

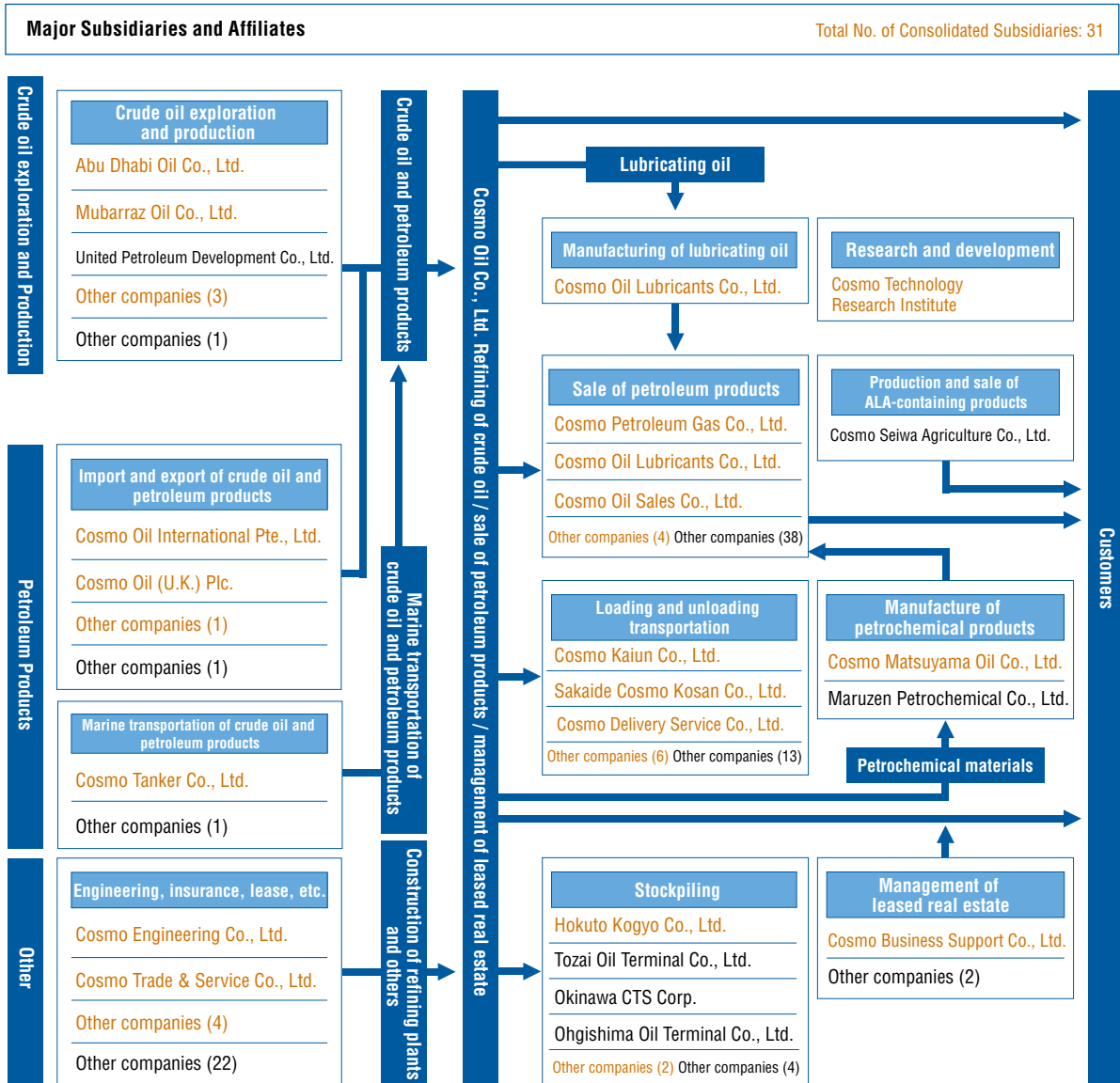
Sustainability Report 2005



Living with Our Planet.

Outline of the Cosmo Oil Group

(As of March 31, 2005)



Company Profile

Trading name	Cosmo Oil Co., Ltd.	History	Cosmo Oil Co., Ltd. was established on April 1, 1986 following the merger between Daikyo Oil Co., Ltd., Maruzen Oil Co., Ltd. and their refinery subsidiary (the former Cosmo Oil Co., Ltd.). Cosmo Oil Co., Ltd. also merged with Asia Oil Co., Ltd. on October 1, 1989.		
Location of the Head Office	1-1-1, Shibaura, Minato-ku, Tokyo, Japan Tel: +81-3-3798-3211				
Year of establishment	April 1, 1986	No. of special agents	318	No. of service stations	4,709
Paid-in capital	JPY51,886,816,126	Branches	Sapporo ¹ , Sendai, Tokyo, Nagoya, Osaka, Hiroshima, Takamatsu, Fukuoka		
Business	Refining and marketing of oil products	Refineries	Chiba, Yokkaichi, Sakai, Sakaide		
No. of company staffs	1,729	Oil depots	38		

¹ Sapporo branch became Sapporo sales branch on June 29, 2005.



Sustainability Report 2005 INDEX

Editorial Policy

1

While the purpose of this report is to present a comprehensive overview of the activities conducted by the Cosmo Oil Group, they have been edited in terms of Economic, Environmental and Social performance, also known as the “triple bottom line”.

* Details of economic, or financial, information are described in the Annual Report.

2

This report focuses on the various stakeholders surrounding the Cosmo Oil Group, and introduces its activities conducted in Fiscal 2004 from the perspective of the “people”.

3

In deciding on subjects to be included in this report, we have referred to the “Environmental Report Guidelines (Fiscal 2003 version)” published by the Ministry of the Environment and the “GRI*1 Sustainability Reporting Guidelines 2002”. In addition, the collection of figures pertaining to environmental accounting was conducted with reference to the “Environmental Accounting Guidelines (Fiscal 2005 version)” published by the Ministry of the Environment.

*1 The GRI (Global Reporting Initiative) Guidelines, with its emphasis on the “Economy”, “Environment” and “Society”, provides a comprehensive reporting framework for a sustainability report.

Scope of Report

This report covers Economic, Environmental and Social performance of the Cosmo Oil Group for Fiscal 2004. However, some examples include part of the activities in fiscal 2005. For a comprehensive view of the Cosmo Oil Group, please refer to page 1.

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Commitment



We Fulfill Our Social Responsibilities and Promote Corporate Management with Integrity so as to Pursue Sustainable Development together with the Society.

As a Member of Society

Every company is a member of society, and is a public institution that exists with people.

The Cosmo Oil Group, with its focus on the oil business, understands that our roles in society are bringing greater convenience to our daily life, and contributing to invigorating industrial activities through the stable supply of energy. It is our mission and responsibility to live in harmony with and achieve sustainable development alongside society by fulfilling our social responsibilities.

In achieving this mission, we recognize the importance of fulfilling our social responsibilities appropriately and contributing to society, while improving economic performance in order to remain as a sustainable business entity.

I believe that we can earn trust and support from our stakeholders by seeking a proper balance between economic viability and social responsibilities. It follows that we can continue to conduct business activities on a sustainable basis, which in turn enables us to further

promote social contributions. It is my belief that this positive spiral leads us to the further enhancement of corporate value, and sustainable development of the Cosmo Oil Group as well as society.

Engaging in CSR Management so as to Realize Our Group Management Vision

It is my recognition that CSR (Corporate Social Responsibility) is equivalent to corporate management where fulfilling social responsibilities and enhancing corporate value are an integral component. It is also my view that CSR constitutes a path to materialization of the Cosmo Oil Group Management Vision. "CSR" may be a relatively new term, but the concept of "a company fulfilling its share of social responsibility" is not new at all, and I believe many corporations have individually realized their social responsibilities through their daily business activities.

At the Cosmo Oil Group, "strengthening CSR management" has been listed as one of the basic policies in the New Consolidated Medium-term Management Plan, initiated in Fiscal 2005, in the course of implement-

ing group-wide CSR management. In reference to the Plan, we shall clarify what should be done while making every continuous effort to do what can be done, and raise CSR consciousness in company staffs by committing ourselves to five major issues including enlightenment, strengthening management system, safety, environment and human rights/personnel.

Practicing Corporate Management with Integrity

The Cosmo Oil Group will celebrate its 20th anniversary of its foundation next year. I sincerely hope that we can continue to maintain and build mutual trust with stakeholders and create “value” that can play an role in the course of sustainable development of society and the environment. To that end, we must first practice sound and reliable management.

In recent years, however, the Cosmo Oil Group has been plagued with a series of incidents such as the partial leakage of information on the Cosmo the Card membership and its unauthorized usage, and the oil spill at the Chiba refinery, causing a great deal of trouble. I extend my deepest apologies and would like to tell we are now taking renewed measures to further reinforce our corporate governance system grounded on compliance, and in particular, to further strengthen our internal auditing function and risk management, so as not to repeat the same sorts of incident.

No matter how strong a system is built, however, reliable business activity cannot be realized if the every company staff that actually run the business does not share the same awareness and conduct themselves accordingly. We make considerable strides in raising awareness in company staffs.

Since we handle hazardous substances on a daily basis, as if very usual with oil business, there is always a possibility of an accident or disaster that causes detrimental effects on community. We intend to make substantial efforts in ensuring safety management and information disclosure in order to prevent accidents or minimize impacts resulting from disaster at every stage of business activities such as production, transportation and sale of crude oil and oil products.

Working to Conserve the Environment on a Global Scale

In light of the history of energy, it can be said that massive energy consumption has placed an enormous environmental impact on the global environment. The Cosmo Oil Group has always considered its active engagement with environmental issues as one of the top management priorities which I think is why we have earned the reputation of being an “Environmentally friendly company, Cosmo”. In cooperation with stakeholders including our customers, we intend to remain committed to improving environmental issues.

The Medium-term Environmental Plan, initiated in

Fiscal 2002, is now approaching its second term. We will continue to strive to reduce the environmental impacts arising from our business activities, and promote research & development for the better quality and use of energy. Also, going beyond the scope of our business, we will continue to engage in activities to support people and communities facing major environmental problems that threaten the sustainability of the earth.

Together with Our Company Staffs

I believe that a company is the sum of its “people”. Business activities cannot go forward without the efforts of each company staff. Aiming to provide a workplace where each company staff can exert their efforts with loyalty and pride, we are continuously improving a work environment and personnel system, while fostering lively corporate culture with high ethical standards. I believe it is of paramount importance for all the company staffs to share the Group vision so as to co-exist and develop with society.



Participating in clean-up activities in extensive forest at the “2005 Clean-up Campaign in Mt. Fuji”.

In this “Sustainability Report”, our determination, concepts and activities have been compiled and introduced which we think are required to realize sustainable society, that is, the Cosmo Oil Group Management Vision.

Through various opportunities in the future, we will provide accurate information in a more timely manner, listen to your voices and reflect them in our management, and improve our business activities. I look forward to hearing your frank opinions and recommendations.

木村 敦一

Yaichi Kimura
President
Cosmo Oil Co., Ltd.

Vision

Cosmo Oil Group Management Vision

In striving for harmony and symbiosis between our planet, human and society, we aim to achieve sustainable development towards the future of unlimited possibilities.

Harmony and Symbiosis

- Harmony and Symbiosis with the Global Environment
- Harmony and Symbiosis between Energy and Society
- Harmony and Symbiosis between Companies and Society

Creating Future Value

- Creating the Value of “Customer First”
- Creating the Value from the Diverse Ideas of the Individual
- Creating the Value by Exerting Collective Wisdom



Vision

• Light and Shadow of Oil

By turning itself into fuel, raw materials, medicines, and so forth, oil has brought many benefits to humankind, but on the other hand mass consumption of energy has imposed a great impact on the global environment.

• The Cosmo Oil Group’s Resolution

With the fact in mind that the main function of the Cosmo Oil Group is the handling of oil, we wish to remain as an energy company that can deliver a new value while stressing the importance of the harmonious symbiosis among the earth, human and society in the hope that a fruitful future can be realized.

• Our Two Slogans

We have entrusted these intentions to the two slogans “Living with Our Planet.” and “Filling Up Your Hearts, Too”. We have compiled this report in order to communicate to stakeholders the Cosmo Oil Group’s efforts that have been made based on these two slogans to realize a sustainable society.



“Living with Our Planet.”

For the continued existence of the Cosmo Oil Group, we faithfully conduct what can be done and what needs to be done for the earth beyond the scope of the oil business.

To remain as an energy company that can be chosen by customers, we continue to assist their meaningful daily lives with the stable energy supply.

“Filling Up Your Hearts, Too”





Materialization of the Management Vision

経営理念の実現

Materializing management vision...that is the mission of the Cosmo Oil Group.

To Materialize the Management Vision

In order to materialize the Management Vision, the Cosmo Oil Group itself must earn profits. Our business activities must also be firmly grounded on social rules and corporate ethics. At the same time, it is important that our energy business can sufficiently meet the various needs of our stakeholders while promoting environmental conservation.

The Cosmo Oil Group believes that all of these objectives comprise our CSR.

Strengthening Profit Base and Promoting Social Responsibility

Consolidated Medium-term Management Plan (Fiscal 2005-2007)

The Cosmo Oil Group started a new Medium-term Management Plan in Fiscal 2005.

The business environment in which the Cosmo Oil Group operates undergoes a period of profound changes in the domestic demand structure such as declining oil demand and a large shift to gasoline, diesel fuel and light distillates as a source of energy. Also, environmental measures have become increasingly stringent with the Kyoto Protocol coming into effect. Looking beyond the domestic market, we can observe an expansion in the overseas energy markets such as Asia and the Pacific Rim, and major struc-

tural changes are taking place such as the tightening of oil supply and demand. Under such circumstances, a new Medium-term Management Plan was made up according to the 2 pillars of concepts: "strengthening management base to weather future structural changes", and "switching to growth strategy".

One of the basic policies embedded in the Medium-term Management Plan is "strengthening CSR (Corporate Social Responsibility)". As a specific measure for realizing this policy, we also formulated the Consolidated Medium-term CSR Management Plan, a three year plan that started in Fiscal 2005.

Basic Policy of the Consolidated Medium-term Management Plan

- Strengthening management base to weather future structural changes
 - 1) Securing stable profit base
 - 2) Strengthening our financial position
 - 3) Strengthening our CSR
 - **"Consolidated Medium-term CSR Management Plan"**
- Switching to growth strategies
 - 1) Upgrading our oil refineries
 - 2) Expanding our oil resource development operations

Consolidated Medium-term CSR Management Plan (Fiscal 2005-2007)

Social Responsibility: 3 Pillars

The Cosmo Oil Group defines the 3 pillars of social responsibility as follows:

- To strive for "harmony and symbiosis" with society by promoting corporate management with integrity and business activities.
- To generate "future value" by nurturing corporate culture in which individuals can exercise their full capacity.
- To contribute to "development of a sustainable society" from the perspective of environmental conservation, as an energy provider.

The key words for these 3 pillars are "Compliance", "People", and "Environment".

— The Medium-term Plan: 5 Priorities —

Towards the fulfillment of social responsibility as a corporate group, we formulated the Consolidated Medium-term CSR Management Plan that started in Fiscal 2005. Since this plan is the first Medium-term plan for implementing CSR management for the entire group, we have listed the following 5 priorities in our quest to strengthen the business base for implementing corporate management with integrity, and coexist in harmony with the society of which the Cosmo Oil Group is a member.

- 1) Thorough awareness of CSR
- 2) Strengthening of risk management and the internal audit function
- 3) Greater sophistication of environmental activities
- 4) Implementation of thorough safety management
- 5) Improving human rights/personnel measures

Reference

Related Data p. 63 - 64

Corporate Management with Integrity

誠実な企業経営の継続

Steadfastly fulfilling social responsibilities under a transparent and functional governance system. That is the foundation of corporate integrity and any business activities.

To Materialize the Management Vision

It would not be an exaggeration to say that without corporate management with integrity, the continued existence of the Cosmo Oil Group, and certainly the realization of its management vision, would not be possible.

Corporate management with integrity requires unrelenting efforts. The Cosmo Oil Group strives for continual improvements by establishing transparent and functional governance and operational systems.

Furthermore, we make continued efforts to improve our organizational systems and formulate implementation plans to carry out our social responsibilities in a steadfast manner, while striving to further heighten the awareness of each company staff.

Managing Director's Voice

Naomasa Kondo

CSR Awareness Infused throughout the Group and Implementing CSR on an Individual Basis

What is the Cosmo's Concept of CSR?

As long as we are a corporate citizen, we must pursue both the objective of "securing stable profit base" and "fulfilling our social responsibilities". It is the Cosmo Oil Group's understanding that group-wide efforts to achieve these objectives in cooperation with stakeholders can lead us to enhanced corporate value. This is the basic CSR vision which the Cosmo Oil Group pursues.

How will we realize CSR?

A first step is to position CSR as a top priority within the management plan. In other words, CSR must be officially acknowledged in the "law" and the "code of conduct". Second, a system must be established. Not for Cosmo Oil alone, but one in which the entire group can feel a sense of unity and shared awareness. While we are a group of diverse companies specializing in different areas of business with distinct corporate cultures which must be respected, a larger partnership of companies with a shared objective can trigger a synergetic effect that will help to cultivate the foundation for CSR in a positive direction. The third step is implementation and verification. It is my hope that not only the top management of the affiliated companies lead by example, but also long-time and new company staffs, even temporary workers and suppliers raise their own CSR awareness and act accordingly. To that end, we are distributing this publication, Sustainability Report 2005, to all of our group company staffs. For all of you who are taking time to read this report, I look forward to hearing your opinions when you finish reading.



Naomasa Kondo
Managing Director (In charge of CSR)

Cosmo Oil Group's CSR

Two Perspectives on How to Engage in Social Responsibilities

All business activities entail social responsibility. And all business activities are the combined sum of the efforts of each company staff working at their job sites. Key to the fulfillment of social responsibility is each company staff's understandings of and practical implementation of CSR. We propose the following 2 perspectives whereby our company staffs think about social responsibility in their everyday work.

- 1) A basic perspective: To do what should be done, avoid things which should not be done, avoid wrongdoings and accidents, minimize the negative effects where accidents actually occur.
- 2) An added value perspective: To actively strive to fulfill the needs of various stakeholders, become a more attractive corporate group, and live in harmony with and develop along with society.

Implementation of CSR — Consolidated Plan and the Efforts Made by the Affiliated Companies and Production Sites —

With reinforcement of CSR added to the basic policy of the Consolidated Medium-term Management Plan for Fiscal 2005, the direction which the entire group should follow and the priority efforts were clarified in the plan, and they have been put into action accordingly. Yet, CSR has its basis on how each company staff could act in accordance with social responsibilities at the workplace, and therefore, the main responsibilities of each

of company staffs should differ slightly depending on a type of business characteristics and work they are engaged in. With this complex nature of CSR in mind, the affiliated companies, production sites, and departmental units are beginning to establish and put into action their own policies, systems, and implementation plans in addition to the Consolidated Medium-term Plan prepared for the entire group.



Compliance

For the Cosmo Oil Group to continue “corporate management with integrity” and fulfill its social responsibilities, all of its company staffs must regard compliance as “a given” and ensure full compliance throughout the course of their daily work. In the Cosmo Oil Group, compliance connotes not only complying with all social codes such as laws and the “Cosmo Oil Group Corporate Activity Guideline”, but an individual sense of conscience that is requisite if the group is to contribute to a sustainable society.

It is our understanding that even if compliance can be effectively promoted by the “system” coordination such as the evaluation of the work flow, business audit, risk management, at the heart of compliance lies an individual sense of ethics and morals.

The Cosmo Oil Group reevaluates and works to improve its “systems” on a regular basis, and the Corporate Ethics Committee serves as the core organization of the Group’s efforts to promote and implement compliance.

Cosmo Oil Group Corporate Ethics Committee

The Corporate Ethics Committee (Chairperson: President) that reports directly to the Board of Directors was established with the objective of maintaining and implementing the Management Vision and the Activity Guideline, and infusing awareness about compliance. In realizing these objectives, the Corporate Ethics Committee formulates a policy and implementation plan every year, and the Committee’s performance is reviewed by the Board of Directors.

Cosmo Oil Group Corporate Activity Guideline

The Corporate Activity Guideline is a compilation of codes of conduct that must be complied with a variety of areas and observed at every stage of business activities. The Corporate Activity Guideline applies not only to the directors and company staffs of the Cosmo Oil Group, but also to its temporary, seconded, contract, and part-time company staffs.



Related Data p. 58

Promoting Compliance

Placement of Staff Responsible for Promoting Corporate Ethics

The department managers, office managers at our company, and the Presidents of our affiliated companies are all in charge of promoting corporate ethics and compliance in their respective workplaces. These officers promote corporate ethics and compliance in their respective workplaces.

Establishment of the Cosmo Oil Group Corporate Ethics Consultation Helpline

In April 2003, we established a consultation service for receiving inquiries from both inside and outside of our company concerning any legal or ethical issues related to our company’s business operations. In order to ensure that those with inquiries do not feel disadvantaged in any ways, their anonymity is guaranteed and we began offering consultation services provided by an outside expert in Fiscal 2004.

Infusing Awareness

In addition to compliance trainings at all of our production sites and trainings that are in line with internal training programs, we also conduct an annual survey to measure the level of employee staffs’ understanding on compliance. Also, the Activity Guideline has been distributed not only in Japanese, but in English and Arabic as well. We plan to issue a textbook for educational purposes in Fiscal 2005.

Corporate Governance

As the foundation on which to realize “Corporate Management with Integrity”, the Cosmo Oil Group has structured its corporate governance system based on compliance. For the improvement of transparency and efficiency of our management, we have adopted an auditor based system of governance, we have clearly separated the decision making arm of management from the execution arm of management, and strived to improve the internal audit function as one that is independent from business operations and management.

Board of Directors

The Chairman, President and all Directors and Auditors attend the Board of Directors. The Board of Directors manages and supervises business, and also serves as the supreme decision-making body.

Executive Officers’ Committee

The Executive Officers’ Committee was introduced in July 2004 for the purpose of reinforcing corporate governance. The Committee, chaired by the President, is attended by all Officers at the managing director level and auditors. All decision-making concerning business management takes place at these Executive Officers’ Committee.

Executive Advisory Council

Newly established in July 2004, the Executive Advisory Council deliberate the performance evaluations submitted by the Board of Directors, and the proposals submitted by candidates for Director and Auditor. Four meetings have been held thus far.

Internal Audits

Cosmo Oil has established a department (the Audit Office) specifically designed to conduct internal audits. The results of the internal audits are reported to the top management. Feedbacks are then sent to corresponding departments, and they are supposed to promptly implement mitigation measures. The Consolidate Medium-term CSR Management Plan starting in Fiscal 2005 includes as one of its objectives the strengthening of the internal audit function of group companies, and steps are being undertaken to achieve the objective. Cosmo Oil has also incorporated CSR related themes into the ad-hoc set of audit items, and internal checks are scheduled to be conducted on their progress status.

The Cosmo Oil Group intends to continue formulating the corporate governance system that can effectively respond to changes in a social environment and business plan, as has been the case.

Risk Management

Risk management is also a factor of paramount importance in the course of materializing “Corporate Management with Integrity”. Following the identification of “risks” that lie inside and outside the company that can cause negative impacts on stable profit base and social responsibilities, the top management evaluates the extent of the risks and measures are implemented accordingly to avoid or minimize such negative impacts.

