million barrels in production volume Commenced zero flare operation	
2007		Commenced zero flare operation		2008 Record-high WTI crude oil price (\$147/bbl)
2011	Signed a new concession agreement and acquired the Hail oil field			First half of 2010s Shale revolution
2017	Commencement of Hail oil field production			2017 Qatar diplomatic crisis
2018	50th anniversary		Signed a new concession agreement of El Bunduq oil field	



## Health, Safety & Environment

Health, Safety & Environment (HSE) is a term associated with safety, health and environmental issues relating to business activities. HSE activities deal with these issues systematically and effectively in order to reduce risks and enhance the value of the corporation.

Abu Dhabi Oil Co., Ltd. has organized the HSE Committee and implemented the systematic HSE activities which include HSE training plans appropriate to each position of employees, the HSE patrol aiming at enhancement on-site HSE management, execution of drills for emergencies and application to the ADNOC HSE Awards Program.

The ADNOC HSE Awards Program is a system to provide HSE awards sponsored by Abu Dhabi National Oil Company. Abu Dhabi Oil Co., Ltd. has been actively applying for this HSE Awards Program based on its HSE activities, and has been highly evaluated and received many awards in the past.

Received the HSE Performer Award (FY2014)



Coral reef around our oil fields

## Japanese-language training in the Emirates of Abu Dhabi

Since 2011, we have provided Japanese-language programs to Applied Technology high school (ATHS), a local high school in Abu Dhabi, in partnership with the Ritsumeikan Trust. We have sent three Japanese teachers and sponsored the program.

As of March 2019, 81 students from Grade 9 to Grade 12 are studying Japanese in the program.

28 students completed the 3-year program in FY2018 and 123 students have completed from the beginning. Among them, 18 students are currently studying in Japan.

We will continue to make further efforts to develop this program in the hope that students in the UAE will deepen their understanding of Japanese language and culture, and that they will play an indispensable role in building enhanced relationship between two countries.

Closing Ceremony of Summer School at Ritsumeikan Uji High School



Reunion Meeting of the ATHS Japanese-Language Program in Kyoto



03 Cosmo Energy Group's Uniqueness and Competitiveness

# Growth in the Petrochemical Business

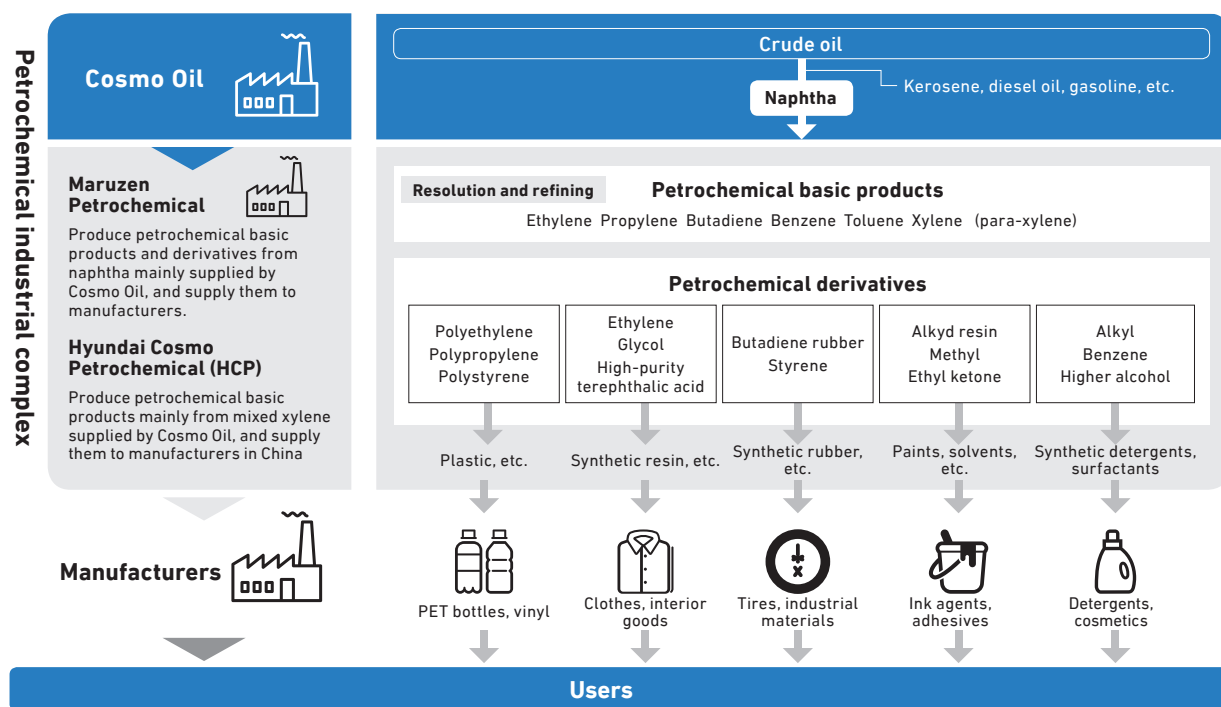
The Cosmo Energy Group produces basic petrochemical products (basic chemicals), including plastics, synthetic rubber, ethylene (material of synthetic fiber), propylene, butadiene, and benzene.

