

## Working for a better global environment

### Activities with customers and society

We are working to reduce the impacts on the environment—not only at our own facilities, but throughout the entire product life cycle, from the production of crude oil through to the customer's actual use of petroleum products. Because the greatest environmental impacts in the entire petroleum product life cycle occur at the use stage,\*1 the Cosmo Oil Group is putting effort into communication with all our customers and stakeholders.

Under the slogan of "Living With Our Planet," in April 2002 we launched the Cosmo the Card Eco, a company credit card that gives customers the chance to join us in protecting the environment. Cosmo Oil supplements the contributions collected through this card, and our employees visit the actual sites where projects are being implemented. To date, the card has supported projects such as the Tropical Rainforest Conservation Project in Papua New Guinea and on the Solomon Islands. We have publicized these activities by television commercials to raise public interest.

At the same time, we are expanding awareness-raising activities.\*2 Cosmo Oil is conducting social contribution activities in which our employees participate under the themes of "international contributions," "environmental protection," and the "car society." We have conducted community activities for years, such as an annual event called kids camp for primary school children who have become orphans as a result of traffic accidents, and the Cosmo Kids' Green Workshop to raise environmental awareness. We have also boosted the amount of environmental content in our advertising.

Cooperation in international society is another important duty. To solve environmental problems in oil-producing and developing countries, we are working to spread environment-related technologies, for example by supporting exchanges of experts, both overseas and in Japan.

We believe that raising the environmental awareness of consumers and society as a result of these communication and social contribution activities will help protect the environment. It is also our belief that when they see the extent of our efforts, customers, shareholders and investors will be encouraged to choose the Cosmo Oil Group.

### Living With Our Planet —Our Commitment

To continue being valued in society, the companies of the Cosmo Oil Group are committed as corporate citizens to do as much as we can do and must do today for the Earth, not only in the petroleum industry but at any level.

### Taking on climate change through emissions trading, etc.

Climate change is a global issue that requires humanity's urgent response. We must go beyond the boundaries of individual companies or countries. While we work to reduce our own environmental impacts, we at Cosmo Oil are working to support the Kyoto Mechanisms, including emissions trading, the CDM and JI.

In May 2001 Cosmo Oil and 12 other companies helped to establish Natsource Japan, an agency for CO<sub>2</sub> emissions trading and consulting. Also, during fiscal 2002, we started a new initiative to make use of carbon sequestration rights. For example, based on 24,000 tons of Carbon Sequestration Rights we purchased, resulting from afforestation in Australia, we issued CO<sub>2</sub> sequestration certificates and developed a "CO<sub>2</sub>-Neutral Gasoline" program.

## Reducing the environmental impacts of business operations

We are working to improve technologies to help reduce the environmental impacts of our business operations. Priority topics include energy conservation, waste reduction, and reduction of hazardous substance emissions. Our achievements in fiscal 2002 are described here.

### Making catalysts last longer

Cosmo Oil has made many achievements in research and development of the catalysts that are necessary to produce a variety of petroleum

\*1. See pages 31–32.

\*2. See pages 25–26, 28.

products from crude oil. By extending the life of catalysts we can not only cut costs, we can also reduce industrial waste output. In fiscal 2002, our work on residue desulfurization catalysts that remove sulfur content from petroleum products succeeded in developing a catalyst that has 1.3 times the life of conventional catalysts. Trial operations started in the residue desulfurization unit at the Chiba Oil Refinery in November 2002. Our work on fluid catalytic crackers (FCC) established a production method for an FCC metal scavenger that can reduce the amount of catalyst used by half. Trials with this method started in November 2002 in the FCC unit of our Sakai Oil Refinery.

#### **Sludge reduction system**

In the wastewater treatment unit of oil refineries, we break down the organic compounds of the oil component and other substances in wastewater. But the microorganisms used in this process multiply and create excess sludge, which accounts for the greatest volume of industrial waste discharged from oil refineries. The Cosmo Oil Research and Development Center developed a system to suppress the amount of sludge generated, by first crushing it and using a chemical treatment, then running it through the wastewater treatment unit again. In fiscal 2002, a test of this system at the Sakaide Oil Refinery (with assistance from the Petroleum Energy Center) achieved a 50% reduction in the amount of excess sludge, amounting to a total reduction of 400 tons per year. Because the equipment design is simple and easy to operate and maintain, we believe it will be an effective way for other companies to reduce wastewater discharge and environmental impacts.

#### **Soil conservation**

Public awareness of soil pollution has increased in recent years and improvements have been made in national legislation. To help reduce the environmental risks associated with soil pollution, the Cosmo Oil Group drew up a policy on soil conservation in June 2002, and has set up group-wide organizational arrangements to protect the soil environment based on this policy.

#### **Policy on soil conservation (excerpt)**

We will conduct soil testing systematically at Cosmo Oil and affiliated facilities and the sales facilities of Cosmo brand products, and take measures as deemed necessary.

#### **Actions for soil conservation**

We are carrying out the following activities to prevent leaks of petroleum products at service stations and minimize the environmental impacts in the event of a leak.

During fiscal 2001, we conducted our own inspections at Cosmo Oil-owned service stations that were built 20 years ago or earlier. During fiscal 2002, we implemented risk assessments of the soil environment at all service stations (about 5,300 locations, including authorized dealers). At Cosmo Oil-owned service stations, we conducted independent inspections of equipment and carried out follow-up work depending on the level of risk identified. At authorized dealers we provided recommendations based on our findings. At stations where soil pollution was identified, we started clean-up operations.

We improved the information on the soil environment in service station management manuals, and are currently developing new service station management standards.

We established an expert team at the corporate head office. The team made about 20 training visits to company-owned stations and authorized dealers, created and distributed a training video, and is raising awareness about the importance of protecting the soil environment and the necessity of daily attention to these matters.

At other business sites, we are working to prevent soil pollution, through maintenance and daily inspections of the facilities. Also, we are developing inspection plans based on the type of site operations and history, and implementing inspections based on those plans.

#### **Development of soil pollution technologies**

We are conducting ongoing research on the use of microorganisms for bioremediation to clean soil that has been polluted by oil. In fiscal 2002, we made progress with analytical technologies for investigating pollution conditions, and used them for soil analysis at facilities where petroleum is present, particularly service stations.