Risk Management Activities

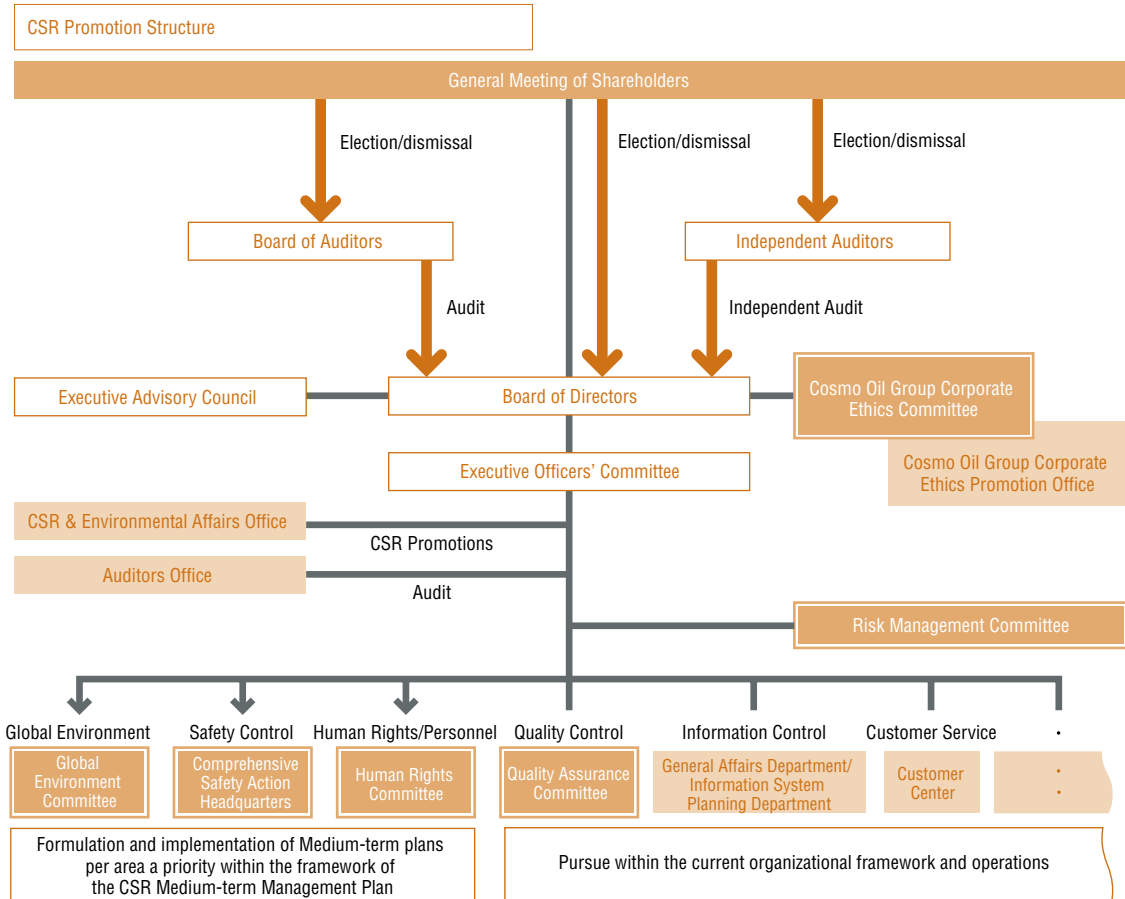
Since Fiscal 2003, Cosmo Oil has implemented a company-wide management cycle of risk identification, analysis, response, monitoring and evaluation on a yearly basis. To date, we have not only made systematic improvements to the internal rules, but also conducted an investigation on unforeseen events and made structural improvements. In Fiscal 2005, we set the introduction of a self-management type of risk management activities as an objective of the Consolidated Medium-term CSR Management Plan.

Risk Management Committee

The Risk Management Committee was established in July 2005 for the purpose of further improvement of the effectiveness of risk management, and group-wide risk evaluation and implementation of appropriate measures.

Thorough Awareness of Risk Management

In Fiscal 2004, we held seminars and simulation training for the board members concerning potential risk, taking into consideration the impact and frequency on the company. In the future, we would like to implement educational and training programs that are specifically designed for different career levels as an effort to nurture corporate culture that is responsive to the risks at the management and operation level.





✦ Maintaining Product Quality

In order to provide products that satisfy needs of customers and society such as product safety, less environmental impacts and user friendliness, product quality policy is clearly defined in "Chapter 1 of the Corporate Activity Guideline (relations with customers and users)". Additionally, in an effort to improve product quality and earn trust from customers, we actively conduct R&D for the quality development, while cross-department product quality assurance system was introduced.

Activity Guideline

- To develop and secure the continuous, stable provision of products and services in terms of quality/price/safety/environmental conservation, and so forth.
- To attach great importance to the maintenance of product quality and safety throughout the course of product research, development, manufacturing, storage, transportation and sales.

Quality Assurance System

To attain smooth execution of quality assurance in the long run, the Quality Assurance Committee was established at the headquarters office as a decision making body whose functions include the quality assurance policy/plan/other related matters. In order to implement functional and efficient quality assurance, the Quality Assurance Coordination Committee was established and quality assurance meetings held. To be more specific, a consistent quality management has been implemented according to a policy set by the Committee, at the stage of product research, development, manufacturing, storage, transportation and sales. With regard to fuel oil provided by the Cosmo Oil Group, we have issued a Product Specification with 3 classifications in accordance with customer attributes.

ISO Certification at Refineries

By requiring the 4 refineries of the Cosmo Oil Group for its major products ISO9001 accreditation, the international standard for quality management systems, we are able to implement a sustainable, objective, and transparent quality assurance program.

✦ Enhancing Awareness among Company Staffs

Only when each company staff develops CSR awareness and reflects CSR-related thinking in daily business operations can we say as a corporate group that "we are fulfilling our social responsibilities". What is meant by "company staff" here is not only the directors and company staffs, but all individuals who come into contact with our customers, suppliers, shareholders and other stakeholders. Below are some of the efforts that the Cosmo Oil Group is taking in order to heighten awareness of CSR among its company staffs.

Personnel Training by Career Level: Until now, we have conducted our training programs by subject area such as compliance or environmental measures. We reorganized our training programs from the perspective of CSR, and began offering in a comprehensive training program in Fiscal 2004.

Internal Company Bulletin: In every issue, we have published articles specifically addressing CSR with the goal of explaining CSR in a way that is easily understandable to all readers.

Meetings: Not only is it important to have an idea of CSR, but it is of even greater importance to be able to understand it and voluntarily act on it. In moving forward with the Consolidated Medium-term CSR Management Plan, we strive to hold as many discussions as possible in the offices and the workplace in order to further promote CSR activities at each workplace.

Incident and Recurrence Prevention

The Cosmo Oil Group strives to ensure compliance and improve transparency of its business operations in an effort to fulfill its social responsibilities and live in harmony and symbiosis with society. Yet, it is regrettable that our business operations caused incidents that led to social concerns. The Cosmo Oil Group is committed to investigating the causes, cultivating greater awareness among all of our company staffs, implementing capital investment, to name a few, as a way to prevent recurrence.

The Chiba Refinery Oil Spill

On May 12, 2005, a portion of the oil that leaked from the manufacturing facility at the Chiba Refinery spilled into the ocean. It is estimated that the amount of the spill was up to approximately 60 liters.

Response Measures

Once we were able to confirm that the oil that spilled into the ocean left films of oil between the Yoro River riverbank and river mouth that faces the Tokyo Bay drain outlet, we extended the oil boom to prevent further spreading, and implemented an oil recovery operation. After obtaining permission from the relevant authorities the following day, we removed the oil boom and completed our operations.

Causes

On the day of the accident, the production facility that was the source of the spill was in the midst of executing a water drive procedure for removing the residual oil in the machinery after suspending operations in preparation for its regular maintenance routine (when industrial water is run through the machinery, and the residual oil in the machinery is pushed out by the industrial water and collected into a tank). However, the amount of water being used within the facility increased suddenly, then the water pressure of its industrial water declined, the residual oil in the machinery flew backwards into the industrial water supply, and leaked into the wastewater.

Prevention Measures

Measures to Prevent Backward Flow into the Industrial Water Supply

- 1) The water driving operation was superceded by a method that uses a pump for increasing water pressure, and a portion of the piping that connects the oil supply and the industrial water supply was removed. Cutting one supply off from the other will prevent further backward flow of oil into the pipes that supply industrial water.
- 2) For the water driving operation, the size of the orifice flowmeter for the industrial water supply was reduced to an appropriate size so as to protect the pump.

Measures to Prevent Spills from the Tokyo Bay Drain Outlet

- 1) Oil recovery unit was permanently installed at the guard basin*¹ so that in the event of another oil spill, oil recovery can be executed without delay.
- 2) In order to allow for faster extension of the oil boom, the storage location of the oil boom was moved to a location closer to the Tokyo Bay drain outlet.

Implementation of Training Programs

With the lessons learnt from the recent accident in mind, we make an effort to revise relevant operational standards and document the important points which could be utilized for education and notification in the safety training programs. It is also part of our efforts to conduct the field exercise using materials and equipment for oil spill prevention so as to conduct swift actions.

*1 A wastewater plug used for stabilizing the flow of wastewater and temporarily collecting wastewater.

Unauthorized Usage of the "Cosmo the Card"

On October 29, 2004, we received notification from one of the companies in charge of providing handling services for the "Cosmo the Card" that a company staff was involved in an unauthorized usage of the cards. We considered this a serious matter and established an Investigative Task Force comprised of attorneys (including Attorney Yasushi Murakami, and headed by Managing Director Naomasa Kondo) on the following day, October 30th. With the cooperation of an external investigative support service specializing in unauthorized transactions, a full-scale investigation was conducted, and the following facts were discovered.

Description of Unauthorized Usage

A staff of the company illegally used the cards that were returned to the card center without being received by the members because of their absence or unspecified address among other reasons. It followed that the staff used the cashing service to obtain cash.

Scope of the Unauthorized Usage of the "Cosmo the Card"

As a result of the investigation, there were 2,054 cards that could possibly have been used illegally. While the members did not suffer any damage, relevant members were notified of the incident individually.

Concerning Prevention of Recurrence

Not only was an internal audit conducted, but an audit by outside auditors was conducted as well. The operations and control methods of the card center were reviewed so as to prevent recurrence of a similar incident in the future. On June 14, 2005, the Investigative Task Force was disbanded, and management is being implemented in the daily operations.

Credit Card Purchase Receipts Theft at our Company's Affiliated SS

On the night of June 26, 2005, the collection bag containing proceeds from sales and sales receipts was stolen at the service station counter of an affiliated company of ours in Tenri City, Nara Prefecture. The collection bag contained 254 sales receipts from the service station (of which 78 were credit card receipts). In addition, in the dawn hours of July 12, 2005, customer sales receipts of credit card purchases (a total of 152 receipts) were stolen from the service station counter of an affiliated company of ours in Machida City, Tokyo. The credit card receipts that were stolen contained information such as the customer's name, card number, and expiration date.

Response Measures

Immediately after the incidents occurred, damage claims were filed with the police, the customers who were the card holders of the sales receipts that were stolen were identified and notified so as to prevent damage, and procedures to prevent the unauthorized usage of personal information.

Concerning Prevention of Recurrence

While the current Cosmo POS machines/V-POS implement non-display of the card expiration date and a portion of the member identification number on the POS receipts, this measure was extended to older C-POS receipts as well. In the event of that sales receipts are lost or stolen in the future, the customers would not be affected.



Strengthening Management Bases

盤石な経営基盤の確立

The New Consolidated Medium-term Management Plan was launched with the aim of enhancing corporate value. In order to adapt to the changing environment surrounding petroleum products, the New Consolidated Medium-term Management Plan was commenced in Fiscal 2005 with the aim of enhancing the corporate value of the Cosmo Oil Group.

✦ Consolidated Group Operating Income Target: 88 Billion yen

The Cosmo Oil Group which will be celebrating its 20th anniversary in 2006 considers 2005 a watershed year for measuring the total aggregate sales of the past 20 years, and for setting the benchmark for the coming 20 years in which we will strive to achieve exponential growth. Taking into account the need to adapt to the ever changing environment surrounding petroleum products, and we launched the New Consolidated Medium-term Management Plan with the goal of achieving further development.

Our development based management vision involves a major shift in strategy from one that focused on cost reduction to the one that puts more emphasis on maximizing revenues. Specifically, 2 major measures that will be undertaken to improve our oil profitability are the reinforcement of the competitiveness and financial strength of our refineries and service stations by making aggressive capital investments, and the expansion of our business domain by strengthening business areas peripheral to our petroleum business, namely, oil exploration/production and the petrochemical business.

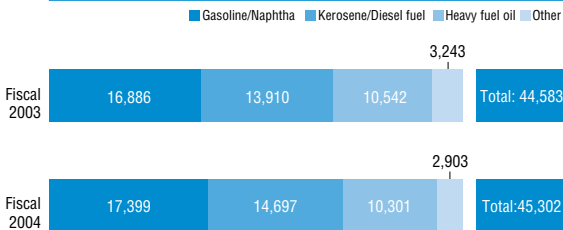
Consolidated Group Earnings Target/Indicator

Fiscal 2007 Earnings Target		Fiscal 2007 Financial Target	
Operating income	88 billion yen	Interest-bearing debt	428 billion yen
Ordinary income	82 billion yen	Shareholder's equity	320 billion yen
Net income	41.2 billion yen	Debt dependence ratio	32%
ROE	13.6%	Shareholder's equity ratio	24.1%

Financial Information

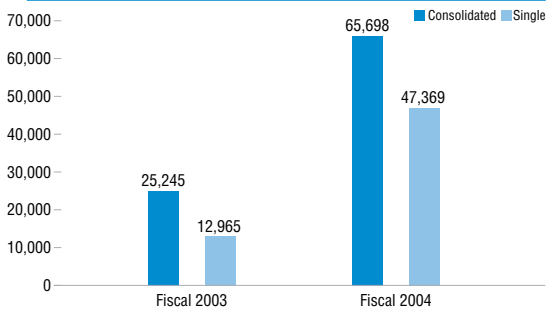
Sales Volume

Unit: 1,000 k-t



Operating Income Levels

Unit: Million yen
(Rounded down to the nearest million yen)

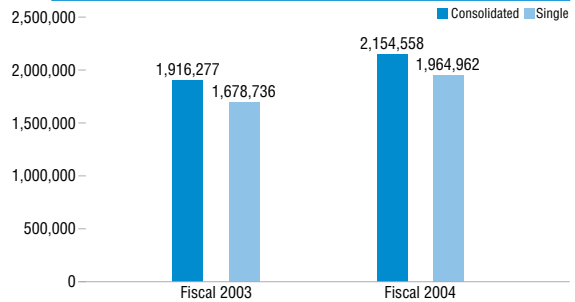


Unit: hundred-million yen

	Fiscal 2005	Fiscal 2006	Fiscal 2007
Net sales	21,600	18,900	19,200
Operating income	710	770	880
Ordinary income	700	720	820
Net income	320	342	412
Total assets	13,171	13,500	13,300
Interest-bearing debts	4,662	4,480	4,280
Shareholder's equity	2,548	2,840	3,200
ROE	13.3%	12.7%	13.6%
ROA	2.4%	2.6%	3.1%
Debt dependence ratio	35%	33%	32%
Shareholder's equity ratio	19.3%	21.0%	24.1%

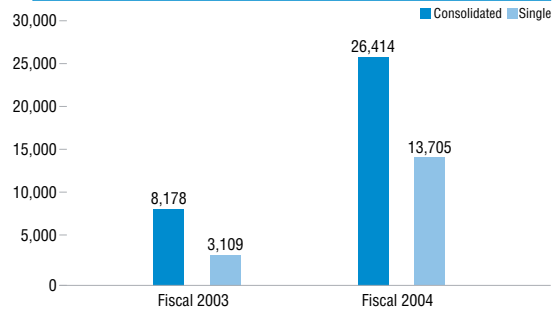
Net Sales Levels

Unit: Million yen
(Rounded down to the nearest million yen)



Net Income Levels

Unit: Million yen
(Rounded down to the nearest million yen)



External Evaluation of Environmental Management

FTSE4 Good Global Index

FTSE, a joint venture company between the Financial Times and the London Stock Exchange, publishes various stock indexes. In 2005, the Cosmo Oil Group was included in the FTSE4 Good Global Index, an international social responsibility investment stock price index, for the 3rd consecutive year.

Inclusion into SRI Funds

It is generally held that companies that are better at handling of environmental concerns could hold a competitive advantage and thus produce larger profits vis-a-vis investments. The Cosmo Oil Group is listed as one of Japan's environmentally competitive companies in various funds that invest in companies that present potential for development (an "Eco Excellent Company").

People's Voice



Kenichi Taki
Assistant General Manager
Accounting Department

While the Accounting Department does not come into direct contact with stakeholders outside of the company, we are in fact deeply involved in CSR. Our compliance program serves as the bedrock to our contributions to CSR. We ensure that the daily flow of money is in compliance with tax laws and accounting standards, identifying any issues and implementing risk management measures promptly as needed. For example, if a sharp rise in crude oil prices requires reevaluation of performance figures, we may recommend swift disclosure of such information, or we may give instructions to implement improvement measures to rectify inefficient business practices. Our catch phrase nowadays is "Just say NO!" regardless of company politics. We also offer seminars to management level company staffs who have decision-making authority. These seminars help promote greater understanding and implementation of compliance. Interestingly, the number of participants in these seminars willing to learn about the concept of compliance have been steadily increasing. We have seen a lot of enthusiasm from everyone. This is a time when I feel enhanced awareness throughout the company.

Kenichi Taki

Living with Our Planet.



Living with Our Planet.

**In Order to Realize a Sustainable Society,
We Face up to Environmental Issues
on a Global Scale and
Aim to Seek The Ideal Form of Energy.**

**As a Corporate Citizen, We Practice
Environmental Conservation
on an Everyday Basis,
While Global Environmental Issues
Are also Our Concerns.
Each Effort We Make Aims to Set
a New Paradigm for the Future
and a Trend in a Society.**

We cannot avoid issues concerning the global environment in our business that handles petroleum energy. While petroleum products have been a propelling power behind our lives of abundance and social development, mass consumption of energy has also imposed impacts on the global environment. The Cosmo Oil Group faces up to this reality. We extend sincere efforts to do what it takes to reduce environmental impacts in all aspects of our petroleum products business, from the manufacturing phase, transportation, sales, to consumption. We consider this to be our most important responsibility.

In Our Effort to Build a Sustainable Society, the Consolidated Medium-term Environmental Plan Fiscal 2005 – 2007 Was Launched

In order to realize CSR, beginning in Fiscal 2005, we formulated the Consolidated Medium-term CSR Plan. Our work with the environment, a pillar of the CSR Plan, is moving forward upon taking into consideration the results and issues identified by the first Environmental Medium-term Plan (for Fiscal 2002 – 2004) and based on the Consolidated Medium-term Environmental Plan.

The 2 pillars of the Consolidated Medium-term Environmental Plan

- Efforts to reduce the environmental impact
- Efforts to realize a sustainable society on a global scale (environmental conservation and awareness raising)

Reference

Related Data p. 64



Results of the Medium-term Environmental Plan

環境中期計画活動実績

Fiscal 2004 was the last year of the Medium-term Environmental Plan that was launched in Fiscal 2002. The following highlights the major results of the Medium-term Environmental Plan and introduces 3 achievements of Fiscal 2004.

Results of Blue Earth 21

We outlined 3 major themes in the Blue Earth 21: “Zero Emissions”, “Green Purchasing”, and “Soil Environment Measures”, and promoted relevant activities.

3 Achievements of Fiscal 2004

In Fiscal 2004, we were not only able to achieve “supply of sulfur free gasoline and diesel fuel”, but we were also able to make steady progress in the “practical application of fuel cells”. In addition, we executed the “contract for obtaining emission credits to future 1 million t-CO₂”, a countermeasure to climate change.

Results of the Medium-term Environmental Plan “Blue Earth 21”

The company’s united environmental effort as outlined in the First Medium-term Environmental Plan (Fiscal 2002 - 2004) was completed at the end of Fiscal 2004. The nine themes of the plan were implemented by each division and ultimately rendered many achievements. However, some issues still remain. We formulated the Second Medium-term Environmental Plan (Fiscal 2005 – 2007) in April 2005, which is a consoli-

dated plan for the entire Cosmo Oil Group, with focus on challenging new issues, as well as striving to resolve the unresolved issues in the First Medium-term Environmental Plan. The following is a summary of the current status of efforts being made based on the First Medium-term Environmental Plan and its three priority themes: zero emissions, green purchasing, and soil environment measures.

Zero Emissions

Reduction of Industrial Waste

In the effort to reduce industrial waste to as close to zero as possible (zero emissions), compared to our goal of a 1.5% landfill rate*1, we achieved 1.2%. The average landfill volume at refineries for Fiscal 2002 through 2004 was reduced by 88% compared to Fiscal 1990, exceeding the industry goal of 67%.



Resource Conservation/Office Clean

The Office Clean Team was formed within the company to promote “Reduce, Reuse, Recycle”. Copier paper was reduced by 8% (approximately 1.5 million sheets) as compared to Fiscal 2003, and computer paper was reduced by 33.3% (approximately 1.6 million sheets) in Fiscal 2003 as compared to Fiscal 2002. These levels were maintained in Fiscal 2004.



*1 Landfill rate (%) = Landfill volume/Generated volume
The above figure is the sum of all industrial waste from the refineries, the Kasumi Power Station, and oil depots.

Green Purchasing

For environmentally friendly products that are purchased range from office supplies to building materials, catalytic agents and containers, the voluntary standards are established for each product category. Over time, the number of product categories is planned to be increased. Voluntary standards have also been formulated for suppliers, and preference is given to those suppliers who respond in kind to our environmental measures. On the other hand, we are making efforts to persuade those suppliers who have not yet responded to our suggested standards. At present, approximately 500 companies have responded to our standards.



Soil Environment Measures

In order to avoid environmental risks caused by soil contamination at service stations or oil depots, we have been introducing measures to promote prevention and minimize environmental impacts in the even of a spill.

For the purpose of implementing an effective and planned effort, in August 2004, an expert group was formed in a department in charge of safety and environmental control. In Fiscal 2002, the Cosmo Oil Group conducted an interview-based investigation concerning soil contamination at affiliated service stations. Based on the results of those interviews, the Cosmo Oil owned service stations began conducting planned soil investigations in order of priority, and some specific locations were given guidance as necessary.

By Fiscal 2004, approximately 200 soil investigations were conducted at service stations including those that are no longer in operation. Based on the investigation results, soil remediations were undertaken at necessary locations. We actively continue the inspection at a rate of approximately 100 per year and we also press forward the preventative measures such as adopting the environment considered designs at service stations. Soil investigations are conducted at other business sites as well, and necessary measures are implemented based on those results. In Fiscal 2004, we spent approximately 1 billion yen on these soil environment measures.



Themes of Fiscal 2004

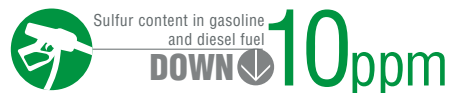
In January 2005, We Developed Sulfur Free Gasoline and Diesel Fuel (Sulfur Content of Less Than 10ppm)

On January 1, 2005, Cosmo Oil began distributing sulfur free gasoline and diesel fuel. In addition to using the already existing direct desulfurization unit at the Sakaide Refinery, FCC gasoline desulfurization units were newly installed at the 3 refineries in Chiba, Yokkaichi, and Sakai, contributing to the realization of desulfurized gasoline. It became possible to produce desulfurized diesel fuel by using a new catalyst that was developed exclusively by Cosmo Oil.

The low sulfur content gasoline and diesel fuel standards will be set at 10ppm or less in the EU beginning in 2009, and the upper limit of sulfur in gasoline will be set at 80ppm with an average of 30ppm and 15ppm or lower in sulfur of diesel fuel in the United States from 2006. In Japan, the government has set regulations requiring diesel fuel to be sulfur free by 2007, and gasoline by 2008. We were able to realize sulfur free diesel fuel and gasoline well in advance of January of 2005, making Japan the fastest country in the world to make sulfur free gasoline and diesel fuel a reality.

Two benefits are anticipated as a result of developing desulfurized gasoline (with a sulfur content of 10ppm or less). One is a reduction in the amount of CO₂ that is emitted thanks to improved fuel consumption. This is because sulfur free gasoline should be necessary as a fuel for direct fuel injection engines and lean-burn engines that are beginning to become developed and widespread. The other is a reduction in restricted automobile gas emissions. By lowering the sulfur content in gasoline and diesel fuel, the endurance of emission gas treatment equipment improves. As a result, restricted gas emissions such as nitrogen oxides (NO_x), carbon monoxides (CO), hydrocarbons (HC), and particulate matter (PM) should be reduced.

In this way, desulfurization is expected to produce two positive effects, "reduction of CO₂ emissions due to improved automobile fuel consumption", and "reduction of NO_x and PM automobile gas emissions", both of which are new ways to address global environment conservation.



People's Voice

"Sulfur Free" refers to a state where the sulfur content of gasoline or diesel fuel is reduced to practically nonexistent levels (10ppm or less). The objective of desulfurization is to increase the fuel consumption of automobiles and to reduce the amount of CO₂ emissions (a countermeasure against climate change), and to tackle the problems of air pollution by reducing NO_x and PM.