Basic chemicals are indispensable materials for modern life and their demand is expected to grow more mainly in emerging countries. Let us present the social role of basic chemicals and the Cosmo Energy Group's advantages in this area.

## Social role of basic petrochemical products

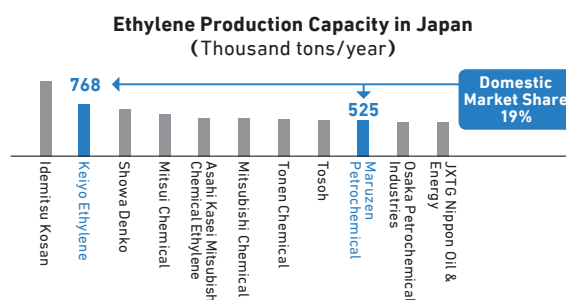
We produce ethylene, propylene, butadiene, benzene, mixed xylene, and other petrochemical products from naphtha, which is derived from the refining of crude oil.

These products are used as materials for clothes and daily goods in the medical and all other kinds of fields and are called basic chemicals that support modern life.



## Japan's top-class ethylene production capacity

The Cosmo Energy Group's combined annual production of ethylene by Maruzen Petrochemical and its joint venture Keiyo Ethylene amounted to 1.29 million tons, among the highest levels in Japan in 2018. We will continue to provide high-grade ethylene in the market.



Source: Results of the Production Capacity Survey of Major Petrochemical Products in Japan (as of December 31, 2018); METI; March 29, 2019



## Developing competitive advantages in functional chemicals

Unlike basic chemicals used in various fields, functional chemicals enhance high performance in a specified field. We are engaged in the development of chemicals that require high-level technology, such as resin for photo resists, used

in manufacturing semiconductors, the core part of smartphones, and acetylene derivatives used for reactive diluents in coating materials and paints. We develop original products and contribute to technological innovation.

### ● World-leading supplier in the semiconductor resist resin field

Semiconductor resist resin is a special resin that enables a chemical reaction to occur only in areas under light and is indispensable in semiconductor processing. Maruzen Petrochemical is one of the world's leading suppliers of such resist (trade name: Marukalyncur). We will maintain technology development and capital spending in order to meet requests for resins that help realize further refinement in the fabrication of semiconductors and for quality improvement. We also plan to apply this know-how and design and develop products in accordance with performance requirement in diverse applications.