For a producer like us, desulfurization places an enormous burden in terms of production and cost. However, we were able to begin supplying sulfur free gasoline and diesel fuel in January 2005. Just 2 years after the top management proclaimed that "we will realize sulfur free fuel", we accomplished the feat. I think it is fair to say that meeting this objective far in advance of the regulatory deadlines set forth by the government, and being the first in the world to introduce these measures are truly a revolutionary accomplishment.

Satoshi Ito

Satoshi Ito
Corporate Planning Department



Steady Advances in the Practical Application of Fuel Cell

In April 2005, we initiated a cross sectional team on fuel cell for the purpose of its practical application that is one of the important goals for our company as an integrated energy company.

1. Efforts towards Realizing Practical Applications for the Stationary Fuel Cell

We are currently in the midst of studying a 1kW grade stationary fuel cell. We placed a stationary fuel cell using LP gas as fuel at the Isaka dam cycle park in Yokkaichi City in Mie prefecture, and began conducting field tests in March 2005 at a facility within the park which is supplied with electricity and heated water.

In addition, we are currently conducting a survey on household energy use, and evaluating energy efficiency and economic benefits of introducing stationary fuel cells for household use. The data gathered from these studies will be used in the "Large Scale Field Operation Concerning Stationary Fuel Cells" to be conducted by the Ministry of Economy, Trade and Industry, and will also be applied to the development of practical applications of kerosene fuel cells.

2. Efforts towards Realization of the Hydrogen Station

In order to create a hydrogen station accompanied by the gas supply function, we are working to develop small, high efficiency hydrogen production equipment. In addition, taking advantage of the knowledge and experience gained at the JHFC Yokohama-Daikoku Hydrogen Station*¹ that has been in operation since March 2003, we are working on a business model for hydrogen stations.

*1 JHFC is a project being implemented by the Ministry of Economy, Trade and Industry as part of their research assisting business in the field testing of polymer electrolyte fuel cell systems and is a combination of the "Fuel Cell Vehicle Demonstration Study" and the "Demonstration Study of Hydrogen Fueling Facilities for Fuel Cell Vehicles".

1 Million t-CO₂ Emission Credit Purchase Agreement

Being a business that handles fossil fuel, we attach great importance to the issue of greenhouse gas emissions that are generated directly or indirectly by our business. In view of sustainable development of our society, we feel this is an issue that we should confront head on as a management priority. A specific example of our efforts in this area includes our participation in the GG-CAP (Green Gas Credit Aggregation Pool) which is an international organization for obtaining emission credit, through which we have executed a contract to obtain emission credit for 1 million t-CO₂ in the future.

This is an agreement to purchase credits from the Kyoto Mechanism, namely, CDM (Clean Development Mechanism*¹) and JI (Joint Implementation*²) projects, through the first private emission credit purchasing scheme created by Natsource, an emission credit brokerage company.

*1 The acquisition by a developed country which has set reduction goals of the reduced portion of greenhouse gasses as a result of greenhouse gas reduction projects being implemented in developing nations which do not yet have a reduction goal.

*2 The transferring or acquisition among developed nations of reduced units of greenhouse gasses as a result of greenhouse gas emission reducing or absorbing projects implemented by the relevant countries.



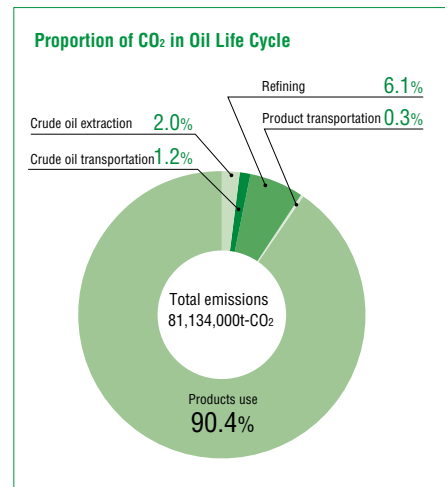
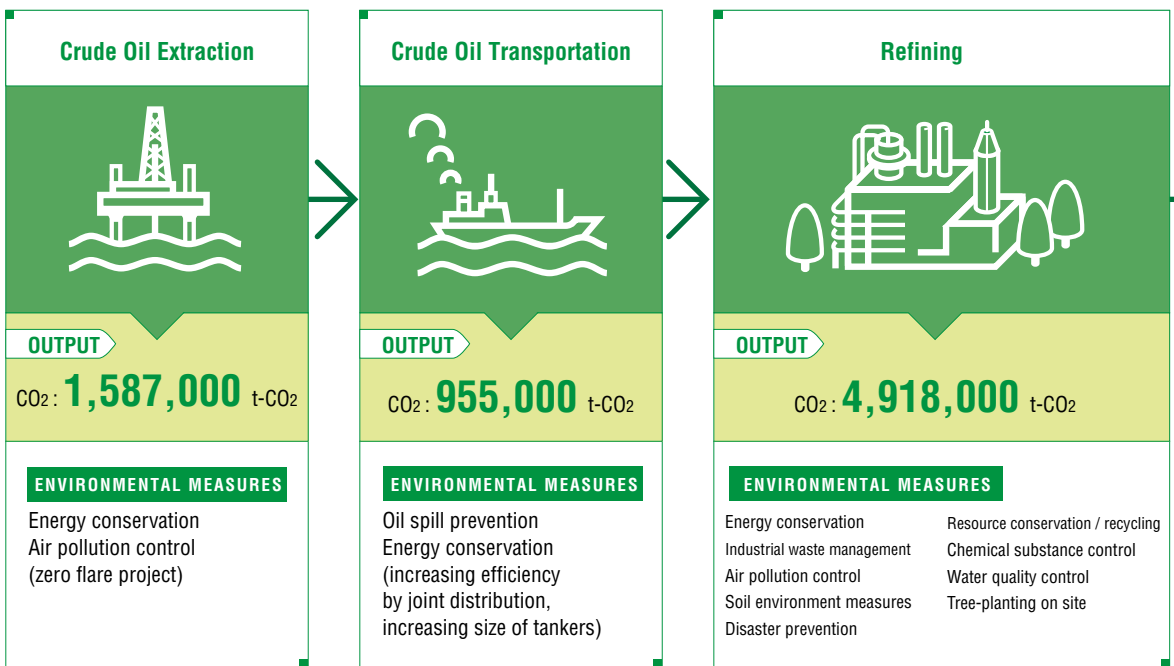
Environmental Impact

事業活動における環境負荷

In order to deliver products that have small impacts on the environment, it is necessary to look across the life cycle of oil, including the stage of use by customers.

It is important to look at the whole picture in the process of continuous improvements by not only evaluating environmental impacts at one stage and but also attempting to grasp how they could affect other stages.

In Fiscal 2004, the CO₂ emissions during use by customers decreased by 1,718,000 tons compared with the preceding year due to a decrease in the volume of products produced.



User's Voice

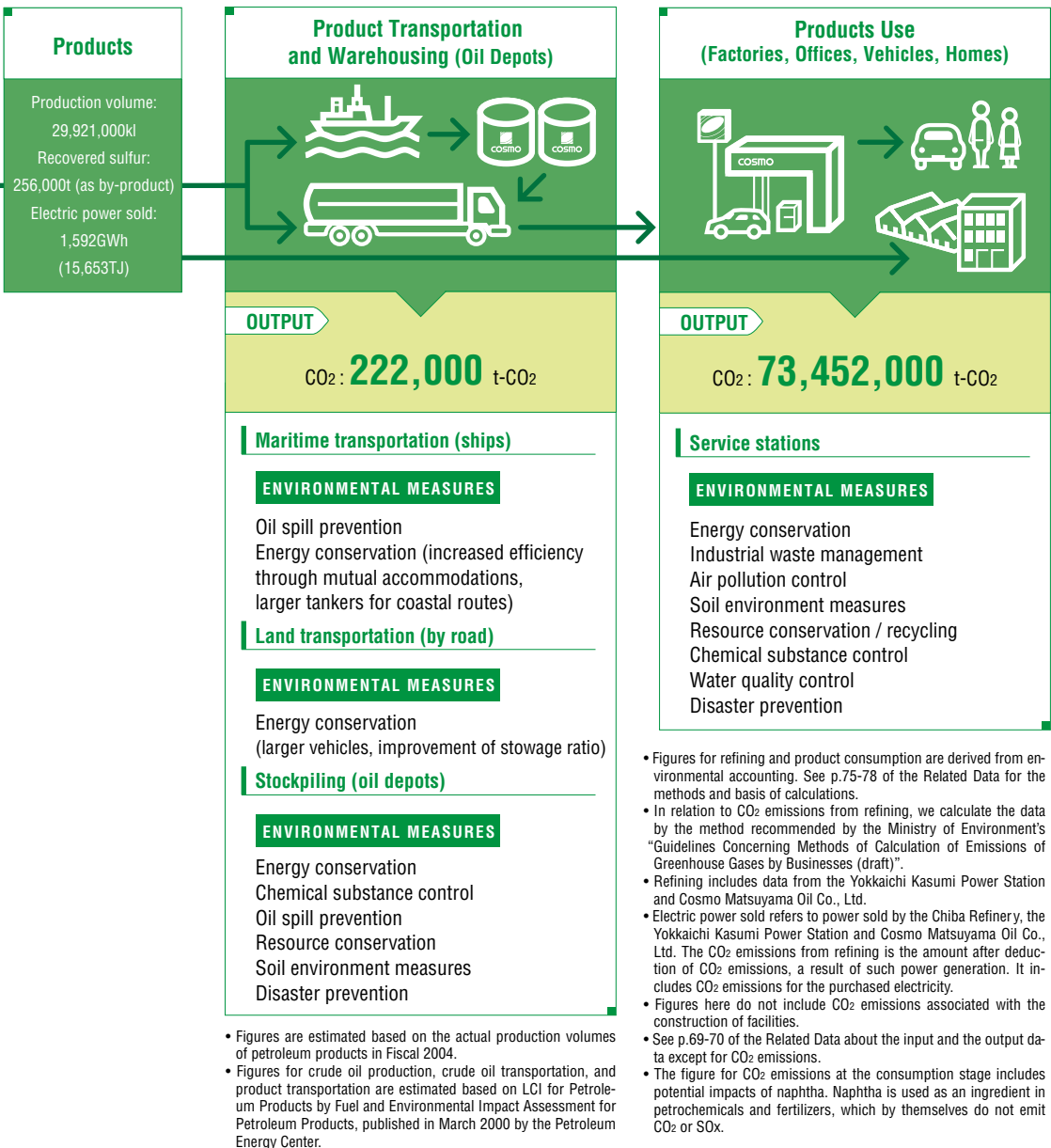
Masanori / Keiko / Toshimune Koide



Customers
Masanori / Keiko / Toshimune Koide

We often travel as a family on holidays. We like to see the fireflies in the high plains and breathe the fresh air. I want to expose my son to as much nature as possible! And yet, the more we drive our car, the greater burden we are placing on our environment. For example, we try to conserve energy by using as little air conditioning as possible at home, but if we open our windows, we can hear the loud noise of our neighbors' air conditioners. I often find myself frustrated over just how little one person can accomplish alone.

It was in 2003 that I became a member of Cosmo the Card "Eco". I joined because I was interested in their Eco measures, ETC availability and efficient points saving system. I compared many of the companies on the web and made my decision. Since then, I have enjoyed the benefits of internet shopping on Cosmo's member website (<http://www.g-mile.com/>) and accumulating points. It makes me happy to know that my use of the card contributes to environmental conservation. Because I really want to conserve nature for my son's generation to enjoy.



- Figures are estimated based on the actual production volumes of petroleum products in Fiscal 2004.
- Figures for crude oil production, crude oil transportation, and product transportation are estimated based on LCI for Petroleum Products by Fuel and Environmental Impact Assessment for Petroleum Products, published in March 2000 by the Petroleum Energy Center.

- Figures for refining and product consumption are derived from environmental accounting. See p.75-78 of the Related Data for the methods and basis of calculations.
- In relation to CO₂ emissions from refining, we calculate the data by the method recommended by the Ministry of Environment's "Guidelines Concerning Methods of Calculation of Emissions of Greenhouse Gases by Businesses (draft)".
- Refining includes data from the Yokkaichi Kasumi Power Station and Cosmo Matsuyama Oil Co., Ltd.
- Electric power sold refers to power sold by the Chiba Refinery, the Yokkaichi Kasumi Power Station and Cosmo Matsuyama Oil Co., Ltd. The CO₂ emissions from refining is the amount after deduction of CO₂ emissions, a result of such power generation. It includes CO₂ emissions for the purchased electricity.
- Figures here do not include CO₂ emissions associated with the construction of facilities.
- See p.69-70 of the Related Data about the input and the output data except for CO₂ emissions.
- The figure for CO₂ emissions at the consumption stage includes potential impacts of naphtha. Naphtha is used as an ingredient in petrochemicals and fertilizers, which by themselves do not emit CO₂ or SO_x.



Crude Oil Production, Transport, and Stockpiling

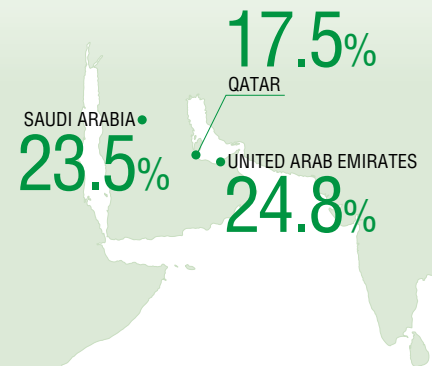
原油生産・輸送・備蓄

We are making a ceaseless effort through all stages of crude oil production, transport and stockpiling, by reducing environmental impacts in the oil-producing country. We also make environmental considerations through the transport process so as to protect the marine environment, and even improve the fuel consumption ratio of our tankers.

Importing Crude Oil

We import crude oil primarily from the Middle Eastern countries, such as the United Arab Emirates and Saudi Arabia. We are making efforts to diversify the supply sources of crude oil to attain a steady delivery of energy.

In 1968, we established Abu Dhabi Oil through which we also develop our own crude oil supply.



Benefit of the Zero Flare Project

During crude oil production, the associated gases such as H₂S and CO₂ are generated. Zero Flare, a state where there are no emissions of SO_x or CO₂, was achieved in May 2001 at the Mubarraz, the Umm Al Ambar and the Neewat Al Ghalan oil fields all of which are operated by Abu Dhabi Oil's 100% owned company, a group company of the Cosmo Oil Group. Zero Flare was made possible by reinjecting the whole volume of associated gas, which had previously been burnt off into the air, into the oil reservoir with the help of a large compressor (flare refers to the flame arising from burning the associated gas).

The success of this project not only contributes to prevention of air pollution, but also reduces greenhouse gases by the equivalent of 200,000 tons of CO₂ per year. This is equivalent to a forest absorbing about 12,000 times the volume of CO₂ that could be held by the Tokyo Dome.

Prevention of Oil Spills by Double Hull Structure in Case of Accidents

Since 1998, we have been converting the ad-hoc structure to the double hull structure in order to be ready for maritime accidents. The double hull tanker is characterized by the double structure, and even if it gets damaged in the event of accidents, the oil does not leak from the oil tank, located within its inner section. As of March, 2005, the double hull structure has been introduced into 8 VLCC (Very Large Crude Carriers) on regular line among ten such carriers.

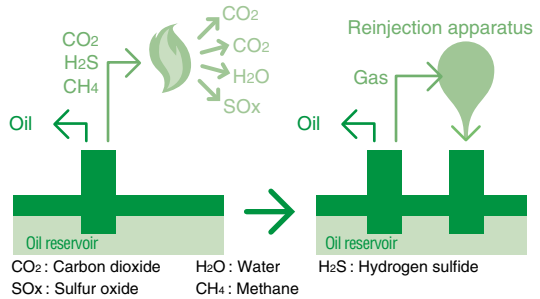
Prevention of Impact on the Marine Environment

Crude oil is transported by crude oil tankers through the Straits of Malacca to Japan. The tankers are navigated by highly experienced crews. The most advanced technologies such as collision avoidance systems and the double hull structure have been incorporated into the vessels so as to prevent oil spills caused by marine accidents. We also pay careful attentions to how we can best conserve the marine environment by taking cautionary measures such as the regular use of oil booms during loading and unloading. Furthermore, ballast water is exchanged in the outer sea in accordance with the restrictions and preferences of the oil-producing country in order to minimize the impact on the sea's ecosystem.

Stockpiling of Crude Oil

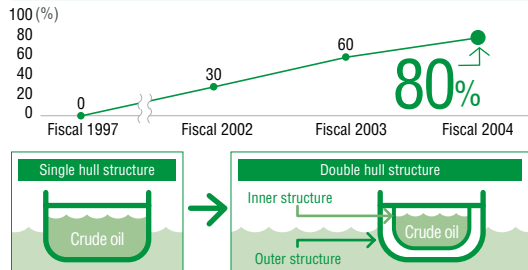
In order to secure a stable supply during emergencies, Japanese oil importers and refiners are required to maintain a stockpile of 70 days' supply of petroleum products. As of the end of March 2005, the stockpile is 74 days' supply, while the government maintains a stockpile of 92 days' supply. The total private and public stockpile is equivalent to 166 days' supply of oil consumption in Japan.

Concept Sketch of Zero Flare Project



The first stage of Zero Flare, the sour gas injection project, was highly praised by the Abu Dhabi National Oil Company (ADNOC). It was awarded 1st prize among 62 entrants in the ADNOC HSE Awards in 2000.

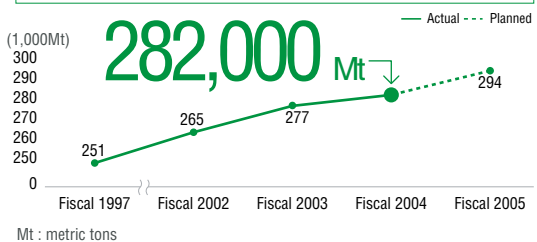
Trend in Ratio of the Double-hulled Tankers on Regular Line



Efficiency in Transport

It takes 20 days for oil tankers from the oil producing countries to reach Japan. The amount of crude oil a 300,000-ton class tanker can carry fulfills Japan's total oil demand for half a day. In order to increase the efficiency of our transport operations, we are pursuing economies of scale by switching from 200,000-ton to 300,000-ton class tankers. Furthermore, we make efforts to achieve efficient transportation by combining shipments with the Nippon Oil Corporation, with which Cosmo Oil established the Nippon Global Tanker Co., Ltd. Such upsizing and more efficient transportation tanker also serve to improve the fuel consumption as a whole.

Average Load Weight





Refineries

製油所

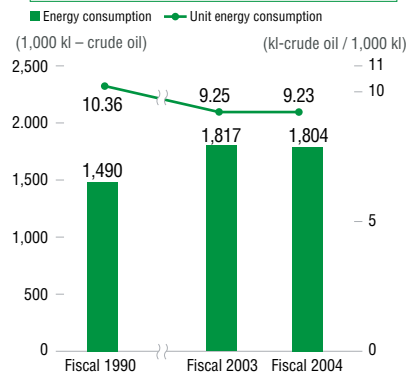
The refining process of crude oil produces industrial waste, air and water pollution, hazardous waste, and other factors that impact the environment. By faithfully implementing a multitude of measures, our refineries aim to reduce the impact on the environment on a daily basis.

Promoting Efficient Use of Energy

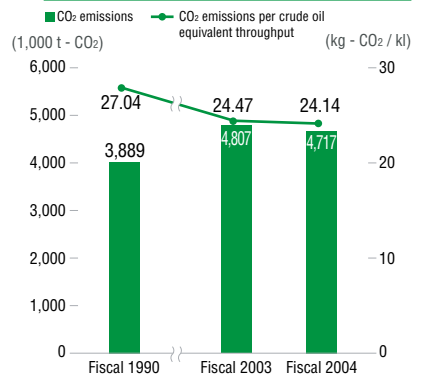
At our refineries, we are committed to energy conservation through introduction of high-efficiency equipment and improvement of operational management systems. In Fiscal 2004, we introduced high-efficiency equipment such as the world's first high-efficiency plate type heat exchangers (3 fluid heat exchanger*) and inverter control motors. With regard to the daily operation of the equipment, we have improved fuel and steam consumption by optimizing the temperatures of the atmospheric distillation tower furnaces, and reducing the amount of steam injection in gas turbine generators. As a result of these efforts, unit energy consumption level for Fiscal 2004 was 9.23 kl – crude oil/1,000 kl, and we achieved our goal to reduce unit energy consumption by 10.9% as compared to Fiscal 1990. This result exceeded the goal of the Voluntary Action Plan set forth by the Petroleum Association of Japan (10% reduction as compared to Fiscal 1990 by Fiscal 2010).

*1 We participated in PEC's (the Petroleum Energy Center) petroleum refinement upgrading technology development project and introduced this equipment.

Energy Consumption (at all 4 Refineries)



CO₂ Emissions (at all 4 Refineries)



Reference [Related Data p. 72, p. 81 - 88](#)

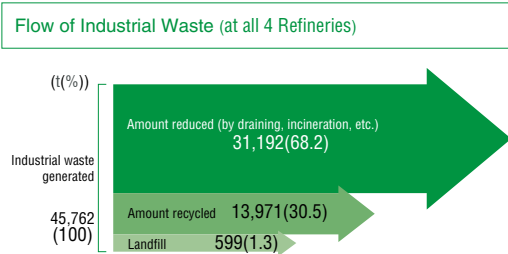
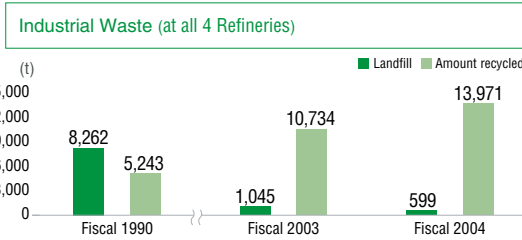
Reduction of Industrial Waste

The refineries generate industrial waste as a result of the oil refining process. By reducing and separating industrial waste, and by utilizing waste disposal methods conducive to recycling, our refineries are endeavoring to achieve zero emissions and reduce the amount of landfill.

For example, catalyst that was used during the oil refining process has been recycled and reused or used as raw material for cement, and the metals contained in the catalysts have been also recovered for recycling purposes. We also endeavor to decrease the excess sludge arising from the wastewater process by introducing new sludge decreasing technologies that we developed ourselves, and by reducing the volume of sludge by draining or incineration.

In Fiscal 2004, 3 of the refineries underwent major maintenance operations, and the waste that was generated from those operations were also separated and recycled.

As a result of these efforts, the total landfill for Fiscal 2004 was 599 tons, a 93% reduction as compared to Fiscal 1990. This result far exceeds the goal of the Voluntary Action Plan set forth by the Petroleum Association of Japan (a 67% reduction in the total amount of landfill as compared to Fiscal 1990 by Fiscal 2010). In order to make further improvements, we have set ourselves a voluntary goal: Zero emissions – landfill rate less than 1.5%. While we were able to reach 1.3% in Fiscal 2004, we are continuing our efforts to strive for further reductions.



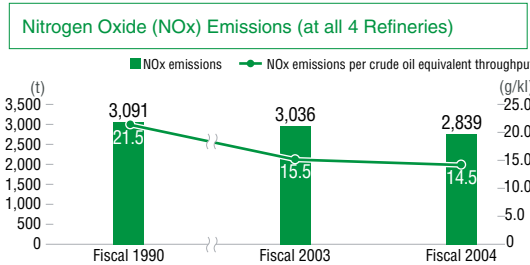
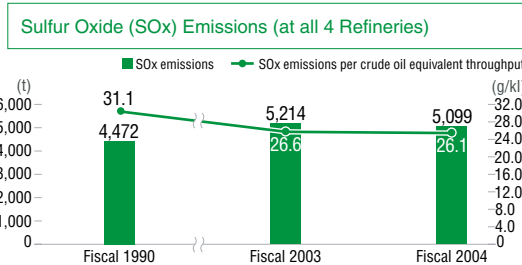
Prevention of Air Pollution

Sulfur Oxides (SOx) and Nitrogen Oxides (NOx)

The heating furnaces, boilers, and other equipment used during the refining process emit SOx and NOx. At our refineries, we use fuels which have low sulfur and nitrogen content for our heating furnaces and boilers so as to reduce the amount of SOx and NOx emissions. We introduce low NOx burners to reduce the generation of thermal NOx, a substance generated

when nitrogen reacts with oxygen at combustion. We also introduce flue gas desulfurization and denitrification equipment to remove generated SOx or NOx from exhaust gas. In addition, we remove small particles in exhaust fumes using electrostatic precipitators.

As a result of these efforts, all of our four oil refineries' emission levels are under the local legal limits.



Reference → Related Data p. 72, p. 81 - 88

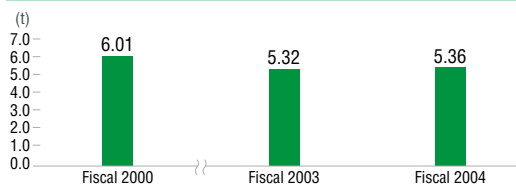
• Measures concerning Hydrocarbons and Benzene

Some petroleum products such as gasoline contain volatile components. In handling these products, we traditionally have stored them in a floating roof tank in order to control evaporation, and have also installed equipment that collects the hydrocarbons that evaporate when these petroleum products are shipped.

In May 2004, the Amended Air Pollution Control Act relating to emissions reductions of volatile organic compounds (VOC) was issued. The restrictions concerning emissions reductions will be applicable to the storage tanks at our refineries. As far as the Cosmo Oil refineries and oil depots, appropriate measures have already been implemented.

Benzene, specified as a hazardous air pollution substance, is a hydrocarbon. We are striving to reduce the benzene content in gasoline, controlling benzene emissions through such measures as described above.

Emissions of Hazardous Air Pollution Substance (at all 4 Refineries)



Reference

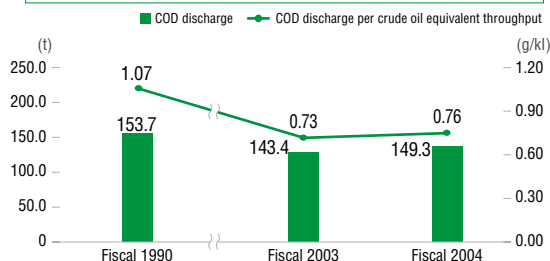
Related Data p. 72

✚ Prevention of Water Pollution

Seawater or industrial water is used in the oil refining process at our refineries. As oil content, odorants substances (such as ammonia or hydrogen sulfide), suspended matter, and organic matter may mix with wastewater that was used in the cleaning process in refining, we endeavor to prevent water contamination by appropriately treating the wastewater with the introduction of sour water treatment units, oil-water separation units, coagulation sedimentation unit (to extract suspended matter), and activated sludge process unit.

In April 2004 when the fifth water quality total pollutant control was put into effect, nitrogen and phosphorous were added to the list of substances subject to the total volume control such as chemical oxygen demand (COD). The refineries of Cosmo Oil use automated analyzers to conduct constantly monitoring and ensure that the regulation values are being adequately met.

Discharge of Chemical Oxygen Demand (COD) (at all 4 Refineries)



Reference

Related Data p. 73, p. 81 - 88

✚ Management of Chemical Substances

• Management in accordance with the PRTR Law

Chemical substances used in our oil refineries include benzene and toluene in petroleum products and cobalt in catalysts used in the refining process.

We reported the amount of releases and transfers of these chemical substances for Fiscal 2004 to the government in accordance with the PRTR Law.

• Maintenance and Control of PCB (Polychlorinated Biphenyl)

Equipment containing PCB such as high voltage condenser which was used in refineries in the past is managed in an appropriate manner in a quarantined environment, and the maintenance status for those ballasts is reported to the government annually.

Reference

Related Data p. 74, p. 81 - 88

Reference

Related Data p. 81 - 87

✚ Dioxin Emission Control at Waste Incineration Facilities

Strict controls are in place at our refineries that have waste incineration facilities, and we comply with relevant regulations.

Logistics

物流

Regardless of whether our operations are conducted on land or sea, we strive to conserve energy by scaling-up and streamlining.



Streamlining Distribution and Conserving Energy

At Cosmo Oil, we aim to streamline the distribution system from as early a stage as possible by, for example, scaling-up the tanker trucks and coastal tankers, and consolidating oil depots thereby conserving energy.

Average size and stowage of tanker trucks

Fiscal 1990

Average size 15.0 kl
Stowage ratio 94.3%



Fiscal 2004

Average size 19.0 kl
Stowage ratio 94.7%



Average size and stowage of coastal tankers

Fiscal 1990

Average size 1,536 kl
Stowage ratio 90.0%



Fiscal 2004

Average size 2,817 kl
Stowage ratio 93.7%



Land Transportation

Delivery to service stations by tanker trucks as well as oil tanker transportation are the primary ways in which oil products are transported domestically. We are regulating the amount of oil used for delivery and thus promoting energy conservation by increasing the transport volume per truck. Compared to Fiscal 1990, we increased the size of our tanker trucks by 127% in Fiscal 2004. In Fiscal 2003, we introduced DCD (Drivers' Controlled Delivery), and enabled delivery during the late night hours to avoid traffic. This allows us for more efficient transportation, thereby further conserving energy.

Maritime Transportation

Transportation from the refineries to the distribution bases or oil depots requires the use of coastal tankers with several hundred to several thousand ton capacities. So far, we have been eliminating and consolidating receiving bases so as to increase the size of these tankers, and the stowage ratio in recent years has also increased to approximately 94%, thereby improving the efficiency rate of transportation. In the future, we continue to endeavor to conserve energy by promoting night time transport and a high stowage ratio.

People's Voice



Akira Sugii
Cosmo Delivery Service Co., Ltd.

My job is to plan and manage the logistics of land transport for delivering gasoline and diesel fuel to service stations and factories. Every day, I am challenged by how safely and efficiently we can provide regular tanker trucks operations. I am tweaking and verifying the system everyday. The drivers of these trucks are not a machine, and sometimes mistakes are made. In order to prevent such mistakes from happening, we began in 2005 to quantify (based on an evaluation sheet with several tens of items) the individual driving skills and discharging operations, which enables us to provide detailed guidance for further improvements. We also began night time delivery that avoids traffic jams, and formed partnerships with other companies in the same business to formulate delivery plans. We are attempting to minimize inefficiency by introducing and implementing such measures. There have been times, however, when we have had to disregard efficiency to deliver our products to earthquake and typhoon ravaged areas. These are the times that I feel that the fuel products we handle are the lifeline of our lives and industry, and I am reminded of the heavy responsibility my job carries.

Akira Sugii

SS (Service Stations)

サービスステーション

We introduced the Environmental Management Point (EM Point) System to the SS operations in order to quantify risk. We are constantly seeking creative ways to harmonize the service stations with the environment.



Environmental Management Point (EM Point)

In April 2003, as one of the goal realization indicators of Cosmo Oil's service stations sales promotion program "NAVI", we introduced the Environmental Management Point (EM Point) system that relates to such matters as leak management, inspection of facilities, and industrial waste management as a means of environmental risk management at the service stations.

The EM Point inspection is conducted twice a year at approximately 5,000 service stations nationwide. In Fiscal 2003 and 2004, a total of 4 such inspections were conducted, and each time, the recovery rate and scored points showed improvements. We will continue to ascertain the actual state of safety management at our SS facilities and strive to improve management conditions.

Eco Friendly Service Stations

• Installation of Solar Panels

One way in which we are striving to make our service stations cutting-edge facilities that are environmentally conscious is the installation of solar panels (a photovoltaic power system). In Fiscal 2004, we newly installed them at 12 stations, and a total of 37 locations now use solar energy.

• Introduction of Hydrocarbon Vapor Recovery Equipment

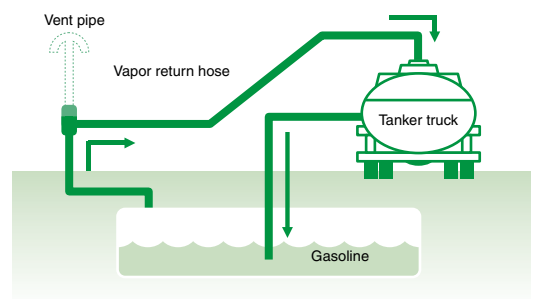
In order to control diffusion of hydrocarbon vapor, we are installing hydrocarbon vapor recovery units, at our service stations.

Educational Activities

We offer our authorized agents and service station operators an original risk management training program created by our company that focuses on environmental management for service stations at 9 locations nationwide. We have also produced and distributed a training video.

We have also added an Environmental Management Manual to the SS Facilities Safety Inspections Records that is distributed to all of Cosmo Oil's service stations (approximately 5,000 locations). This manual discusses the check points that allow for early discovery of oil spills and the resulting environmental impact, as well as the emergency response procedures that should be taken when an oil spill is confirmed, so as to ensure that each service station is equipped with this general knowledge.

Hydrocarbon Vapor Recovery Unit



Office

オフィス

We strive to promote sound material-cycle society by eliminating wasteful use of resources, and promoting separation and recycling of garbage.

✦ Daily Energy Conserving Activities

At the Head Office, we practice energy conservation by adjusting floor temperatures, turning off the lights during lunch, and dimming the lighting in the hallways. Electricity consumption at the Head Office has decreased every year. In Fiscal 2004, we were able to reduce it by approximately 7% as compared to Fiscal 2003.

✦ Effective Use of Resources

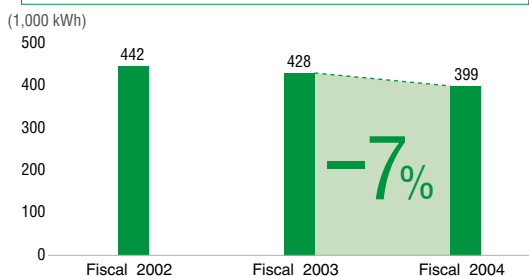
• Efforts towards a Paperless System

For the efficient operations and effective use of paper resources, we are attempting to achieve a paperless office through reevaluation of papers used for administrative purposes and the extensive use of computers.

• Enforcement of Trash Separation

With regard to paper trash that is generated by the Head Office, we have placed a "recycle box" on every floor and enforce separation of paper trash. The number of waste bins on each floor has been reduced, a "Clean-Corner" has been established, and 20 trash categories have been established including all types of trash in our effort to reduce waste and recycle resources.

Electricity Consumption in the Office (Head Office)



• Recycling of Paper Trash

At the Head Office, paper trash is separated into "high quality paper", "envelopes", "newspapers", and "magazines", and collected in the waste collection area. The waste paper is then collected by a recycling company and is used as raw material for producing recycled paper. Mixed papers such as notepads or labels are also collected, and some of those papers are reused as a toilet paper at the Head Office. The offices at our 4 refineries also collect waste paper. In Fiscal 2004, they recycled approximately 95 tons of waste paper (total for 4 refineries).



Awards

- **HCCI Combustion**
The 54th Society of Automotive Engineers of Japan, Inc., Asahara Academic Advancement Award
- **Gas oil desulfurization catalyst (C-606A)**
Fiscal 2004 Japan Petroleum Institute's Award (jointly with PEC)
- **Light naphtha isomerization catalyst**
Fiscal 2004 Japan Petroleum Institute, Noguchi Commemorative Award
- **ALA**
Fiscal 2004 Japanese Society for Chemical Regulation of Plants, Technology Award

R&D and New Business Ventures

研究開発・新規事業の展開

We are gradually realizing development of petroleum products and technologies having a smaller environmental impact, and clean energy that helps us sustain our planet. Applied technologies have also enabled us to enter new markets and areas other than those relating to oil and energy.

Gas Oil Desulfurization Catalyst <Sulfur Free>

Cosmo Oil endeavored to develop a desulfurization catalyst that could produce sulfur free (sulfur content of 10ppm or less) diesel fuel, and succeeded in realizing a high performance catalyst of the highest standard in the world. In order to provide sulfur free automobile fuel, often capital investment is necessary since it would involve heavy use of the desulfurization unit. This newly developed catalyst made it possible to produce sulfur free diesel fuel without any major capital investment. Our participation since 1999 in the Petroleum Energy Center (PEC) and New Energy and Industrial Technology Development Organization (NEDO)'s, "Research and Development of Petroleum Refining Pollutant Reduction Technology" Project, and the resulting development and practical application of this catalyst, made this achievement possible. Our accomplishment was recognized by the Japan Petroleum Institute's Award, one of the most prestigious awards in Japan's energy industry.

* The awards received this year including this award are listed above.

We will continue our Challenge to become an Integrated Energy Company with our Diversified Mind-set and Technologies.

The following are examples of our work ranging from the development of energy-based products, to expanding our range of technologies to seek development opportunities in new fields.

Case 01

Wind Power Generation

Since launching the windmill operation in Sakata City of Yamagata Prefecture (December 2004), we have been busy surveying and discussing the potential for commercialization of the further operation. The allure of wind-generated power is, needless to say, that it is clean energy. If the amount of wind power that is expected to be generated at the Sakata Wind Power Station (3.8 million kWh per year) were to be generated by another power-generating method such as thermal power, wind-generated power would have the effect of reducing CO₂ by 1,200 tons a year. On the other hand, there are disadvantages. Since wind-generated power is dependent on the wind, it lacks stability, and even if a good location were to be found, some locations are not commercially viable because there are not roads wide enough to transport the tall steel towers (65m) and blades (35m x 3 fans). We must also be considerate of ecology, the birds and other animals in particular. After resolving the many difficult issues that are involved in starting a windmill operation, I cannot quite express in words emotions I feel when I see those large blades starting to move. This is the joy of having a role at Cosmo Oil as it endeavors to become an integrated oil company.



Hiromasa Kusatsugu
Power Generation Group
Business Development Department

Hiromasa Kusatsugu

Case 02

ALA (5-aminolevalinic acid) Business



I wonder if you have heard of a natural amino acid called ALA. The regular amino acid known around the world as an ingredient in health drinks produces protein, but ALA is a super amino acid that is a basis of chlorophyll and blood. ALA's practical application in society can be found in a remedy for skin cancer, but it used to be an extremely expensive chemical due to the degree of difficulty involved in its chemical synthesis. When something is considered difficult, it is the nature of the researcher to want to challenge it. In 1987, 2 years after joining the company and while I was dispatched to the University of Hiroshima, I came up with the idea that if ALA is a natural substance that is in our bodies, I should be able to produce it using a fermentation process. I wanted to produce cheaply an ALA that was benign for the environment, like soy sauce, bean paste and inexpensive, using a fermentation process. Thereafter, I worked tirelessly on producing it, and then on developing its uses, and in 1999, I succeeded in the factory production of ALA using a fermentation process. In 2003, I developed the world's first high performance fertilizer containing ALA, Pentakeep, and made it a marketable product. Recently, discovery of its hair growth promoting effect has been a topic to the extent that it was introduced in news programs. As a core element of life, ALA holds tremendous potential and for this reason, in addition to its everyday business, the ALA Business Center is making continuous efforts to discover new possibilities in the area of the environment and health, such as greening of the deserts.

Tohru Tanaka
ALA Business Center,
Business Development Department

Tohru Tanaka

Other Achievements in Business and Research

Independent Power Production Business

In July 2003, the operation at the Yokkaichi Kasumi Power Station, the 200,000kW power generating plant, was launched. It supplies electricity to Chubu Electric Power Co., Inc.

Fuel Cell

In March 2005, the field test of the LPG fuel cell in Mie Prefecture was commenced. We have also been studying the hydrogen production and filling technology for vehicles powered by fuel cell. In addition, we are developing fuel cell technologies for household use so as to participate in the the New Energy Foundation's large-scale demonstrative project on the stationary fuel cells.

Environmentally Conscious Fuel

In our efforts to reduce CO₂ emissions and clean automobile exhaust gas, we are developing renewable biomass fuels (Such as ETBE*¹, BDF*², and bioethanol) and technologies that use GTL fuels.

Distributed Power Generation

Distributed power systems can supply cheaper electricity by generating power at each energy-consuming locations such as hospitals and factories. By utilizing the exhaust heat when power is being produced, energy consumption efficiency is improved, and CO₂ emission is reduced. At Cosmo Oil, we engage in this type of "energy service business" by providing distributed power systems and other services.

*1 ETBE (Ethyl Tertiary Butyl Ether)

ETBE is high in octane, and is an effective fuel for increasing the octane number in gasoline. ETBE can be made from bioethanol which is currently the focus of attention as a renewable fuel.

*2 BDF (Bio Diesel Fuels)

As a fuel that is made primarily from vegetable oils, BDF is gaining attentions as an alternative to oil that possesses nearly the same quality as diesel fuel. Since BDF is a renewable fuel that originates from biomass (biological material), its CO₂ emissions would not be counted under the Kyoto Protocol.

Filling up Your Hearts, Too



We Aspire to Create Future Value for All Stakeholders and to Be the Trusted Corporation of Choice.

- We promote business ethics in order to become a corporation trusted by society.
- We endeavor to create future value in our relationships with stakeholders.
- We actively disclose information and implement mutual communications.

Relationships with Stakeholders

In order to maintain trust of the stakeholders who support the Cosmo Oil Group and to remain a corporation they want to continue dealing with, we endeavor to provide value for them through our business activities as well as actively disclosing information and implementing mutual communications.

International Communities

In the way that international communities including developing countries keep developing sustainability, the Cosmo Oil Group is promoting various international cooperation such as climate change prevention, not only in our facilities but also outside.

Oil Producing Countries

Our ties with our long standing business partners are not limited to crude oil trading.

We have been working on conservation of the environment and promotion of safety management technologies in these oil producing countries using our human and technological resources. We also develop human resource and cultural exchanges.

Customers

In order to build the Cosmo network loved by all customers, we are listening to our customers and working to provide valuable services including improved levels of service, establishment of safety, etc.

Communities

As a constituent member of communities, for example, our refineries develop community disaster prevention systems in cooperation with authorities and other corporations in the vicinity of petrochemical complexes.

We also promote and support community activities such as cleaning and local events.

Shareholders, Investors

We actively engage in IR activities including publication of our quarterly newsletter (C's MAIL) to shareholders, annual report, facts book, etc. and information disclosure on our website.



Company Staffs

We regard respect for human rights as the foundation of our corporate activities and endeavor to provide a more attractive work environment in which our company staffs can not only work safely and comfortably but also realize their potential.



Improving Customer Satisfaction

お客様満足度向上のために

Improving service at our service stations is a priority for us, and a number of programs for improving service are currently being implemented.

In order to further improve customer satisfaction, the Cosmo Customer Center and the Cosmo Card Center are striving to respond to the requests of our customers and Cosmo the Card members as promptly as possible.

✚ PP (Privacy Policy) Point

With the enforcement of the Personal Information Protection Law, it became necessary for the service stations to ensure appropriate management of their personal information management systems.

At Cosmo Oil, we established the PP Point system as a way to ensure whether personal information is being properly managed. This system breaks down the factors related to personal information protection and assigns an evaluation value to each factor, ascertaining the state of affairs with regard to personal information management at each service station.

Each service station sets a PP Point goal, and then carries out self-evaluations on a regular basis.

By identifying its weak points and adopting measures to overcome them, the service stations strive to gain the trust of their customers.

SS (Service Stations) Network

Based on the concept of providing car life solutions that respond to the needs of our ever diversifying customer base, we developed the "Auto B-cle Network" at service stations, which provides a variety of services including automobile inspection, high quality car washing, and tire and battery sales. Striving to offer "an accessible, comfortable, clean car life solutions network", we are attempting to meet the care needs of diverse customers.

We are also promoting networking between the Auto B-cle Key Station Service Stations which have large car inspection facilities, and the small to mid-sized Auto B-cle Satellite Service Stations in the surrounding area. With this network in place, we are able to offer the Auto B-cle service through satellite stations for those who do not have a key station in their neighborhood.

Barrier-Free Service Stations

We encourage our service stations to provide a barrier-free environment by incorporating wheelchair accessible bathrooms, ramps, SS order cards for the hearing impaired, and other services.

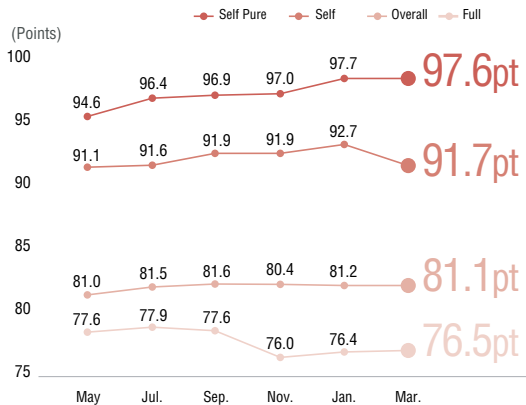
Cosmo Customer Center

With the objective of enabling mutual communication with our customers, we opened the "Cosmo Customer Center" in October 2000. We received approximately 360 voices a month from our customers via toll-free telephone calls and e-mails in Fiscal 2004. The breakdown of the voices is as follows: 43% questions, 22% complaints, 27% requests, 8% other. At the Cosmo Customer Center, we compile, categorize and analyze all of the customer voices. In doing so, we can respond accurately, promptly, and courteously to our customers, communicate the messages from our cus-

SS Service Assessment

The 4 basic rules by which our service stations operate are: "Friendliness", "Cleanliness", "Sense of Security", and "High Quality". In order to assess whether these principles are being implemented at a high level, we conduct customer surveys 6 times a year. A survey is conducted almost every two months, and the results are quickly analyzed and fed back to each service station.

SS Service Assessment Results (May 2004 - March 2005)



tomers to the relevant departments quickly, improve our services and operations so as to respond to the opinions of our customers, and further improve customer satisfaction.

We also created and distributed to each service station the "SS Customer Support Guidebook" which lists good and bad ways of handling customer inquiries from the perspective of customer support, and which offers the important points to be remembered when handling customer voices.

<http://www.cosmo-oil.co.jp/contact/index.html>

People's Voice



Tetsuki Fukushima
Cosmo Oil Sales Co., Ltd.

Tetsuki Fukushima

At our self-service type service stations, customers fill their own fuel and also can receive car inspections and car maintenance services as a multi-service location. We are mindful of offering courteous service to our customers.

While the service stations are still new and the staff is sometimes scolded by their customers for not being used to handling customers, we perceive these complaining customers as "treasures", as they will help us on a daily basis to improve our services.

Another area that we are focusing our energy on is the environment. In order to maintain safety at the service stations which handle hazardous materials, it is critical that we conduct safety checks on equipment and tanks.

In addition to the daily checks, we also carry out detailed checks based on the "EM Point" checklist (refer to p. 31) and submit them on a regular basis to the Head Office. In fact, in the past, due to a mistake I made on one of the check results that was sent to the Head Office, an EM personnel was dispatched to my service station. I realized that hawk eyes are watching, making it a bittersweet experience I will never forget.



Together with a Global Community

国際社会とともに

The Cosmo Oil Group engages in technological cooperation, technological support, human resource exchange, and cultural exchange, in the hope that we can contribute to sustained development in the Middle Eastern oil producing countries we are deeply related to through business operations as well as developing countries where much economic growth is expected, while maintaining and building a strong relationship.

Human Resource Exchange

We are continuously engaged in personnel training and human resource exchange programs to provide technical assistance and further promote mutual understandings across borders.

In Fiscal 2004, having received funding assistance from the Japan Cooperation Center, Petroleum (JCCP), we held a total of 56 events and programs, ranging from training seminars both in Japan and abroad to long and short-term internship programs, etc., with a total of 266 attendees.

The topic of the training programs ranged from environmental technology, energy conserving technology, and refining technology, to distribution, sales, personnel management, and research and development. In February 2003, we sponsored the international conference—the Abu Dhabi (UAE): Philosophy “education 2003”—as part of our comprehensive promotion assistance for education. This conference, attended by directors of Cosmo Oil, was designed to provide opportunities to think about borderless education with the use of Internet.

Overseas Cooperation Activities

As part of our overseas cooperation activities, we hold a high awareness concerning environmental conservation issues in the oil-producing and developing countries, and engage in technical cooperation and assistance.

As some of major activities, we have held the training seminars domestically and overseas, and we have done investigation overseas by financial support of JCCP. Technical cooperation to various development research projects is also an important initiative. They include the global environmental improvement studies by the New Energy and Industrial Technology Development Organization (NEDO) and business models for energy conservation.

These activities are also promoted based on funding from public organizations such as the Japan External Trade Organization (JETRO) and the Japan Bank for International Cooperation (JBIC).