### ● Expanded production of material for hot-melt, pressure-sensitive adhesive in anticipation of global growth in demand

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### World-leading para-xylene production capacity

Hyundai Cosmo Petrochemical (HCP), a joint venture between the Cosmo Energy Group and Hyundai Oilbank in South Korea, possesses world-leading para-xylene production capacity of about 1.18 million tons per year. In addition, HCP is highly competitive in having a plant located near China, Asia's largest region of demand. In FY2018, HCP began investment to increase production capacity for para-xylene and for energy saving, in order to become more competitive.

Cosmo Energy Group's Uniqueness and Competitiveness

# 04 Engagement with Customers

In 1997, we began to send out the message "Filling Up Your Hearts, Too." More than 20 years have passed since then but our desire incorporated in this message remains the same. Let us present here the Cosmo Energy Group's initiatives to fill up the hearts of our customers through the everyday supply of energy.

## "Filling Up Your Hearts, Too" declaration and our three brand promises

### "Filling Up Your Hearts, Too" Declaration Three brand promises

We strive to "fill up hearts" of our customers by keeping the following three brand promises to our customers

First promise	Customers will be greeted with a welcome and a smile at clean Cosmo Oil service stations.	Comfort
Second promise	Cosmo Oil service stations will offer quality-assured products and services.	Peace of mind
Third promise	Cosmo Oil service station staff will be responsible for their answers to customers' queries.	Trust

Cosmo service stations strive to "fill up the hearts" of customers based on the three brand promises to deliver comfort, peace of mind, and trust to customers.

We strongly believe that, by keeping all three promises at all service stations, the Cosmo Brand is cultivated and the Cosmo service stations will be chosen by customers.

### ● Cosmo Brand Academy training

With the aim of becoming a brand chosen by customers and developing human resources that can respond to customers' high demand in products and services, the Cosmo Brand Academy holds training programs regarding the enhancement of product knowledge, solution proposals, and technical skills.



### ● Group training

Once a year, group training is held by the area of each branch in order to disseminate knowledge and know-how obtained by a service station to other areas, with the ultimate aim of improving customer satisfaction.



### ● Toward improving customer satisfaction

To better provide satisfying services at stations, outside mystery examiners investigate services at stations three times a year. Evaluation items in the survey include the operation of staff from when a customer enters the station until exiting, as well as the customer's desire to re-visit. We are implementing diverse measures to improve daily service, targeting a 50% ratio of the highest "AA" rating for Service Stations (SS) by FY2022, the final year of the current medium-term management plan.

The ratio of "AA" ratings achieved has been increasing every year, thanks to the initiatives taken so far. We will continue to make efforts to meet the expectations of our customers.

#### Ratio of AA-rated Service Stations in Evaluation

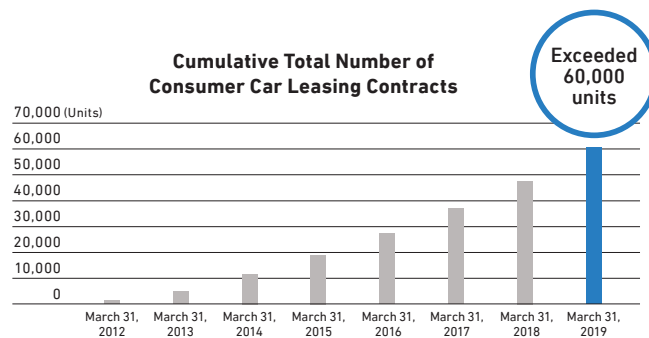


(Average of three evaluation results per year)



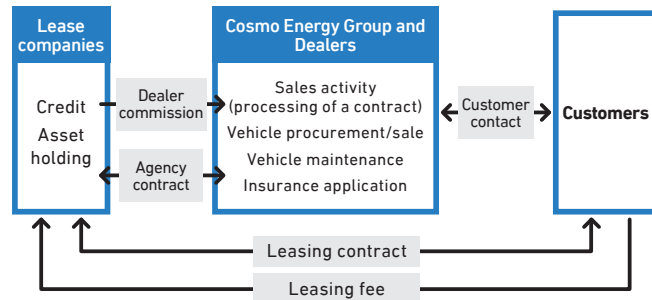
## Evolving from an oil distributor to a “Vehicle Life” value provider to deepen the relationship with customers