- As the technical assistance to the Abu Dhabi National Oil Company (ADNOC), we provided specific technical proposals about resource and environmental protection measures for the Abu Dhabi Oil Refining Company's (TAKREER) Ruwais Refinery, in cooperation with the Cosmo Research Institute and Cosmo Engineering Co., Ltd.
- The Abu Dhabi Technological College (HCT) is an educational institute that supplies human resources to ADNOC and TAKREER. Since 1999, we have been receiving students from HCT to Japan in the summer, providing them regular training seminars (3 per year) relating to oil refining technology (refinery process, environment, test analysis, etc.).
- As an energy conservation business model commissioned by NEDO, Cosmo Oil and Cosmo Engineering Co., Ltd. built a flare gas and hydrogen recovery facility at the Indonesia National Oil Company (PERTAMINA)'s Balikpapan Refinery (East Kalimantan). This was the first of its kind in the oil refining industry, and the facility began operating in June 2005.
- Following the technical studies on the recovery of vapors emitted into the atmosphere at the MTBE tanker truck shipping base of the Iran National Oil Refinery Distribution Company (NIORDC)'s Bandar Abbas Refinery in Fiscal 2004, we built the MTBE vapor recovery technology verification plant and provided support in launching its operations.
- In Fiscal 2004, we conducted technical studies of the wastewater and utility facilities at the Oman National Oil Company (ORC)'s Mina al Fahal Refinery. Based on the experience and performance of Cosmo Oil, we proposed a comprehensive improvement plan.

Fiscal 2004 Training Performance Results
(Comprehensive oil technical assistance including environmental conservation, energy conservation, safety management, etc.)

Trainees accepted	13 countries	186 trainees
	19 organizations	
Trainees dispatched	12 countries	80 trainees
	21 organizations	

Activities in the Oil-Producing Country of Abu Dhabi

Through the Abu Dhabi Oil which is a group company of the Cosmo Oil Group and the United Arab Emirates-Japan Society, we have been providing a wide range of human resource exchange, technical assistance, and cultural exchange beyond the boundaries of our business activities since 1960.

Safe and Stable Operations at Abu Dhabi Oil

The Abu Dhabi Oil which is a group company of the Cosmo Oil Group has continuously implemented activities based on the HSE MS (Health, Safety & Environment Management System) proposed and promoted by ADNOC.

The Abu Dhabi Oil was the Runner-Up in the health performance category of the ADNOC HSE Award (2003), and for 2004, they were the winner in the Health category. Three consecutive placements in this award have resulted in high evaluations in the Abu Dhabi Oil's positive work and results with HSE.

At the Abu Dhabi Oil, our company staffs play a core role in the local Japanese community and engage in a wide variety of exchanges such as introducing Japanese culture, engaging in exchange student programs, or conversing with local NGOs.

There were 64 applications in Fiscal 2004 (as compared to 59 applications in 2003) for the company's internal HSE-MS Award (2004) indicating that the system has gained recognition, and contributing to the improvement in safety awareness among company staffs and contractors. This award system recognizes those company staffs and contractors who show particular achievements in the field of accident prevention and risk prediction, and given 3 awards in Fiscal 2004.



Together with Company Staffs

社員とともに

Aiming at corporate culture and work environment in which each company staff can achieve their own unique potential.

Making the Company a Place Where One Can Feel Excitement about Their Work

In order to achieve “Harmony and Symbiosis between Companies and Society” declared in our Management Vision, we are implementing various measures based on our policies of “Respect for the Individual (Humanity and Individuality)” and “Harmony in the Organization”.

We consider that Cosmo Oil’s corporate culture encompasses the recognition that each person is an invaluable existence with personal dignity, having respect for others, fulfilling one’s roles with knowledge, ability and conscience, and fulfilling social responsibilities as a corporate citizen.

Establishment of the Human Rights Committee

In April 2004, as starting to work on human rights as part of CSR, we renamed the Human Rights Enlightenment Seminar Promotion Committee to the Human Rights Committee, and launched a series of group-wide measures. The plan for the entire Cosmo Oil Group was to, based on

- 1) Maintenance of a personnel system that respects basic human rights, and
- 2) Realization of a more cheerful and comfortable workplace and improvement of company staffs' motivations based on a spirit of respect for diversity. On the basis of these two policies, we strive to address 7 issues as follows:

Human Rights, Respect for Diversity/Equal Opportunity, Workplace Health, Benefits, Training and Development, Employment Guarantees/Job Creation, and Capital and Labor.

1. Human Rights

A Citation from the "Cosmo Oil Group Corporate Activity Guideline"

<Human Rights Respect>

- We shall pursue our business with sincerity, respecting the different cultures and the dignity and rights of individuals in all the countries where we operate. We shall support the principles in the Universal Declaration of Human Rights.
- We shall not discriminate in the community on the basis of the birth, the nationality, the race, the creed, the religion, the sex, the age, the presence or absence of disability and so on.

Concerning business activities overseas, the Activity Guideline provides that the culture, practices, and rights of the indigenous peoples of a particular country be respected, the principles of the United Nations be observed with regard to the standard by which a decision is made as to whether business should be continued in a country that has serious human rights issues. The Guideline also provides that a likely impact of a large scale first-time investment in a particular region should be evaluated, the United Nations basic principles for Code of Conduct for Law enforcement officials be respected, the rights of company staff and local people and this principle be protected in case of security force.

• Human Rights Seminar

We provide opportunities through which company staffs can receive training by conducting on-the-job training or by incorporating programs into the training programs by rank.

Reference → Related Data p. 79

• Human Rights Enlightenment Competition

Fiscal 2004 Cosmo Oil Group Human Rights Enlightenment Competition Award (sponsored by the Human Rights Committee)

• Company Staff Section

General Affairs Department, Chiba Production Site, Cosmo Engineering Co., Ltd.

Authored by Yoshie Nishida

"Thoughtfulness", nurture it with your heart and carry it into tomorrow with kindness".

• Family Section

General Affairs Section, Sakaide Refinery

Authored by Tomoko Onishi's parent, Teruko

"So that you can be you, and I can shine as myself, let's recognize each human being, and each personality".

2. Respect for Diversity and Equal Opportunity

• Personnel System

Based on the concept that the Cosmo Oil Group is a place of self-realization for each company staff, we provide our company staffs with challenging opportunities, developing and operating various personnel programs for them to maximize their potential.

As part of these activities, we started the performance- and competency-based personnel system in January 2000.

"Objectives of the Personnel System"

- Clear definition of each company staff's roles and responsibilities
- Fair evaluation based on the degree to which one's expected roles are fulfilled
- Fair remuneration reflecting the result of the evaluation
- Human resource and competency development by providing feedback on the evaluation.

• Company Staff Satisfaction Survey

We conducted the second "Cosmo Survey" to find out how satisfied our company staffs were with our personnel system in December 2004. The survey results have been collated, analyzed and made available for all company staffs.

We will review and consider the issues identified by the survey in cooperation with each department and the labor union in order to improve our personnel system.

Reference → Related Data p. 79

• Employment of the Disabled

We carry out company staff training to raise awareness and endeavor to create a work environment where disabled company staffs can work to their full potential without hindrance.

Reference → Related Data p. 79

3. Workplace Health

• Creating Comfortable Work Environment for Safety and Health

Health care activities for the company staff includes the provision of a regular health check-up, and health guidance by industry doctors, and establishment of the "Hello health Consultation 24" service with access to external services for health, medical and mental health consultations.

4. Company Staff Benefits

• Assistance for Work/Life Balance

In order to promote an environment where company staffs can have a balance between child rearing and working, and return to work without any hesitations, we have introduced a business tool through which useful information concerning the return to work, child rearing, cooking classes for supporting family life are offered on-line.

Introduction system: Shiseido Co., Ltd. wiwiw

For details, please refer to the following home page:

<http://www.wiwiw.com>

• Activities Related to the Law for Measures to Support the Development of the Next Generation

In April 2005, we submitted to the Ministry of Health and Welfare our Action Plan which includes, among other things, our employment environment maintenance plan relating to work and childcare.

5. Training and Development

• Educational Programs

We have developed educational programs with an emphasis on letting a person grow rather than growing a person.

<Tiered Educational Seminars>

- Entry-level and Middle-rank Company Staffs
Educational seminars to foster “respect for individuals living in an organization” and to nurture “autonomous human resources”.
- Middle-rank Company Staffs and Managers
Education seminars to nurture “human resources who can create value”.
We have also been conducting CSR seminars for managers since Fiscal 2003. Since Fiscal 2004, each of the tiered educational seminars has included the environment, human rights and corporate ethics (compliance) as compulsory subjects.



Related Data p. 79 →

• Career Support

Individuals have different views on what is rewarding for them and what kind of person they want to be. It is important that each company staff thinks about his or her idea of a rewarding career that is needed to lead a satisfying life in society and makes an effort to realize it.

1) Career Support for Company Staffs

The Cosmo Oil Group is attempting to enable our company staffs to gain skills and knowledge required for each stage of their career through the tiered educational seminars. The career paths of the company staffs are reviewed and confirmed annually between the company staffs and their superiors in Cosmo Oil Group. This information is passed on to the Company and taken into account at the time of personnel changes so that our company staffs' career objectives can be given due considerations.

2) In-house Staff Recruitment

In Fiscal 2000, we introduced the in-house staff recruitment system by which company staffs can apply for jobs without reporting to their superiors and successful applicants are selected by receiving departments.

3) Self-education

We provide support for company staffs who attend external or correspondence courses for the purpose of self-education or obtaining qualifications.



Related Data p. 79- 80 →

6. Employment Guarantees and Job Creation.....

• Post-retirement Career Support

Due to review of the social security system, including welfare pensions and unemployment insurance, there is growing anxiety about life after retirement at the age of 60. We introduced a re-employment support program in October 2002 in order to help to dispel such anxiety.

1) Life Planning Seminars

Using “Lifetime employment” as a key word, we are helping those who have turned 55 contemplate on the long-term life vision by conducting the Life Planning Seminars where participants have opportunities to consider what they can do before retirement or what they want to do after retirement.

2) Pre-retirement Seminars

We hold Pre-retirement Seminars for those who are about to retire. The programs include the application procedures for welfare pension and unemployment insurance and health insurance, and the entitlement procedure of severance pay.

3) Second Career Seminars

We hold Second Career Seminars, which can obtain skills on personal resume and interviews, for those who wish to find another job after retiring from the Cosmo Group. Our group company, Cosmo Business Support Career Center, has a counseling service and provides employment information to the participants of the Second Career Seminars.

7. Management and Labor

Cosmo Oil's labor union is based on the union shop system. The Company has a labor agreement with the union which stipulates that any issue that has an impact on employment conditions such as company staff status and employment must be discussed between the two parties in advance. The top management and the union have discussions regularly at the Management Council and the Central Labor-Management Council, and each workplace has a Regional Labor-Management Council, Safety and Health Committee and Health Committee which meet as frequently as required.

In Fiscal 2004, we established the Appropriate Management of Labor Hours Committee for the purpose of preventing health problem due to the overwork, and appropriately managing labor hours.

Dealing with the Asbestos Problem

Some of the safety-related gaskets, packings and insulating materials used in oil refinery facilities contain asbestos. When these are formed products and under normal conditions of use, there is no concern for release of asbestos. However, we are replacing asbestos-containing materials with alternatives that have no asbestos, beginning with those that involve no safety issues. In addition, the other buildings owned by Cosmo Oil (such as the service stations, offices, etc.) and buildings used by our company staffs are currently being surveyed for asbestos content. Based on the survey results, necessary measures including the removal of asbestos are scheduled to be carried out in those areas in which release of asbestos is a concern.

With regard to any possible harm to the health of company staffs, there have not been any claims for workmen's compensation attributable to asbestos since 1980 (as of October 31, 2005). We advise any company staff who has health concerns to consult their doctor when they receive a checkup, and suggest the same to any retiree who might have asbestos related health issues or concerns by notifying them to do so, through our company's retiree network.

Case 01

During Maternity Leave

There exists an environment in which I can focus on caring for my child without any worries about whether I will be cast away by the company.

I began my maternity leave at the end of 2004 and plan to return to work in 2006 when my child turns 1 year old. I am currently devoted to caring for my first child. With the strong support from my family and employer, I feel almost no anxiety about taking maternity and child-rearing leave from my work. While I am concerned about how I will perform in the workplace upon my return, my boss sends me information by e-mail as to how the work I was previously involved in is progressing, and the Human Resources Department mails me important company information so that I can keep up with developments and not be forgotten by the company.

Prior to my taking maternity leave, I was involved in the research of an amino acid called ALA (refer to P. 34). This work is a completely new business endeavor for Cosmo Oil. It is an absolute dream of a theme for researchers like me. While fertilizers that use ALA have been turned into marketable products, ALA has the promise of contributing greatly to the global environment in the future, such as greening the deserts. It is a very satisfying field to be in, and I hope to continue my work for a long time after I return from maternity leave.

This is the doll her child can never let go off.



Setsuko Miyanari

ALA Business Center, Project Development Department.

Case 02

After Maternity Leave

I am so thankful for the Team Spirit at my workplace. They said, "We'll keep your desk open and be waiting for you!"

During my maternity and child-rearing leave period for more than a year, my boss continued to encourage me by saying, "Your desk is open and we will be waiting for you", for which I am so thankful. Due to the nature of my work as a think tank researcher (in charge of environmental economics), I often handled matters by myself. It is due to the team work in my workplace that I was able to take maternity leave and return to work so smoothly. I could not have done it without my colleagues sharing my work load among them during my absence.

After returning to work in the spring of 2005, I began a new work schedule of leaving work promptly at 5:30, occasionally taking work home, and picking up my daughter at her nursery school on my way home. Frankly, the schedule was grueling at times. However, it is not impossible to balance work and child-rearing. It gives me something to dream about. In the future, I can see myself continuing to work hard as the bridge between business and research. And of course, all the while, being a good mother.

This is the indispensable "company schedule book" for Cosmo Oil Group employees.



Yoko Kinoshita

Cosmo Research Institute



Safety Management

安全管理

At the Cosmo Oil Group, safe operations and stable supply are priority management issues and set forth as such in the "Basic Policy on Safety", and we practice company-wide safety management based on reinforcement of voluntary safety.

Safety Related Management Systems and Work

Cosmo Oil has established the Comprehensive Safety Action Headquarters which is headed by the Director overseeing the Safety and Environment Control Department as the company-wide safety management organization to promote safety measures.

Every year, company-wide safety goals are established, and each production site formulates and implements its own safety goals for their production site based on those goals.

In Fiscal 2004, the company-wide safety goal was "improvement of company-wide safety management standards based on the spirit of self responsibility and voluntary safety". Emphasis was placed on improving the safety management structure and the risk management structure.

In addition, the Comprehensive Safety Action Headquarters also carries out regular safety inspections at the refineries, oil depots, distribution and sales divisions. By doing so, safety management can be checked directly, and we can provide guidance and proposals on how improvements can be made, which also has the effect of bettering communications between company headquarters and local sites.

In order to prevent operational accidents and workplace injury at the refineries and other locations, the Health & Safety Committee headed by the Director of the location plays a key role in educating the company staffs and cooperative company staffs about safety through risk prediction training and discussions about potential dangers. The Committee also carries out safety activities such as analysis of past accidents to prevent recurrence, or improving abilities through safety education.

As a result of these efforts, in 2004 at the 4 refineries, there was 1 operational accident, 1 accident with lost-time injuries, and 2 other workplace injuries that did not require sick leave from the job. There were no operational accidents at the oil depots.

Safety Management System at the Refineries

Beginning in Fiscal 2004, the "Risk management based safety management system" was put into full operation at the refineries where efforts are being made to continuously improve voluntary safety.

The primary risk management measure is the implementation of safety evaluations (identification of the risk source and risk evaluation) on existing equipment so as to reduce equipment related risk on a continuous basis. Newly acquired equipment also undergoes safety evaluations.



Prevention and Early Detection of Accidents and Disasters, and Emergency Response Measures

It is the company's social responsibility to carry out safe operations and provide stable supply.

In order to secure safety, it is necessary to make efforts from both the perspective of "prevention" to prevent disasters from happening and "emergency response" so as to minimize damage in the event of an accident or disaster.

At Cosmo Oil, every effort is being made to address these two aspects of safety management by implementing hard and soft measures at each stage of our business at the refineries, oil depots, distribution centers (tanker trucks, coastal tankers) and SS (service stations). In the event that a large scale disaster were to occur, the Comprehensive Safety Action Headquarters headed by the President would be established at the Head Office, and a local committee would be established at the disaster site to promptly and appropriately manage the disaster.

Prevention and Early Detection of Accidents and Disasters

In order to prevent accidents or disasters in advance, early detection of an abnormality is crucial. For this reason, we have initiated a number of measures including monitoring of the operation status on a daily basis, patrols, a regular facility inspection and inspections for the aging conditions of facilities and installation of a variety of detectors. The following measures are also carried out:

- **Refineries and Oil Depots**
In order to prepare for a large scale earthquake, the quake resistance of facilities is checked and measures to be taken in the event of a tsunami reviewed. Measures to improve the quake resistance of outdoor tanks are being implemented as well.
- **Logistics Division**
Measures to prevent accidents and disasters such as safety patrols and the use of oil contamination prevention unit have been implemented.
- **Sales Division**
Safety checks are carried out at SS construction sites and on daily operations, and planned repairs of aging facilities are also being implemented. In addition, where earthquake of a certain scale occurs, inspections are conducted for underground facilities.

Emergency Response Measures

For fire and other emergencies at the refineries, oil depots, and other locations, disaster prevention schemes have been put in place including the placement of fire extinguishing equipment and heavy-duty chemical fire engines.

In-house fire brigade have also been organized, and regular fire drills and notification drills are conducted.

Furthermore, efforts are also being made to promote local disaster prevention measures by, for example, establishing joint disaster prevention organizations with neighboring companies and conducting joint drills with public organizations.

- Oil spill measures include surrounding the spill with a dike, and placing oil booms or using oil boom extenders and putting in place oil recovery vessels in preparation for possible leakage into the sea.
- The Petroleum Association of Japan has prepared for a large scale oil spill disaster by establishing oil spill control resource and equipment bases both domestically and overseas. Cosmo Oil is contributing to the operations of Ise Base No.3 by offering a portion of its premises.

Responding to the Amended SOLAS Convention

On July 1, 2004, the amended SOLAS convention was enforced and safety measures for international ports and harbors reinforced. In response, we are improving the safety measures of our facilities located at international ports and harbors. Under the direction of the government, we are implementing soft and hard measures that are deemed appropriate for the location and safety level of facilities located at the relevant international ports and harbors so as to strengthen the safety structures of our port and harbor facilities.

2004 Safety Topics – Niigata Prefecture Chuetsu Earthquake–

When the Niigata Prefecture Chuetsu Earthquake occurred in October 2004, an Emergency Committee was established at the Tokyo Branch, and the following measures were swiftly implemented.

- Inspection of the damage sustained at the service stations.
- Inspection of underground facilities at our affiliate service stations in the region that experienced seismic intensity of 5 or higher on the Japanese scale of 7.
- Sending of relief supplies.

Consolidated Medium-term Safety Plan

From Fiscal 2005 onwards, we will expand the scope of our safety management activities, and Cosmo Oil and its affiliated companies that have field operations divisions will develop and implement the Consolidated Medium-term Safety Plan.

The primary themes that will be a part of the Consolidated Medium-term Safety Plan are "Maintenance of the safety management system", "Identification/evaluation and reduction of potential risks", "Reinforcement and implementation of

the risk management system", and "Planned implementation of educational training" for the purpose of improving safety awareness and skill.

By building a safety management system for the entire Cosmo Oil Group, we will endeavor to make operations safer and provide stable supply by actively promoting voluntary safety based on self responsibility.



Global Cooperation

地球市民の一員として

There is an environmental conservation project that was borne out of our passion to do whatever could be done together with the community and the people of the world.

✦ Cosmo the Card “Eco”

The “Living with Our Planet.” projects have been operated by “Cosmo Oil Eco Card Fund” that was established with not only contributions in the amount of 500 yen that is to be paid by each card holder in joining the projects and the application month from the second year onwards, but also contributions from Cosmo Oil. With “Living with Our Planet.” as the slogan, this project, the main theme of which is the prevention of climate change, engages in environmental conservation projects both domestically and globally, and helps to develop environmental education for the children that will carry us into the next generation.

The membership has grown to approximately 78,000 in 4 years since the card was first issued.

The staff members who run the fund, together with non-profit organizations and other project partners, engage in studies, planning, listening to the opinions of the community residents or local governments, and promote the “Living with Our Planet.” projects.

• “Living with Our Planet.” Projects

We are promoting environmental conservation activities together with customers and local community, thinking “What can we do?” and “What should we do?” as a corporate citizen. In seeking to make the fundraising process more transparent and sound, Cosmo Oil Eco Card Fund holds Project Council meetings and receive the opinions and advice from external experts.

Tropical Rainforest Conservation	<Papua New Guinea/ Solomon Islands> Destruction of the tropical rainforest which absorbs CO ₂ , an accelerating factor to climate change, is a serious problem for our environment. In Papua New Guinea and the Solomon Islands, due to dramatic increases in the population and other factors, shifting cultivation is spreading at a more rapid rate than the forests can recover. We support the promotion of recycling-oriented organic agriculture which has less impacts on the forest in the lowlands.		
South Pacific Support	<Kiribati> We support the island nations of the South Pacific which are being confronted with problems such as ocean water coming into their well water and erosion of their coastline due to the rising sea level which is believed to be caused by climate change.	Silk Road Afforestation	<China> In order to prevent further desertification which causes problems of poverty and food shortages due to poor harvesting of agricultural crops, we promote the afforestation along the Silk Road together with the local residents and governments.
Recycling-oriented Agriculture Support	<Philippines> We support sustainable development of regions where recycling-oriented agriculture is practiced that focuses on sericulture that reuses cassava leaves that had been thrown away in the past.	Qin Ling Mountain Range and Forest Recovery	<China> In the Qin Ling mountain range where deforestation is prevalent and ecosystem on the edge of break-down, we will start a project to help the forest recover through tree plantation.
Support for Environmental Education	<Japan> Together with NGOs of various regions in Japan, we support environment education in the “schools”.	Environmental Schools Support	<Japan> Together with the NPO led by Ken Noguchi, we support educating the children so that they can take their own initiative regarding the environment through such programs as the “Environment schools” that are held on Mt. Fuji, the Ogasawara Islands and so on.

• Click Fundraising

When a viewer of Cosmo Oil’s website clicks on the “Living with Our Planet.” projects, Cosmo Oil contributes 1 yen on behalf of the person who clicked on the project. The total amount of contributions made between February 2003 and March 2005 is 6,643,210 yen.

<http://www2.cosmo-oil.co.jp/kankyocharity/index.html>

✦ Absorption of CO₂ by Supporting Forestation

Cosmo Oil supports the cultivation of 5,100ha of eucalyptus forest in southwest of Australia. Of the CO₂ absorbed by this forest, we obtained emission credits of 24,000t-CO₂ in Fiscal 2002, and 47,489t-CO₂ in Fiscal 2003. Starting in Fiscal 2002, we implemented the “CO₂ Free Gasoline” program which is designed to offset the CO₂ produced by members of Cosmo the Card “Eco” by using the emission credits. In December 2004, 15,819t-CO₂ worth of emission credits, part of the emissions credits obtained in Fiscal 2003, were given out to the members, and the same amount of CO₂ was deemed to have been absorbed by the forests of Australia.

* Currently, since Australia has not ratified the Kyoto Protocol, the emission credits are not counted under the Kyoto Protocol.

✦ Cooperating on a Global Scale

At Cosmo Oil, we have continued to lend cooperation to those countries or regions faced with environmental damage attributable to climate change and other factors. In China, as a neighboring country, we supported the protection efforts of the Tibetan snub-nosed monkey, an endangered species, which has become the symbol of the impact of excessive deforestation and the lessening of the number of species of the forests there. We also provide agricultural equipment to the governments of Papua New Guinea and the Solomon Islands who are endeavoring to promote recycling-oriented organic agriculture in their lowland regions.

People’s Voice



Hiroyuki Tada
Chief Executive, Japan for Sustainability

Hiroyuki Tada

As an energy resource company, Cosmo Oil has the enormous responsibility of reducing its direct impact on the environment, to help build a sustainable society. Cosmo Oil has put forth many different efforts that include reducing indirect impacts as well.

The Eco Card Fund is a new model that serves as a bridge between people who are concerned about the environment and NGOs that have environmental expertise, and Cosmo Oil is playing a communication agent’s role in this relationship. With one 500 yen coin, an amount that anyone would feel comfortable with, the fact that we were able to steadily increase our membership to over 75,000 members has been a refreshing surprise.

The giving of our “resources of the heart” to fund projects in areas of need such as developing nations experiencing difficult times based on careful selection is nothing short of creating a global network of trust.

In the future, I hope that the Eco Card Fund will further evolve through the expansion of the partnership to include eco exchanges and partnerships among the members and NGOs. I believe that is the new challenge in CSR for Cosmo Oil.



Communication with Society

社会とのコミュニケーション

We believe that disclosing information to as many people as possible and listening to the opinions of our customers through the use of a variety of communication tools and media will guide us in the direction that we should proceed as a company.

✦ Environmental Education Tools

• Earth Environment Book

In Fiscal 2002, we distributed “Earth Environment Book”, specifically compiled for elementary school children, to those who want it for free (limited to educators; shipment costs to be paid by the receiver). Focusing on the activities of people who are involved in environmental conservation and the messages from them, this book is comprised of columns that address such questions as “What happens if climate change progresses?” and “What happens if the ozone layer is destroyed?”

• Cosmo Children’s Earth School on the Website, “Econets”

This is a website that offers education about the environment, with the objective of fostering awareness about the environment in children in an enjoyable way. It is structured in a way that adults can also think about environmental issues together with the children. We plan to offer workshops in the future through which real nature experiences can be enjoyed as well.

<http://www2.cosmo-oil.co.jp/econets/index.html>

Cosmo Children's Earth School

We offer the "Cosmo Children's Earth School", an educational platform that aims to foster healthy development and an awareness about the environment in children of the future.

• Nature Art Workshop for Children

In May 2004, we held the "Nature art workshop for children – Wonder hat carnival" with the artist, Kozue Hibino, as our lecturer.

After a stroll through the woods, the children return to the classroom to create their own original hats based on a "forest" theme. The artwork is then photographed, put into the form of a picture-book style greeting card, and sent with Christmas messages to children who are being hospitalized for a long time.

Project	Cosmo Oil, Wonder Art Productions
Project members	Sugino Fashion College
Project location	Minato-ku, Tokyo Institute for Nature Study affiliated with the National Science Museum Sugino Fashion College
Project date	May 22, 2004
Participants	30 elementary school students from the Tokyo area 10 student volunteers from the Sugino Fashion College 13 company staff volunteers from Cosmo Oil

• 12th Cosmo Waku Waku Camp

As part of the "Cosmo Children's Earth School", we held in August 2004 a nature experience program called "Cosmo Waku Waku Camp" for elementary school children orphaned by traffic accidents.

This program, operated primarily by volunteer company staffs, was a 2 nights and 3 days excursion during which everyone helps to turn scrapped drum cans into rafts. Games were played at the lake, company staffs create a picture-story show about fuel cells, and then the children get to try riding a fuel cell powered car.

Project members	Cosmo Oil National Outfitters Training School, NPO
Project location	Niiharu Nature Academy, Niiharu Village, Gunma Prefecture
Project date	August 5 - 7 (2 nights, 3 days), 2004
Participants	42 elementary school children orphaned by traffic accidents 19 company staff volunteers from Cosmo Oil

Cosmo Fine Art Kids

Due to domestic violence, the number of children who have parents but who live in child institutions such as orphanages or foster homes is increasing dramatically. As the encouragement to these children in such circumstances, Cosmo Oil began an original program that introduces art therapy called "Cosmo Fine Art Kids". In Fiscal 2004, we held the program 3 times for children of child institutions in the Sugunami district of Tokyo. The artist, Kuku Minami, and company volunteers

visited the child institutions on the weekend, and enjoyed various activities such as drawing or firing ceramics together with the children. This program was put into action based on our knowledge of how to sponsor children-oriented programs accumulated from many years of experience, in a way that made full use of the abilities of our volunteer company staffs.

Cosmo Oil Voice of the Earth

We hold a concert that is based on the theme of "thinking about the relationship between people and nature". The theme of the 3rd concert held in May 2005 was "Landscape with water", and it involved a collaboration of 3 marimbas, per-

cussions, and poem readings. The ensemble of Noriko Kato, Noriko Honjitani (marimba, percussion), Petite Kai (guitar), and Michitaka Tsutsui (reading) was performed at Kioi Hall. Volunteer company staffs served as ushers.

Environmental Magazine "TERRE"

This magazine was launched in March 2004 based on the concept of an "environmental cultural magazine which hands down the great wisdom of humankind to the next generation". We are delving into the truly great ways of life and thinking of the present and past from the perspective of the "environ-

ment". By learning about the wisdom of people gained from nature, we hope that this magazine will provide an opportunity for people to think about what they should be doing, now.

* "Terre" is a French word meaning earth or ground.

✦ Cosmo Earth Conscious Act

Cosmo Oil and the 38 radio stations that are members of JFN (Japan FM Network) including TOKYO FM have formed a partnership, and based on the theme, "Earth consciousness Hearts to Love & Feel the Earth", we have launched the "Cosmo – Earth Conscious Act", an initiative that incites people worldwide to protect and conserve the global environment.

• Earth Day Concert

We have sponsored the Earth Day Concert every year since 1990 on April 22nd, "Earth Day". Artists of Japan who sympathize with the concept, "Earth consciousness–Hearts to Love & Feel the Earth", collaborate to sing their love of earth.

Artists in Fiscal 2005

Kazufumi Miyazawa,
Tokyo Ska Paradise Orchestra, Hitoto Yo

✦ Clean Campaign

We conduct environmental activities throughout the year in an enjoyable way that allows all participants to get acquainted with nature. In addition to cleanup drives, we use our creativity to put together events ranging from live concerts to sports events in which people of all ages can participate.

Results of Fiscal 2001-2004 (accumulation)

Number of Locations: 164

Number of Participants: 66,704

Total Volume of Collected Waste: 1,091,777 liters

✦ Exhibition at the EXPO 2005 AICHI JAPAN, "NGO Global Village"

• See for Yourself the Reduction of CO₂! — A CO₂ Absorption Experiment Using Plants —

At the Cosmo Oil booth at the Expo 2005's "NGO Global Village", we conducted CO₂ absorption experiments using plants together with Miwa Laboratory of the Waseda University's Science and Engineering.

This was an experiential experiment in which we had visitors actually participate so that they could see through their own eyes how plants absorb CO₂. When light is thrown on the plants, the concentration within the dome placed at the center of the CO₂ absorption equipment declines. What can not ordinarily be seen by the naked eye is displayed on monitors in the form of a graph.

Other environmental activities conducted by Cosmo Oil were also introduced through movies and slideshows.

Summary of the "CO₂ absorption by plants - a real time continuous experiment" event

Producer: Yoshiyuki Kouzu (Composer)

Editor: Yoshiyuki Miwa

(Professor, Science & Engineering, Waseda University)

Cooperation: Miwa Laboratory (Waseda University)



✦ Ken Noguchi Lecture and Exhibition

Beginning in Fiscal 2002, we have held lectures across the country that provide a platform for thinking about environmental issues as symbolized by the garbage on Mt. Everest and Mt. Fuji. Garbage which Ken Noguchi collected from his cleanup climb on Mt. Everest is also on exhibition.

<http://www.tfm.co.jp/earth/noguchi/index.html>

• Communication of Environment Topics through Radio Programs

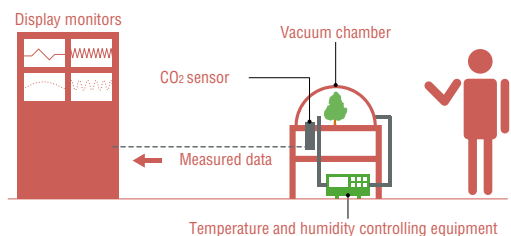
Every morning, as a regular FM program, reporters from the 38 JFN stations communicate environmental topics around the country, introducing the natural environment of the region where they are reporting and interviewing people who are active in local environmental conservation activities.

FM Radio Program "Living with Our Planet."

JFN 38 station nationwide network

Every week, Monday through Friday, from 6:40 am to 6:45 am

Conceptual Diagram of the Basic System



Period: March 25, 2005 - September 25, 2005 (during the entire period of the EXPO 2005)

Location: At the "Cosmo Oil Booth" located inside of the Center House of the "NGO Global Village"

* The "NGO Global Village" is an expo event that was designed as a realistic depiction of the "Nature's Wisdom" and "Great Global Exchange", the themes of the EXPO 2005. Based on the project concept of "Learning for Sustainability" this is a stage upon which all of the internationally active NGOs and non-profit organizations can gather together to hold their own "fun and informative real experience programs" centered around the main themes of "nature and the environment" and "international exchange and cooperation".

Third-Party Comment

We asked Mr. Toshihiko Goto, Chair of the Environmental Auditing Research Group, Member of Board of Directors of the Global Reporting Initiative (GRI), and an expert on corporate social responsibility and information disclosure for his third-party comment on the “Cosmo Oil Group Sustainability Report 2005”.

Upon reading the Cosmo Oil Group Sustainability Report 2005

Chair of the Environmental Auditing Research Group
Member BoD, GRI

Toshihiko Goto

The Cosmo Oil Group's Sustainability Report sets forth as its basic principle “In striving for harmony and symbiosis between our planet, man and society, we aim for sustainable growth towards a future of limitless possibilities”. However, the issue we face today is that on the line of BAU (business as usual), which means the 20th century's way of businesses, there may not be a future of humankind. In order to “fill up your hearts, too” and realize sustainable development, at the 2002 Global Summit, a declaration was made to corporations too that they must take part in poverty eradication, changing consumption and production patterns, and protecting and managing the natural resource base. “Living with Our Planet.” is a wonderful mission, but I hope that your company will go beyond the scope of that message by including in the new Consolidated Mid-term Plan for 2005 the objective of maintaining constant awareness of the above 3 objectives in the everyday business of the company.

Generally, it is said that CSR efforts are the same as engaging in activities to increase intangible assets values. The important point is that reinforcing CSR management leads to an increase in the values of intellectual property, human capital, and organizational capital. The Mid-term Plan calls for strengthening of CSR management, and it is organized with 3 pillars, 2 perspectives, and 5 priorities. While compliance is pointed out as being more than simple observance of laws and regulations, I believe that it is also important to clarify “what is to be observed” and tie it into the concept of “Making the company a place where one can feel excitement about their work”. It is clear to see that your company invests greatly in improving awareness among your company staffs, but I am looking forward to seeing the disclosure of data that shows an upward trend in satisfaction survey results. It is not so an easy task at this point of time to express CSR performance, in other words, intangible assets values in non-monetary terms, in other words, to make it visually available. While it is wonderful that you have received high marks in SRI ratings so far, the key for the future is how much you can improve its visual display. I can see from the Data book that you are challenging yourselves with this task, and I look forward to seeing further creativity in this regard.

“Cosmo the Card” has been praised highly by society as a key means for mutual exchange and I hope you will nurture its growth carefully. It is unfortunate that an incident involving its unauthorized use by an company staff of an agent occurred. It is a reflection of what a scary world we live in these days that an incident which occurred with an agent over which you do not have direct control can lead to such enormous risk. The only thing that can truly control the huge science and technology including that for oil or IT is the sense of reverent awe for something greater than human intelligence. I would like to see your company continue to promote mutual exchange keeping that concept in mind. On a related topic, your company identifies strengthening of the internal audit function as part of risk management. Reinforcing internal audits are, similar to investments in improving products quality, a necessary investment for improving corporate quality, and therefore, I look forward to the synergistic effect that is sure to arise from a self management style risk management structure. The leading oil companies of the world are already beginning to prepare themselves for a post petroleum era. As I said last year as well, I would like to see your company set quantitative goals for technological development and new energy sources.

A portion of the Data book is missing age comparisons which should be remedied. In addition, I would say that the overall picture is a little bit unclear, so I would suggest including an executive summary. Since there are a large number of pages, perhaps there is a way to link it more to your website and disclose the information using different modes of communication.

Independent Review Report

Independent Review Report on the “Cosmo Oil Group Sustainability Report 2005”

To the Board of Directors of Cosmo Oil Co., Ltd.

1. Purpose and Scope of our Review

We have reviewed the “Cosmo Oil Group Sustainability Report 2005” (the “Report”) of Cosmo Oil Co., Ltd. (the “Company”) for the year ended March 31, 2005. Our engagement was designed to report to the Company, based on the results of our review, whether the environmental, social and economic performance indicators and the environmental accounting indicators (the “Indicators”) for the period from April 1, 2004 to March 31, 2005 included in the Report have been collected, compiled and reported, in all material respects, rationally and in conformance with the Company’s policies and procedures.

The report including the identification of material issues is the responsibility of the Company’s management. Our responsibility is to independently report the results of our procedures performed on the Indicators.

2. Procedures Performed

We have performed the following review procedures;

- With respect to the Company’s policies for compilation of the Report, interviewed the Company’s responsible personnel.
- Assessed the Company’s procedures used for the collecting, compiling and reporting the Indicators.
- With respect to the way of collecting the Indicators and the process flow of calculating them, interviewed the Company’s responsible personnel and reviewed the systems and processes used to generate the values of the Indicators.
- Compared the Indicators on a sample basis with the supporting evidences to test the conformity in collection, compilation and reporting of the Indicators to the Company’s policies and procedures.
- Made on-site inspections of the Yokkaichi Refinery.
- Evaluated the overall statement in which the Indicators are expressed.

3. Results of the Procedures Performed

As a result of the procedures performed, we are not aware of any material modifications that should be made to the Indicators in the Report in order for them to comply with the Company’s policies and procedures for the rational collecting and compiling such information.

KPMG Azsa Sustainability Co., Ltd.

KPMG AZSA Sustainability Co., Ltd.

Tokyo, Japan
October 13, 2005

Photo Captions

<Cover>: Under the title, from the left

- The children of Solomon
- Auto B-cle SS (service station)
- At a beach in Solomon

<P.2>: Clockwise

- SS staff conducting a safety check
- The children of Solomon
- Company staffs at work
- Customer filling up at a self service SS No.1

<P.6>: From the top

- Children playing on a beach in Solomon
- Staff handing a card at the SS

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- Chairman: Keiichiro Okabe, President: Yaichi Kimura

<P.13>: From the top

- Researcher conducting quality inspections at the Research and Development Center
- The biometrics system at the Card Center
- Researcher conversing with a trainee in the courtyard of the Research and Development Center
- Conference at the Head Office

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- Crewman filling up a tanker truck

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- JHFC Yokohama-Daikoku hydrogen station

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- An oil drill site at an oil field in West Mubarraz

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- The Chiba Refinery

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- Company staff throwing away paper into the recycle box at the offices of the Head Office

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- Staff looking up at a turbine at the wind power station in Sakata City

<P.35>

- Customer filling up at a self service SS No.2

<P.37>

- The Cosmo Card Center

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- Participation in the “Environment School Support Project”— The children and alpinist Ken Noguchi

<P.49>

- The 12th Cosmo Waku Waku Camp

The background of the page is a solid light blue color. At the top, there is a decorative graphic consisting of a dark blue, wavy line that resembles the surface of water, with a slight peak on the right side.

> Sustainability Report 2005
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Cosmo Oil Group Sustainability Report 2005

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Scope of this report

- This Related Data has been prepared in order to provide the reader with a deeper understanding of the contents of the Cosmo Oil Group Sustainability Report 2005. The scope of the Report is the Cosmo Oil Group. Please see page 1 of the Report proper for the scope of the Group.

Cosmo Oil Group Corporate Activity Guideline

In carrying on its business activities, the Cosmo Oil Group is striving for harmony and symbiosis of the earth, human beings and society, and aiming at sustainable development for a future expansion growth without limit (for our vision, please see p. 5 of the report). The Cosmo Oil Group Corporate Activity Guideline consolidates the promises of the Group's officers and company staffs not just to comply with the law, but also to act fairly and honestly as members of society when carrying on the Group's business.

Established as the central pillar of the Group's ethical standards/codes, these guidelines must be followed not only by officers and company staffs, but also by clerical assistants, temporary and part-time staff. The Cosmo Oil Group Corporate Ethics Committee was established in order to promote, implement and audit these guidelines, and is committed to establishing and putting into practice the group's corporate ethics.

The contents of the guidelines, together with the main relevant laws and regulations and internal standards/codes are as follows. For more detail, please see our home page at:

<http://www.cosmo-oil.co.jp/eng/company/guideline.html>

Chapter 1: Relation with Consumer/User

- **Development and providing with good quality product and service**
- **Quality maintenance of product and safety securing**
Related law: Product liability law
Related regulations: Quality assurance provision, quality claim management regulations, and product liability law (Product Liability Law) guides
- **Proper dealings with consumer**
Related law: Law for Preventing Unjustifiable Extra or Unexpected Benefit and Misleading Representation and consumer contracts law
Related regulations: Law for Preventing Unjustifiable Extra or Unexpected Benefit and Misleading Representation compliance manual
- **Customer information management**
Related law: Act for Protection of Computer Processed Personal Data held by Administrative Organs
Related regulations: Information management regulations

Chapter 2: Relation with Customers and the Profession

- **Relation with special agent and cooperation company**
- **Compliance of Antimonopoly Law**
Related law: Antimonopoly Law
Related regulations: Antimonopoly Law compliance manual
- **Proper dealings with purchase destination**
Related law: Antimonopoly Law and the Subcontracting Law
Related regulations: Antimonopoly Law compliance manual and purchase business management regulations
- **Respect for others' confidential information and intellectual property right**
Related law: Unfair Competition Prevention Law, Copyright Law, Patent Law, and Trademark Law
- **Entertainment and exchange gifts**

Chapter 3: Relation with Stockholder and Investor

- **Disclosing of corporate information**
- **Prohibition of insider dealings**
Related law: Securities and Exchange Law
Related regulations: Insider dealings prevention regulations
- **Prohibition of payoff**
Related law: Commercial Code

Chapter 4: Relation to the Society

- **Development of local society**
- **Safety operation**
Related regulations: Safety environmental protection regulations and integrated safety task force regulations
- **Environmental preservation activity**
Related regulations: Safety environmental protection regulations and global environment committee regulations
- **Social contribution activity**
- **Information disclosure**
- **Security export management**
Related law: Foreign exchange and foreign trade law
Related regulations: Security export management regulations
- **Relation rupture from anti-social power and group**
Related law: Anti-Gangs Measures Law
- **Activity in foreign countries**
- **Human rights respect**

Chapter 5: Relation with Politics and the Administration

- **Construction of healthy, normal relation**
Related law: Ethics-in-government law
- **Compliance of political donation restriction**
- **Bribery prohibition**
Related laws: Bribery charge and Unfair Competition Prevention Law (Bribery prevention agreement to foreign civil servant)

Chapter 6: Relation with the Company Staff

- **Human rights respect and discrimination prohibitions**
- **Respect for freedom of association and the right to collective bargaining**
- **Forced labor/Child labor prohibitions**
- **Compliance of law related to labor**
- **Achievement of workplace environment where they can work safely and easily**
- **Respect for individuality**

Chapter 7: Relation with Company and Company Property

- **Proper accounting treatment**
Related regulations: Accounting regulations
- **Appropriate management and use of company property**
- **Protection of intellectual property right**
- **Management of trade secret**
Related regulations: Information management regulations
- **Appropriate management and use of information system**
Related regulations: Information system management regulations
- **Evasion of conflict of interests**

Environmental Activities' Milestones

Fiscal	The Cosmo Oil Group
1986	<ul style="list-style-type: none"> • Cosmo Oil Co., Ltd. established • Regulations on Environment and Safety Management and Regulations for the Comprehensive Safety Action Headquarters enacted
1987	<ul style="list-style-type: none"> • FCC exhaust gas desulfurization unit at Sakai Refinery completed
1989	
1990	<ul style="list-style-type: none"> • Cogeneration facilities at Yokkaichi Refinery completed
1991	<ul style="list-style-type: none"> • The Cosmo Oil Group dispatched oil spill prevention expert team to the Persian Gulf
1992	<ul style="list-style-type: none"> • Atmospheric distillation flue gas denitrification unit installed at Sakai Refinery
1993	<ul style="list-style-type: none"> • The Cosmo Oil Group's Global Environment Action Program submitted to Japan Ministry of International Trade and Industry • Establishes Global Environment Committee, adopts committee regulations
1994	<ul style="list-style-type: none"> • First annual Global Environment Committee meeting held, eight subcommittees created • Starts setting environmental targets annually, based on "Global Environmental Initiatives" document • Gas oil deep desulfurization unit at Chiba Refinery completed
1995	<ul style="list-style-type: none"> • Cogeneration facilities at Sakai Refinery completed • Sakai Refinery received National Resources and Energy Agency's Director-General's Award for excellence in industrial energy management
1996	<ul style="list-style-type: none"> • Environmental Action Plan Follow-Up Report submitted to Ministry of International Trade and Industry • Cogeneration facilities at Chiba Refinery completed • Gas oil deep desulfurization unit at Sakai Refinery completed
1997	<ul style="list-style-type: none"> • Established Nakhodka Oil Spill Support Team in response to major oil spill on the coast of the Sea of Japan caused by Russian tanker Nakhodka • Environmental impact assessments began at Cosmo Oil's Yokkaichi Kasumi Electric Power Plant (IPP)
1998	<ul style="list-style-type: none"> • Introduced double-hulled tankers on regular routes • Gasoline benzene reduction unit completed • No. 2 atmospheric distillation flue gas denitrification unit completed at Chiba Refinery
1999	<ul style="list-style-type: none"> • Sales launch of "Terra Series" biodegradable lubricating oil • Sales launch of "Shinsei" chlorine-free diesel engine oil • Cosmo Environmental Report published
2000	<ul style="list-style-type: none"> • Sakaide Refinery received National Resources and Energy Agency's Director-General's Award • Cosmo Customer Center opened • The Cosmo Oil Group "Industrial Waste Management Regulations" established
2001	<ul style="list-style-type: none"> • Cosmo Oil Environmental Report 2001 published • Chiba Refinery received commendation from Minister of Health, Labour and Welfare • Received the Award for Excellent Companies in the 11th Grand Prize for the Global Environment Award • Yokkaichi Refinery received Fire Defense Agency's Director-General's Award at Convention on Hazardous Materials
2002	<ul style="list-style-type: none"> • Cosmo the Card "Eco" issued • Awarded the 5th Prize for Excellence in Environmental Reporting (jointly hosted by TOYO KEIZAI INC. and the Green Reporting Forum) • Commence sales of diesel fuel with sulfur content of 50ppm • Succeed in development of production of liquid fuel from natural gas (GTL)
2003	<ul style="list-style-type: none"> • Succeed in reduction of volume of excess sludge generated by refinery • Yokkaichi Refinery 2nd cogeneration plant came into operation • Cosmo Oil Yokkaichi Kasumi Power Plant opens for IPP business (wholesale supply of electric power) • Succeed in production of hydrogen for fuel cell cars using GTL
2004	<ul style="list-style-type: none"> • Sakaide Refinery received Fire Defense Agency's Director-General's Award at Convention on Hazardous Materials • Sakaide Refinery received the Energy Conservation Center Director's Award (Energy Conservation: Excellent Case Presentation) • Introduction of FCC gasoline desulfurization unit at Chiba, Yokkaichi and Sakaide Refineries

Oil Industry	Japan and the World
<ul style="list-style-type: none"> Completed unleading of premium gasoline Provisional Measures Law Relating to Imports of Specified Oil Products came into effect 	<ul style="list-style-type: none"> Montreal Protocol (of the international Convention for the Protection of the Ozone Layer) adopted
	<ul style="list-style-type: none"> Exxon Valdez ran aground, causes huge oil spill off the coast of Alaska
	<ul style="list-style-type: none"> Gulf Crisis began Massive oil spills in the Persian Gulf
	<ul style="list-style-type: none"> Keidanren adopted "Keidanren Global Environmental Charter"
<ul style="list-style-type: none"> Sulfur content in diesel fuel reduced to less than 0.2% 	<ul style="list-style-type: none"> United Nations Framework Convention on Climate Change adopted United Nations Conference on the Environment and Development (Earth Summit) Japan's Ministry of International Trade and Industry requested companies to prepare Voluntary Environmental Plans
	<ul style="list-style-type: none"> Japan's Basic Environment Law enacted
	<ul style="list-style-type: none"> United Nations Framework Convention on Climate Change (UNFCCC) entered into force Cabinet decision approved Japan's Basic Environment Plan
	<ul style="list-style-type: none"> First Session of the Conference of the Parties (COP1) to the UNFCCC (Berlin) The Great Hanshin-Awaji Earthquake
<ul style="list-style-type: none"> Petroleum Association of Japan (PAJ) formulates Voluntary Plan for Control of Hazardous Air Pollution Substances Benzene content in gasoline reduced to less than 5 vol % Provisional Measures Law Relating to Imports of Specified Oil Products abolished 	<ul style="list-style-type: none"> ISO 14001 (international standard for environmental management systems) created COP2 of the UNFCCC (Geneva) Japan's Law on the Quality Control of Gasoline and Other Fuels entered into force Keidanren Appeal on Environment is formulated
<ul style="list-style-type: none"> Sulfur content in diesel fuel reduced to less than 500ppm PAJ formulates Oil Industry Voluntary Plan of Conduct for Environmental Conservation 	<ul style="list-style-type: none"> Nakhodka oil spill Amendment of Law concerning the Rational Use of Energy COP3 of the UNFCCC (Kyoto)
<ul style="list-style-type: none"> Lifting on the ban on self-service service stations 	<ul style="list-style-type: none"> Law Concerning the Promotion of Measures to Cope with Global Warming enacted Cabinet decision adopted national Guideline of Measures to Prevent Global Warming COP4 of the UNFCCC (Buenos Aires)
	<ul style="list-style-type: none"> First Follow-up of Keidanren Voluntary Action Plan on the Environment PRTR Law (on pollutant release and transfer registers) promulgated COP5 of the UNFCCC (Bonn)
<ul style="list-style-type: none"> Benzene content in gasoline reduced to less than 1 vol % 	<ul style="list-style-type: none"> COP6 of the UNFCCC (the Hague) Basic Law for Establishing a Recycling-Based Society promulgated in Japan Law Concerning the Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities promulgated Waste Disposal and Public Cleansing Law amended
<ul style="list-style-type: none"> Maximum summer gasoline vapor pressure reduced to 72kPa 	<ul style="list-style-type: none"> COP7 of the UNFCCC (Marrakech) Law Concerning Special Measures against PCB Waste promulgated Central Environment Council (Japan's top government advisory body on the environment) issues recommendation on soil conservation methods
	<ul style="list-style-type: none"> The World Summit on Sustainable Development (2nd Earth Summit in Johannesburg) Framework Convention on Climate Change COP8 held in New Delhi Soil Contamination Countermeasures Law comes into effect Energy Saving Law amended Automobile Recycling Law comes into partial effect Japanese government ratifies Kyoto Protocol Iraq war
	<ul style="list-style-type: none"> Ministry of the Environment establishes Business Practice Research Council Relating to Trading of Emission Volumes of Greenhouse Gases Partial amendment of Permitted Limits on Characteristics of Automobile Fuel and Permitted Limits on Volumes of Substances Included in Automobile Fuel Framework Convention on Climate Change COP9 held in Milan Ministry of the Environment prepares Low Pollution Car Guidebook 2003
<ul style="list-style-type: none"> Supply of sulfur free gasoline and diesel fuel commences (sulfur content of 10ppm or less) 	<ul style="list-style-type: none"> Kyoto Protocol entered into force Projection on the Guideline of Measures to Prevent Global Warming COP10 of the UNFCCC (Buenos Aires)

Result of Medium-term Environmental Plan “Blue Earth 21”

The Blue Earth 21 plan uses slogans to convey the message of the Medium-term Environmental Plan, which covers nine themes. Each department sets objectives and works to achieve them.