Leveraging the strength of service stations to have the recurring and direct contact with individual customers, the Cosmo Energy Group is engaged in the car leasing business for the customers since FY2011. A scheme to give discount to gasoline purchasers and a wide range of vehicle models of all domestic automakers deemed leasable were favorably received and contributed to the cumulative total number of contracts of 60,579 at the end of FY2018.



### ● Consumer car leasing business model

- Customers
  - ▶ Being able to use new cars of any domestic automaker and any model at a favorable price
  - ▶ No complicated procedures  
For example, expenses are simplified as the monthly fixed rate includes mandatory car inspections, taxes, insurance, etc.
- Leasing companies
  - ▶ Capture new customers
- Cosmo and service station operators
  - ▶ Secure revenue sources that are not solely dependent on fuel



### ● Enhancement of Cosmo’s “Vehicle Life” value proposition

By offering car leasing for individuals, we support many aspects of customers’ “Vehicle Life” from the purchase and maintenance of a car to the switch to a new car. As a new initiative, we developed the “Men-Kuru Package” to support customers beginning with obtaining a driver’s license and some sales channels began handling this package in January 2019. This is a one-stop service to provide assistance ranging from taking lessons for a driver’s license at one of

our affiliated driving schools across Japan to providing car leasing service after taking the lessons. Due to its uniqueness, the “Men-Kuru Package” obtained a business model patent in April 2019. The launch of the “Men-Kuru Package” has enabled us to satisfy a wider range of customers from the starting point of their “Vehicle Life” (obtaining a driver’s license).

Cosmo Energy Group's Uniqueness and Competitiveness

# 05 Empowerment of Diverse Human Resources

The Cosmo Energy Group believes that our human resources are the source of our uniqueness and competitive advantages. We strive to develop workplaces where employees play an active role by making use of their diverse backgrounds and to develop arrangements that facilitate employees' activities that create value.

## Developing future leaders of the Cosmo Energy Group

We believe that our human resources are the source of our value creation. We strive to secure and develop diverse individuals who tackle the changing business environment with a sense of speed. We also make efforts to provide a workplace that allows

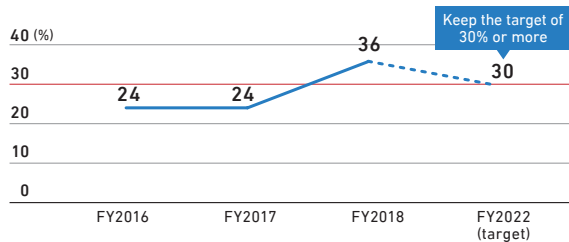
motivated employees with diverse backgrounds to go about their work proactively. We aim to achieve high productivity and create new value by combining employees' diverse values, abilities, and experiences.

## Promoting diversity (having diverse human resources)

In order to ensure diversity, our first priority is to empower women. We are aiming for women to represent 6% of managers and 30% of newly-hired employees (professional staff) by FY2022. For employees undergoing childbirth and using childcare, in addition to the childcare leave and shorter working hours programs, conditions of which exceed legal requirements, and a telework program, we promote taking special paid holidays such as an anniversary day off (the first birthday of a child) and the program offering leave of absence for childcare up to the child's graduation from elementary school. We have also prepared systems that enable employees to keep working even when their family situation changes, such as limited workplace options

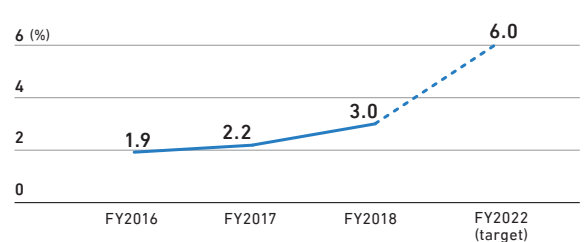
for childcare or caregiving reasons, a re-employment system for employees who have retired for childcare or caregiving reasons, and a leave of absence program related to the job transfer of a spouse. We also have a career support program to assist employees who take childcare leave to return to work. From the perspective of respecting diversity, we also strive to maintain or increase employment of persons with disabilities. The rate of persons with disabilities as of June 1, 2019 was 2.30%, exceeding the mandate rate. We are implementing measures to empower employees with disabilities, such as arranging seminars at the departments which will receive the employees and providing regular consultation to ensure the employee is settled well in the workplace.

Ratio of Women in Newly-Hired Employees



\* Employees (professional staff) at Cosmo Oil  
 \* Calculated as of March 31 of each fiscal year

Ratio of Female Managers



\* Managers are those ranked in a position to have subordinates or those in the similar rank but with no subordinates.  
 \* Due to a change in the scope of job category covered in the data, the ratio of female managers for previous years has been revised.  
 \* Employees registered at Cosmo Oil  
 \* Calculated as of March 31 of each fiscal year



## Promoting work-style innovation

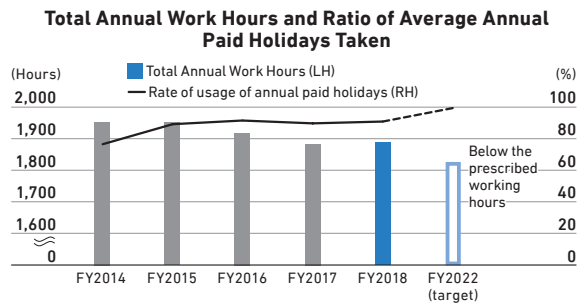
In order to improve productivity and to facilitate a work-life balance, we have aimed to achieve a 100% ratio of annual paid holidays taken and to optimize working hours. Our initiatives include encouraging employees to work mornings rather than nights (revision of the overtime pay rate), to take a so-called "refresh day" (no-after-hours work day), to turn off the lights in the workplace at 8 pm (to discourage non-essential after-hours work), and to factor in the actual number of hours worked by subordinates and its improvement in personnel assessments of managers.

### ● Expansion into the telework program

With the objective of boosting productivity and promoting diverse work styles, the work-at-home program was extended to all employees (excluding shift workers) in FY2017. Further in FY2019, the work-at-home program was expanded into the telework program, enabling employees to work not at home but at other locations.

These efforts reduced total annual work hours to 1,888 in FY2018. We will continue to make efforts aimed at reaching levels below prescribed total

annual work hours (1,811 hours for day workers; 1,826 hours for shift workers) and a 100% ratio of annual paid holidays taken.



## Evaluation by Outside Institutions

In the case of the consolidated medium-term CSR plan, which links with the sixth consolidated medium-term management plan, we are striving to promote health and reduce long work hours. In addition, we are establishing an environment that enables the improvement of productivity and the creation of new value in initiatives to promote diversity. These initiatives have been recognized by outside institutions and are highly regarded.

### ● Obtained "Platinum Kurumin" certification, first in Japan's oil industry

Cosmo Oil in the Cosmo Energy Group obtained "Platinum Kurumin" certification from the Minister of Health, Labour and Welfare, under the revised Act on Advancement of Measures to Support Raising Next-Generation Children. Promotion of diversity is an important theme, as the new consolidated medium-term management plan lists "strengthen the Group's management foundations" as one of its basic policies. "We value people" is also a part of the Group Code of Conduct. In the spirit of practicing this, we will continue various initiatives to improve the work-life balance of employees.



\* "Platinum Kurumin" certification is awarded under the revised Act to companies that have already obtained "Kurumin" – awarded in recognition of a company's measures to provide support to employees with children – and have further built upon this.