2002 - 2004 result of the Medium-term Environmental Plan, “Blue Earth 21”

Theme	Objective	Medium-term Target (Fiscal 2004)
1. Prevention of climate change Reduction of CO ₂ emissions from business activities and introduction of new energy	• Energy conservation	<ul style="list-style-type: none"> Reduce unit energy consumption at refineries by ▲10.7% (from 1990 level) ◇ (As the initial objective was achieved in the Medium-term, a higher objective was established.) Reduce fuel consumption for transportation. Tanker trucks ▲20%, coastal tankers ▲17% (vs. Fiscal 1990)
	<ul style="list-style-type: none"> Utilization of the Kyoto Mechanisms Introduction of new energy 	<ul style="list-style-type: none"> Promotion of energy conservation at the offices Reduce office electricity consumption by ▲5% (compared to Fiscal 2003); reduce company car fuel consumption by ▲7% (compared to Fiscal 2003) Consideration of Kyoto Mechanisms utilization Consideration of introducing new energy (promote application and commercialization of wind-generated power; SS solar panels: more than 2 cases/year)
2. Reduction of pollutant emissions Control of emissions levels for air and water pollutants below the regulatory standards and reduction of industrial waste, etc.	• Air pollution control	• Maintain the level of NO _x , SO _x , and particulate emissions from oil refineries (below the regulation value).
	• Water pollution control	• Maintain the level of COD discharge from oil refineries (below the regulation value).
	• Industrial waste reduction	<ul style="list-style-type: none"> Reduce landfill volume (average of Fiscal 2002-2004) by ▲81% from the 1990 level. Landfill volume/generated volume = less than 1.5%.
	• Management of chemical substances	• Implement and promote management of chemical substances in accordance with laws and regulations.
3. Soil environment measure Assessment of current situation and promotion of preventive measures	• Reduction of VOCs based on voluntary standards	• Take appropriate measures in accordance with the revised Air Pollution Prevention Law. ◇
	• Service stations (SS)	• Promote prevention of soil contamination at service stations, service stations to conduct self-inspections and implement countermeasures
4. Resource conservation Reduction of non industrial waste through the promotion of 3R (reduce, reuse and recycle)	• Other facilities	• Soil contamination investigations and countermeasures conducted by each business site.
	• Paper	<ul style="list-style-type: none"> Reduce the amount of electronic vouchers and slips by over ▲33% (as compared to the Fiscal 2002 level) ◇ Reduce the amount of paper purchased for copying use by ▲8% (as compared to the Fiscal 2003 level) ◇
5. Reduction of environmental impact of products Providing petroleum products with lower environmental impacts	• Daily use items	• Maintain the system of sorting, collection, and recycling at every business site.
	• Water	• Introduce wastewater recycling systems at service stations (2 or more locations).
6. Green purchasing Expansion of items covered by green purchasing	• Diesel fuel	• Establish system for supplying sulfur free diesel fuel (with a sulfur content of 10ppm or less).
	• Gasoline	• Establish system for supplying sulfur free gasoline (with a sulfur content of 10ppm or less).
7. Research & development Development of petroleum products and environmental technologies related to business activities and development of new energy technologies	• Material, equipment, and works	• Expand items covered under green purchasing to include more materials (such as construction materials), process supplies (such as chemicals and catalysts), and construction work.
	• Office supplies	• Continue implementing purchases in accordance with the standard.
	• Purchasing from green suppliers	• Implement purchasing from green suppliers, and expand the scope of green suppliers.
	• Petroleum product development	• Develop high performance catalysts to reduce environmental impacts of products.
8. Environmental conservation projects Continuous efforts to support projects, particularly those related to prevention of climate change	• Environmental technology development	<ul style="list-style-type: none"> Develop technologies to reduce excess sludge in order to minimize waste. Develop technologies to reduce and reuse catalysts in order to minimize waste. Develop technologies to analyze oil content in soil and to remedy oil contaminated soil. Conduct technological support related to vapor absorption/recovery such as VOC. Develop technologies for the conversion of natural gas to liquid fuel (GTL: gas to liquid).
	• New energy development	• Develop fuel cell systems.
	• Technical cooperation in environmental protection	• Transfer environmental technologies to other countries.
	• Cosmo the Card Eco projects	<ul style="list-style-type: none"> Continuously implement projects for preventing climate change as part of the “Living with Our Planet.” campaign: (1) Restoration and conservation of the environment in developing countries (2) Environmental protection in Japan (3) Environmental education
9. Measurements for environmental management Continuous efforts in environmental management and communication with multiple stakeholders	• Social contributions	• Continuously implement community programs
	• Environmental management	• Promote sharing of environmental awareness to develop human resources.
	• Communication	• Effectively communicate environmental information with each type of stakeholder.

▲: Minus ●: Achieved ×: Not achieved ◇: Set again or Reset in Fiscal 2004

Progress from Fiscal 2002 - 2004	Evaluation	Page
<ul style="list-style-type: none"> Reduced unit energy consumption at refineries by ▲10.9% (Fiscal 2004) from 1990 level. 	●	27
<ul style="list-style-type: none"> Fuel consumption by tanker trucks were reduced by ▲20% (Fiscal 2004) as compared to the Fiscal 1990 level. 	●	
<ul style="list-style-type: none"> Fuel consumption by coastal tankers decreased by ▲8% (Fiscal 2004) In Fiscal 2002, this decreased by ▲15%, but due to the number of trips increasing, the reductions were ▲11% for Fiscal 2003, and ▲8% for Fiscal 2004. 	×	
<ul style="list-style-type: none"> Office electricity was reduced by ▲4% as compared to the Fiscal 2003 level. 	×	
<ul style="list-style-type: none"> Fuel consumption by company cars was reduced by ▲13% as compared to the Fiscal 2003 level. 	●	
<ul style="list-style-type: none"> Offset the Australian emission credits against the CO₂ emissions from fuel used by the "Eco" card members (the "CO₂ free gasoline" plan). Participated in trial projects, training, etc. to accumulate know-how on emission credits and CDM. 	●	48
<ul style="list-style-type: none"> Wind-generated power: Built a power station in Sakata City, Yamagata Prefecture, and began operations in December 2004. 	●	34
<ul style="list-style-type: none"> Installation of solar panels: At 11 service stations in Fiscal 2002, 4 service stations in Fiscal 2003, and 12 service stations in Fiscal 2004. 	●	31
<ul style="list-style-type: none"> Maintained (complied with relevant regulations). 	●	28, 81-88
<ul style="list-style-type: none"> Maintained (complied with relevant regulations). 	●	29, 81-88
<ul style="list-style-type: none"> Reduced by an average of ▲88% in Fiscal 2002-2004 compared to the Fiscal 1990 level. 	●	20
<ul style="list-style-type: none"> Achieved landfill volume/generated volume = 1.2%. 	●	
<ul style="list-style-type: none"> Ascertained the amount of released and transferred, and reported them to the relevant authorities in accordance with PRTR Law. 	●	74, 81-88
<ul style="list-style-type: none"> Upon publication of the Air Pollution Prevention Law, reviewed voluntary VOC reduction measures, and continue to formulate an implementation plan. Confirmed that the storage facility subject to the regulation has already been dealt with. 	●	29
<ul style="list-style-type: none"> Implemented approximately 200 soil investigations and cleaning operations before Fiscal 2004. 	●	
<ul style="list-style-type: none"> Implemented EM Point (service station management tool) twice/year and the Environmental Forum (educational program on environmental management) for service station staff 10 times in Fiscal 2004. The EM Point and Environmental Forum are becoming established events. Conducted self-inspections of underground facilities (tanks, pipes, etc.) at all service stations owned by Cosmo Oil, and when an abnormality was discovered, repairs and other necessary measures were taken. 	●	20
<ul style="list-style-type: none"> Implemented measures in accordance with the soil investigations and the results. Made efforts to prevent soil contamination by thoroughly implementing maintenance and daily inspections of facilities. 	●	20
<ul style="list-style-type: none"> Introduced SAP, reviewed what vouchers and slips were no longer necessary, and preserved electronic ledgers, thereby reducing electronically generated paperwork by ▲33.3%. In Fiscal 2004, introduced a new personnel system, thereby reducing paperwork by approximately 2.5 million sheets. 	●	20
<ul style="list-style-type: none"> Reduced the amount of paper purchased for copying use by ▲8% as compared to the Fiscal 2003 level. 	●	
<ul style="list-style-type: none"> Established an office clean-up team to maintain the system, and implemented sorting, collection, and recycling at every business site. 	●	
<ul style="list-style-type: none"> As a result of trial introduction, the effect that was initially anticipated could not be achieved, and therefore, introduction of the wastewater recycling system was suspended. 	×	
<ul style="list-style-type: none"> Established a supply system, and began delivery of sulfur free diesel fuel in January 2005. 	●	
<ul style="list-style-type: none"> Established a supply system including the building of new facilities, and began delivery of sulfur free gasoline in January 2005. 	●	21, 65
<ul style="list-style-type: none"> Investigated standards for green purchasing, and commenced green purchasing in Fiscal 2004. 	●	20
<ul style="list-style-type: none"> Based on the standards formulated in Fiscal 2003, promoted green purchasing. 	●	20
<ul style="list-style-type: none"> Based on the standards formulated in Fiscal 2003, expanded the scope of green suppliers. 	●	20
<ul style="list-style-type: none"> Developed and commercialized high performance desulfurization catalysts for producing sulfur free diesel fuel. 	●	33
<ul style="list-style-type: none"> Developed excess sludge reduction system, and introduced it at the Sakaide Refinery in Fiscal 2002. Currently implementing verification testing to confirm 100% reduction of sludge generation at the Chiba Refinery. 	●	
<ul style="list-style-type: none"> In order to reduce the amount of FCC catalyst (fluid catalytic cracking catalyst) use, developed a metal scavenger, and implemented verification testing at refineries, but the anticipated effect could not be confirmed, and therefore, new tests are currently being planned. 	×	
<ul style="list-style-type: none"> Developed technology to analyze oil content in soil, which is currently being used at refineries and service stations. 	●	
<ul style="list-style-type: none"> Developed and selected the absorbing agent for VOC recovery systems. 	●	
<ul style="list-style-type: none"> Verified the developed catalyst at a GTL pilot plant: the conversion rate of the raw material and the selectivity rate cleared target values. 	●	
<ul style="list-style-type: none"> Implemented commercialization research for product diesel fuel fractions. 	●	
<ul style="list-style-type: none"> Implemented verification testing for LPG fuel cell systems, and developed hydrogen producing catalyst which uses kerosene as its raw material. 	●	22, 34
<ul style="list-style-type: none"> Implemented various cooperative efforts overseas (such as zero-flarization, energy conservation, etc.) 	●	39-40
<ul style="list-style-type: none"> Continuously implemented projects for preventing climate change as part of the "Living with Our Planet." campaign. Tropical rain forest protection (Papua New Guinea, Solomon Islands) Recycling-oriented farming (Philippines) South Pacific support (Kiribas Islands) Silk Road afforestation (China) Support for environmental education in schools (5 locations across the country) Environmental schools support (Mt. Fuji, Ogasawara, Shirakami mountain range) 	●	47-48
<ul style="list-style-type: none"> Implemented programs and events such as the "Cosmo Children's Earth School" for providing environmental education to the children who will carry us into the next generation, use of the internet in operating "Econets", a website that offers environmental education, environmental education workshops for educators, and implemented the "Cosmo Earth Conscious Act" that calls to society for environmental conservation. 	●	49-50
<ul style="list-style-type: none"> Incorporated environmental education into in-house training. 	●	
<ul style="list-style-type: none"> Continuously issued environmental information through environmental publications, advertisements, and the internet to each type of stakeholder. 	●	52

Cosmo Oil Group Consolidated Medium-term CSR Management Plan (Fiscal 2005 - 2007)

The Consolidated Medium-term CSR Management Plan was formulated with the objective of reconfirming the social responsibilities of the Cosmo Oil Group as a whole, and carrying out our role as a group in the same direction.

<Framework of the Medium-term Plan>

The framework of the Medium-term Plan consists of major measures which are to be carried out by the Cosmo Oil Group as a whole. Those measures are carried out voluntarily by each affiliated company, business site, department, or office. The measures which are to be carried out by the entire Cosmo Oil Group strive to reinforce the foundation upon which to implement reliable corporate management which serves as the basis of the group's corporate activities, and aim for mutual co-existence and growth of society and the Cosmo Oil Group. While there are various ways in which to approach CSR, the Cosmo Oil Group lists

5 measures as a group.

Meanwhile, since CSR is a concept that is fulfilled only when it is practiced in everyday work, each affiliated company, business site, department, and office are also in the process of devising a vision and measures for independently and voluntarily carry out CSR.

Fiscal 2005 has been earmarked as a year for reevaluating the corporate foundation, as we move forward and implement specific measures as they become possible to implement.

1. Activities at the Cosmo Oil Group

(1) Reinforce the Foundation for implementing Corporate Management with Integrity

1) Thorough awareness of "Social responsibility"

Only after awareness and substantive participation by each person can, we fulfill CSR as a company. It is based on this kind of cohesive awareness that each measure must be carried out.

- We will strive to achieve a shared awareness company-wide, and to continue and strengthen our educational and training programs.
In addition, we will assess on a regular basis the degree to which this awareness is being achieved by conducting company-wide surveys (the "Cosmo Survey").
- At each affiliated company and department, study groups will be implemented and awareness of CSR will be incorporated into daily work objectives so as to reflect CSR as it relates to each area of work in the management and overall business of the company.

2) Strengthening of risk management and the internal audit function

Internal control systems that can be independently managed by each affiliated company or department will be established and their control functions will be reinforced.

- For the improvement the effectiveness of risk management activities, the Risk Management Committee that evaluates risk and formulates measures for the group across the board will be established. Through seminars and simulation training, the sensitivity level towards risk shall be improved.
- In order to strengthen the internal control functions of each affiliated company, self management type risk management activities shall be developed at the affiliated companies.

3) Implementation of thorough safety management (formulate Consolidated Medium-term Safety Plan)

Safe operation in the energy business is the lifeline for the Cosmo Oil Group and for society. A standardized safety management system that applies to the entire Cosmo Oil Group shall be devised, and further improvements in safety levels shall be achieved by promoting voluntary safety practices.

(2) Mutual Symbiosis and Development of Society and the Cosmo Oil Group

1) Upgrading of environmental objectives (formulate Consolidated Medium-term Environmental Plan)

We will promote objectives which contribute to the building of a sustainable society (through environmental conservation activities, contributions, and educational programs), and which reduce environmental risks.

2) Full implementation of human rights/personnel measures

(formulate Consolidated Medium-term Human Rights/ Personnel Plan)

The conduct of each person serves as the fundamentals of corporate activity. We will strive to build a corporate atmosphere in which each individual and the company can fully apply their creative and innovative assets, and promote self realization-oriented, and growth-oriented human rights/ personnel measures that suit a diverse range of lifestyles.

2. Activities at Each Affiliated Company, Business Site, Department, and Office

We outline the social responsibilities that should be fulfilled at each business site and workplace, and formulate policies and action plans for achieving each objective.

Consolidated Medium-term Safety Plan

1. Point of Each Activity

In order to maintain safe operations and stable supply, a Medium-term plan founded on the following 2 pillars will be formulated, and safety management activities will be implemented.

- (1) A safety management system based on voluntary safety will be built.
 - A system that will enable continuous improvements in safety management will be built.
 - Potential dangers will be identified and measures formulated so as to avoid accidents in advance.
 - In order to minimize the impact of an accident or disaster in the unlikely event that it were to occur, the order of measures to be taken shall be reviewed and organized.
- (2) Necessary education and training will be continuously implemented.
 - By continuously implementing education and training, improvements will be made in terms of the knowledge and capabilities necessary for man aging safety.

2. Framework of the Plan

We will implement the following 4 areas in line with the change of social environment and our recognition on safety management in the past.

Theme	Activities
Establishment of the framework for the safety management system	Depending on the work content of each division, a structure by which continuous improvements can be made to safety management shall be put in place. For example, the possible introduction of a management system similar to that of ISO14001 shall be considered.
Identification, evaluation and reduction of potential risks	For the prevention of any accidents or labor related casualties in advance, potential risks shall be identified and evaluated, and measures will be taken concerning those potential risks which indicate the highest degree of risk, so as to reduce risk.
Reinforcement and implementation of the risk management system	Initial structures and communication systems will be reevaluated, the procedures to be followed in the case of an accident or disaster will be reinforced.
Planned implementation of educational training	By continuously implementing education and training, safety management related skills will be improved, and the technical knowledge and skill of veteran company staffs can be handed down.

Consolidated Medium-term Environmental Plan

1. Point of Each Activity

- (1) Reduction of environmental impact: Efforts to reduce various environmental impacts such as measures to prevent climate change or measures to prevent soil contamination, etc. will be implemented.
- (2) Environmental conservation and awareness: Efforts geared towards realizing a sustainable society will be implemented.

2. Framework of the Plan

Theme	Activities
Reduction of Environmental Impact	Prevention of Climate Change Promotion of energy conservation at the production points such as refineries and in transportation Objective: (Cosmo Oil) For each company (subject to this policy) to establish and promote the objective of reducing unit energy consumption by 15% (as compared to the Fiscal 1990 level) during the 1st promise period
	Hazardous Substances/Waste Related Measures* Challenge to reduce industrial waste to zero Objective: (Cosmo Oil) Reduce the landfill rate to less than 1% (average for Fiscal 2005-2007)
	Thorough compliance Thorough management of environmental pollutants, chemical substances, and industrial waste
Soil Environment Measures	Target: production sites such as refineries, oil depots, service stations, and idle land
	Based on the policies of each site, promptly devise measures based on the inspection results, implement measures to prevent outside influence, and carry out strategies for strengthening the management of facilities and operations
Environmental Conservation and Awareness	Promotion of the Office Clean project Reduction of consumption of copy paper, fuel consumption of company cars, and electricity consumption at the office (Establish and implementation structure within Fiscal 2005, and devise consolidated objectives)
	Development of green purchasing Green purchasing of office supplies and other consumable goods, and develop as a group (including all business sites) a bottom-up strategy for engaging suppliers to take part in environmental measures
	Promotion of environmental cooperation and social contributions Promotion of green purchasing of products for each company and business site Social and environmental cooperation activities, Cosmo Oil Eco Card Fund "Living with Our Planet." project, overseas technical cooperation
	Environmental Communication Relaying of information to the entire company and targeted for specific stakeholders, and promoting mutual communication

* Common activities on the scoped 26 group companies

Consolidated Medium-term Human Rights/ Personnel Plan

1. Point of Each Activity

- (1) Personnel measures that respect basic human rights will continue being implemented (basic portion).
- (2) In the spirit of respecting diversity, using "people" as the key word, efforts will be made to realize a "bright and comfortable workplace" and to improve motivation among the company staffs. (Added value portion)

2. Framework of the Plan

Theme	Activities
Human Rights (respect for basic human rights, ban on forced or child labor, etc.)	Implementation of human rights training, conducting of human rights surveys at overseas business sites, study ratification of the Global Compact
Respect for Diversity, Equal Opportunity, etc. (promotion of fair employment and benefits)	Promotion of employment of disabled persons (law: 1.80%), promotion of measures to prevent sexual harassment, etc., practicing of fair employment and benefits
Workplace Health (promotion of mental and physical healthcare measures)	Implementation of stress checkups, measures for preventing damage to health due to overwork, health checkups to be carried out 100%
Training and Development (support of self-education career development)	Promotion of obtaining legal qualifications, support for ability development through which a person can grow, verification of education by class
Benefits (assistance for work/life balance)	Measures responsive to the Law for promoting nurturing of the next generation promotion of child-rearing/ care leave, support for leisure activities
Employment Guarantee/ Job Creation	Measures responsive to the Law for the Stabilization of the Employment of the Aged, promotion of reemployment support services

Supply of Sulfur Free Gasoline and Diesel Fuel

In response to the air pollution issue that has arisen as a result of rapid motorization since the 1970s, the oil industry has been striving to respond to the needs of society by actively engaging in measures to reduce the environmental impact of gasoline and diesel fuel. In January 2005, we began supplying sulfur free (sulfur content of 10ppm or less) gasoline and diesel fuel.

➤ Reducing the Environmental Impact of Gasoline

The Japanese oil industry has been striving to reduce benzen content, vapor pressure and sulfur content, in order to reduce the environmental impact of gasoline.

- **Reducing Benzene Content**

Since January 2000, the benzene content in gasoline, which is considered possibly harmful to humans, has been reduced from 5% to 1%.

- **Reducing Vapor Pressure**

In order to reduce vaporized gas which can be a cause of photochemical smog, since 2001, the vapor pressure for gas during only the summer season has been reduced from less than 78kPa to less than 72kPa. The gasoline with less than 65kPa has been voluntarily produced in 2005.

- **Reducing Sulfur Content**

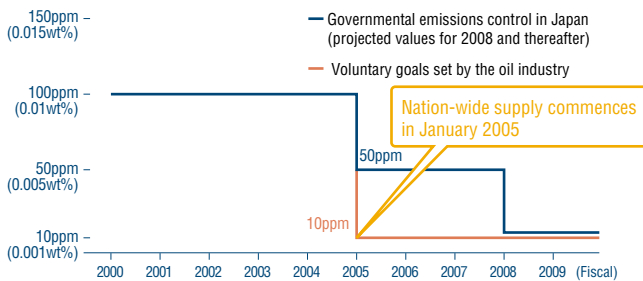
Low sulfur content of gasoline reduced pollutants in the air and also plays a role in maximizing the performance of emissions cleaning systems in automobiles. The oil industry has repeatedly implemented measures to reduce the sulfur content of gasoline.

We began supplying sulfur free gasoline (with sulfur content of 10ppm or less) in January 2005.

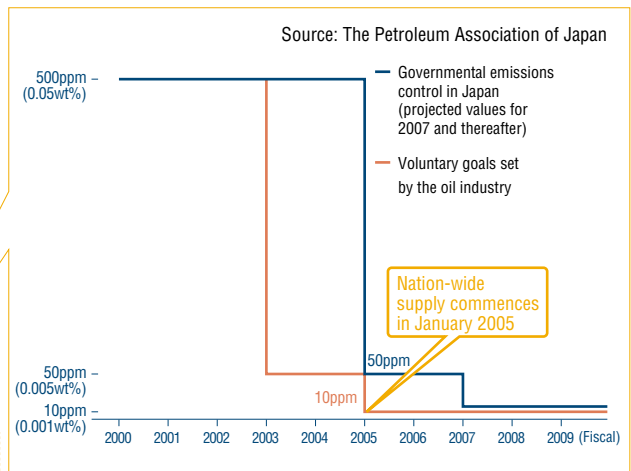
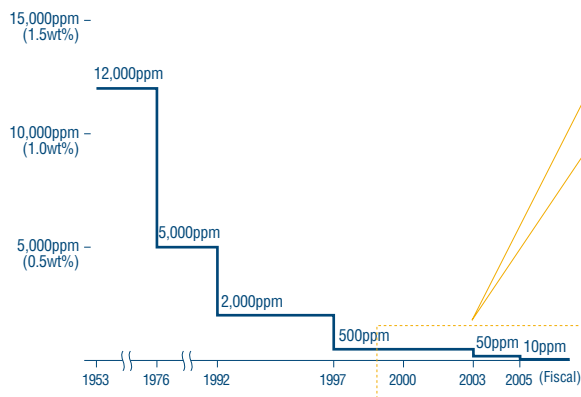
➤ Reducing the Environmental Impact of Diesel Fuel (Reduction of Sulfur Content)

The oil industry, in response to the changes in emissions regulations, has utilized state-of-the-art technologies in an effort to reduce the sulfur content of diesel fuel. In April 2003, we supplied diesel fuel with a sulfur content of 50ppm, and we were able to begin supplying sulfur free diesel fuel (with sulfur content of 10ppm or less) by January 2005.

■ Current Status and Future Projection concerning the Sulfur Content in Gasoline
Source: The Petroleum Association of Japan



■ Current Status and Future projection concerning the Sulfur Content in Diesel Fuel
Source: The Petroleum Association of Japan



• **Reducing Sulfur Content in Gasoline and Diesel Fuel**

Cosmo Oil began supplying sulfur free (sulfur content of 10ppm or less) gasoline and diesel fuel in 2005. This was the result of our voluntarily moving forward the schedule for implementing restrictions which called for reducing the sulfur content to 10ppm or less by 2007 for diesel fuel and by 2008 for gasoline. Although the restriction that existed in Japan until now, that required the sulfur content in gasoline and diesel fuel to be 50ppm or lower, is a very stringent regulation standard internationally including for developing countries, we were able to reduce sulfur content to an even lower level (refer to diagram). Sulfur free gasoline and diesel fuel, if used with the newest, envi-

ronmentally friendly automobiles, can not only reduce NOx and PM emissions, but can also be useful in improving the fuel consumption of automobiles. For this reason, we anticipate that these sulfur free fuels will also help to reduce CO₂, thereby serving as effective countermeasures to climate change as well. In the Kyoto Protocol Achievement Plan, based on the condition that automobiles which run on sulfur free fuels by installing the direct fuel-injection lean burn technology will have increased, it is projected that CO₂ emissions will be reduced by 1.2 million tons in Japan, nationwide, by 2010.

■ International Comparisons of Restrictions on Sulfur Content

Source: The Petroleum Association of Japan

Since January, 10ppm or less for nationwide delivery (voluntary action)

		2004	2005	2006	2007	2008	2009	2010
Gasoline (regular)	Japan (till December 2004: approximately 35ppm)		50ppm or less			10ppm or less (scheduled)		
	EU (2004: 150ppm)		50ppm or less				10ppm or less	
	U.S. (2004: 300ppm)			80ppm or less				

Since January, 10ppm or less for nationwide delivery (voluntary action)

		2004	2005	2006	2007	2008	2009	2010
Diesel fuel	Japan (till December 2004: approximately 50ppm)		50ppm or less		10ppm or less (scheduled)			
	EU (2004: 350ppm)		50ppm or less				10ppm or less	
	U.S. (2004: 500ppm)			15ppm or less				

• **Reducing Sulfur Content in Sulfur Free Gasoline**

Two effects are anticipated from reducing the sulfur content in gasoline, below the stringent level of 10ppm or less that we have achieved.

One is the reduction of CO₂ emissions, as a result of improved fuel consumption by automobiles. Currently, the most promising technology for the purpose is the lean combustion engine, otherwise known as the direct injection engine or the lean burn engine. New engines have a lean NOx catalyst in their exhaust gas treatment equipment. The performance of this catalyst declines with sulfur content, and therefore, it is necessary to have a gasoline that contains very little sulfur. In other words, without desulfurization of gasoline, the direct injection, lean burn engine that has superior fuel consumption could not be developed and commercialized.

The other effect is that through desulfurization, the durability of existing gas exhaust processing equipment for automobiles (3-way catalyst) would be improved, and emissions of nitrogen oxide (NOx), carbon monoxide (CO), and hydrocarbons (HC) would also be reduced.

Desulfurization of gasoline is not an issue that should be handled alone by the oil industry, but it is an issue in which the automobile industry also needs to be a part. This should be a part of a renewed effort in handling problems related to the global environment.

• **Producing Sulfur Free Gasoline (Introduction of FCC Gasoline Desulfurization Unit)**

In order to produce sulfur free gasoline, Cosmo Oil introduced new FCC gasoline desulfurization unit at its 3 refineries in Chiba, Yokkaichi, and Sakai.

Gasoline is generally produced by mixing several gasoline components. Of those, one of the components which has the highest sulfur content is FCC gasoline that comes from FCC (fluid catalytic cracking). For this reason, desulfurization of the FCC gasoline is the short-cut to reducing the sulfur content of gasoline.

The basic principle behind desulfurization is hydrodesulfurization which is the process of eliminating sulfur by making it bind with hydrogen, but at the same time, this process breaks down elements that have a high octane number. In order to avoid this reaction, the desulfurization unit that has been newly introduced utilizes a new technology that separates the fraction which has high sulfur content and low octane number from the fraction that has low sulfur content and high octane number, and then continues to desulfurize only the fraction that has high sulfur content and low octane number.

Cosmo Oil Group Environmental Technologies and Products

• Automobile Oil Products (Cosmo Oil Lubricants Co.)



Cosmo Rio Grand Road



Cosmo Rio Neo Road

Oils for gasoline engines, "Cosmo SM⁺1 Road"

Oil for diesel engines, "Shinsei"

ECO diesel, "Kaisei"

Oil for natural gas engines, "Cosmo CNG Oil"

• Oil Products for Other Uses (Cosmo Oil Lubricants Co.)



Cosmo Terra Grease UR



Cosmo Terra Fluid E

Biodegradable lubricant, "Cosmo Terra Series"

Hydraulic oil, "Cosmo Super Epoch UF46"

Metal cutting oil, "Cosmo Clean Cut Cool Series"

Lubricating oil for food and drug processing machinery, "Cosmo Underroll Series"

• Coating Agent (Cosmo Trade and Service Co.)

Heat insulating coatings, "Super Therm"

Concrete protector and strengthener, "Ashford Formula"

• Plant Facilities



Hydrocarbon vapor recovery unit



Excess sludge reduction unit



Biofloura Zero One

Hydrocarbon vapor recovery unit (Cosmo Engineering Co.)

VOC (volatile organic compound) recovery unit (Cosmo Engineering Co.)

Excess sludge reduction unit (Cosmo Engineering Co.)

Dioxin removal unit for wastewater (Cosmo Engineering Co.)

Wastewater treatment technology (Cosmo Engineering Co.)

Wastewater treatment system, "Bioflora 01" (Cosmo Eco Support Co.)

Cleaning agent, "New Safezol" (Cosmo Eco Support Co.)

• Natural Gas Fuels (Cosmo Oil Gas)

Home-use LP gas engine /
cogeneration system (Ecowill)



Liquefied Petroleum Gas

LP gas engine cogeneration system for home use, "ECOWILL⁺4th"

• Other (Cosmo Matsuyama Oil Co.)



Aromatic extraction unit

Base material for neutrino detector, "Pseudocumene"

Effective use of benzene

Environmentally conscious solvents

*1 SM:SM is the newest grade in the international engine oil standards set forth by the API (American Petroleum Institute).

*2 DPF:Abbreviation for Diesel Particulate Filter. This is a filter that eliminates soot in the exhaust gas from diesel-powered vehicles.

*3 DH-2:DH-2 is a vehicle-use mobiloil standard set forth by JASO (an association that promotes spreading of engine oil standards).

*4 ECOWILL:ECOWILL is the brand name of 3 municipal gas companies, and with the approval of Osaka Gas Company, Cosmo Oil gas uses this brand name. The product is produced by Honda Motor.

This gasoline engine oil has sustainable fuel-saving performance which enhances durability and stability, takes into consideration exhaust gas cleaning, and responds to the various needs of an automobile society.

The chlorine content in the oil has been reduced to less than one-tenth of the generally available product. This oil also increases the diesel engine's life and increases oil exchange distance.

This diesel engine oil responds to DPF*² (DH-2*³) and realizes heat resistance and wear resistance.

This oil for exclusive use with natural gas and LP gas fueled automobiles has superior heat resistance, high temperature cleaning, and is wear resistant. This oil also increases the diesel engine's life and increases oil exchange distance.

This lubricant is broken down into water and CO₂ by micro organisms and obtained the "Eco mark (Japan Environment Association)" designation. This is used for port industry equipment, construction equipment, agriculture equipment, railway vehicles, outboard motors, chainsaws, etc.

This non-zinc, high ignition point, wear resistant hydraulic oil has an electricity saving effect and can control industrial waste generation (prolongs life).

This chlorine free cutting oil can help resolve problems caused by chlorine during the waste oil processing process or cleaning process.

This lubricant has cleared the global standard for safety, "USDA (U.S. Department of Agriculture)/ NSF H-1". It has many proven uses in HACCP certification, etc. in drug/ food factories in the United States, Europe, and Japan.

This heat insulating coating agent was developed from NASA technology in the U.S. for commercial use. In addition to insulating roofs, ductwork, etc., its use is also being studied for applications related to railway vehicles, buses, and trucks.

This formula prolongs the life of concrete floors, and prevents the generation of grain dust. It is used in places such as transportation hubs, home centers, and factories.

This is an absorption/ adsorption unit for recovering hydrocarbon vapors such as gasoline. This recovery equipment which functions on our exclusive "Cosmo adsorption method" is used not only by Cosmo Oil but at petroleum terminals of other companies as well.

This VOC adsorption equipment applies hydrocarbon vapor recovery technology. The high recovery rate, high safety, and conservation of space have been highly evaluated, and it is used in places such as chemical, printing, and drug factories.

This facility can be added to already existing active sludge facilities to reduce the amount of excess sludge generation. To date, it has reduced surplus sludge that had been treated as industrial waste by 90%, thereby contributing to the reduction of waste.

This system using our own activated charcoal was developed in order to treat wastewater that contains dioxin. It contributes to the elimination of dioxin from wastewater that is generated by the final treatment location of waste, or from wastewater generated by the scrapping of incinerators.

This technology combines the high efficiency activated sludge equipment, desulfurization equipment, and dephosphorization equipment. It is used, of course, for wastewater treatment at refineries, but also for high level treatment of waste at places such as hog farms.

This system breaks down oil content and organic material in wastewater into water and CO₂ by using micro organisms. It does not require chemical drugs or filters.

This is a cleaning agent for industrial use which offers an alternative to chlorofluorocarbon or trichloroethane, and which does not contain substances that would be subject to the PRTR Law or the regulation to prevent poisoning by organic solvents.

We supply LP gas which is a green energy similar to natural gas that has little impact on the environment. In addition to developing advanced LPG automobiles, personal LPG auto stands, and LP gas co-generators for household use, we are also working to expand LPG demand by developing LP gas fuel cell systems for household use. In the future, we will develop other clean energies such as DME and LNG, and promote the stable supply of comprehensive gas energies that are environmentally conscious.

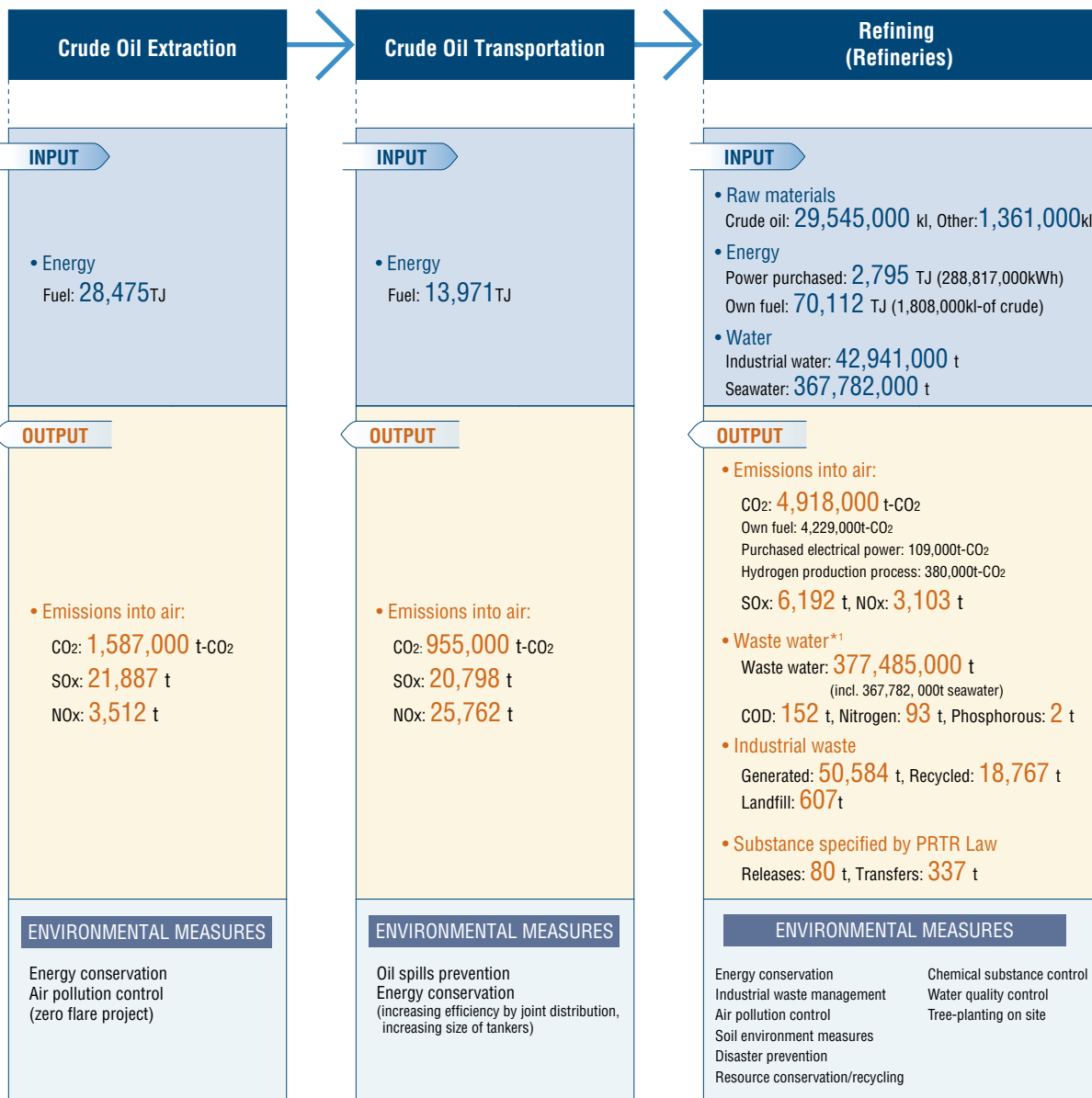
"ECOWILL", by generating electricity with clean LP gas, and by utilizing the heat generated by power generation to hot water or heating, reduces primary energy consumption by approximately 20%. It also reduces CO₂ by approximately 30%. Energy availability is 85%, over twice as efficient as prior art electricity supply systems. In Fiscal 2005, we will continue to promote the development of LP gas special agents and to focus on contributing to the preservation of the environment through our products.

Pseudocumen is used as a base material for neutrino detector at "Kam LAND", a neutrino measurement facility at which Tohoku University Team is taking place the research.

We accept from each of the refineries benzene which is separated by benzene eliminating equipment, and upgrade it to raw material for chemical products by way of aromatic extraction equipment.

As solvents that have little impact on the environment, we manufacture isohexane (aerosol, soldering flux), methyl cyclohexene (printing ink solvent for use with food packaging), and ethyl cyclohexene (stationary solvents, reactive solvents for medical/ agricultural manufacturing use), as well as non-chlorine/ low aromatic cleaning solvents and paint solvents.

Environmental Impact of Business Activities



R&D Center

ENVIRONMENTAL MEASURES

- Energy conservation
- Resource conservation/recycling
- Industrial waste management
- Chemical substance control
- Water quality control
- Disaster prevention

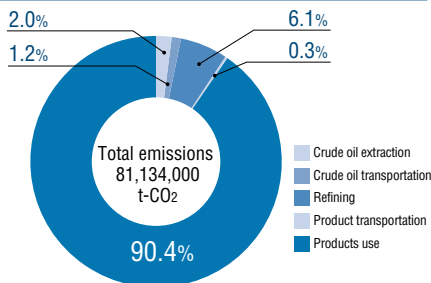
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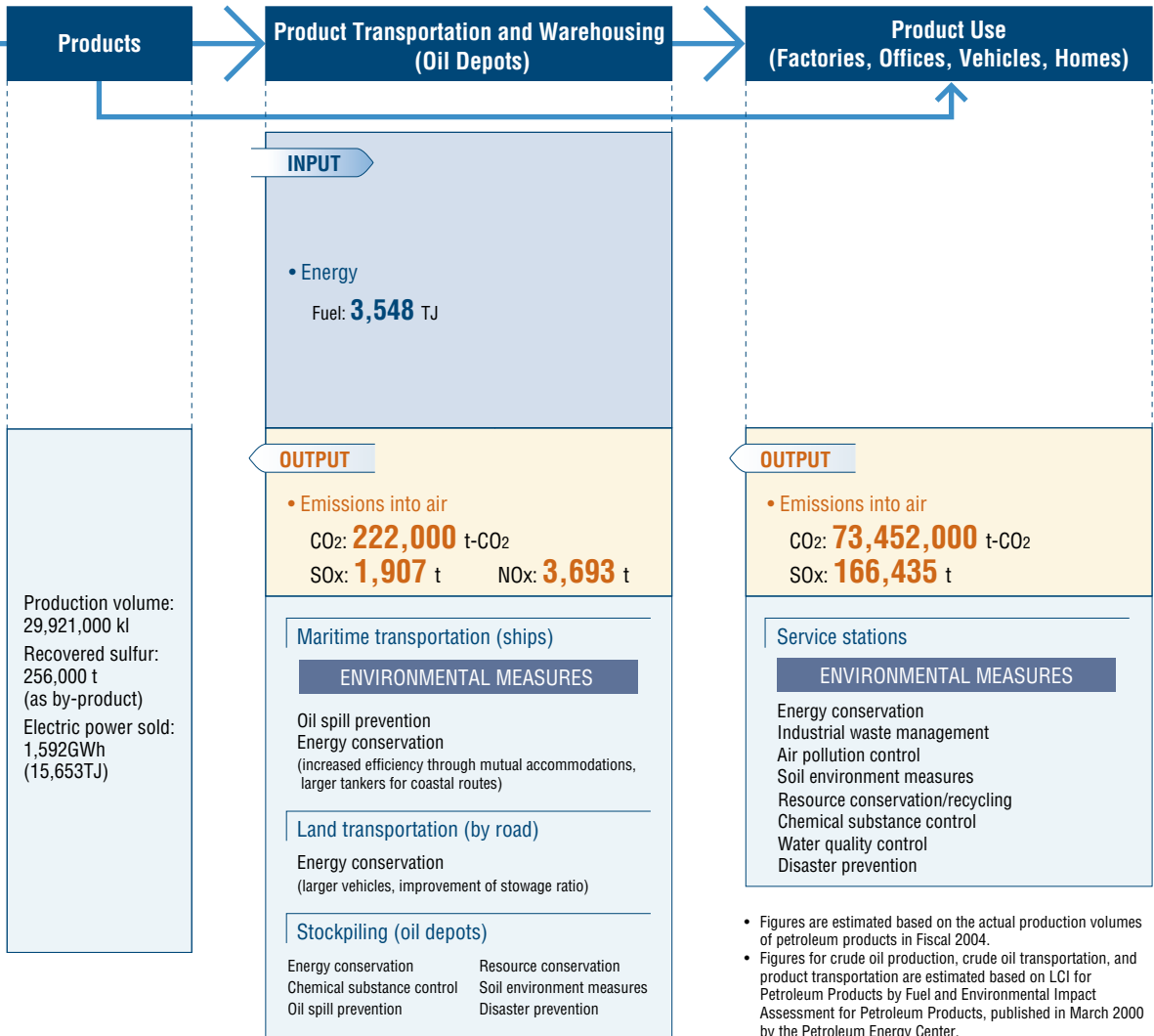
ENVIRONMENTAL MEASURES

- Energy conservation
- Resource conservation/recycling
- Green purchasing

* 1 We emitted clean water excluding this data.

■ Proportion of CO₂ in Oil Life Cycle





- Figures are estimated based on the actual production volumes of petroleum products in Fiscal 2004.
- Figures for crude oil production, crude oil transportation, and product transportation are estimated based on LCI for Petroleum Products by Fuel and Environmental Impact Assessment for Petroleum Products, published in March 2000 by the Petroleum Energy Center.
- Figures for refining and product consumption are derived from environmental accounting. See p.75-78 of the Related Data for the methods and basis of calculations.
- In relation to CO₂ emissions from refining, we calculate the data by the method recommended by the Ministry of Environment's "Guidelines Concerning Methods of Calculation of Emissions of Greenhouse Gases by Businesses (draft)".
- Refining includes data from the Yokkaichi Kasumi Power Station and Cosmo Matsuyama Oil Co., Ltd.
- Electric power sold refers to power sold by the Chiba Refinery, the Yokkaichi Kasumi Power Station and Cosmo Matsuyama Oil Co., Ltd. The CO₂ emissions from refining is the amount after deduction of CO₂ emissions, a result of such power generation. It includes CO₂ emissions for the purchased electricity.
- Figures here do not include CO₂ emissions associated with the construction of facilities.
- The figures for SO_x emissions at the consumption stage are reported for reference. The figure indicates the potential SO_x emissions based on sulfur content in products, and does not take into account SO_x reductions resulting from desulfurization of emissions that occurs during use by customers. Thus, the actual figure for SO_x emissions is expected to be lower than the figure reported here.
- The figures for CO₂ and SO_x emissions at the use of products stage include potential impacts of naphtha. Naphtha is used as an ingredient in petrochemicals and fertilizers, which by themselves do not emit CO₂ or SO_x.

■ Oil Life Cycle Inventory (LCI)

Stage	Crude Oil Extraction	Crude Oil Transportation	Refining	Products Transportation	Products Use	Total
Energy Consumption (TJ)	28,475	13,971	72,908	3,548	1,074,297	1,193,199
CO ₂ Emissions (1,000t-CO ₂)	1,587	955	4,918	222	73,452	81,134
SO _x Emissions (t)	21,887	20,798	6,192	1,907	166,435	217,219
NO _x Emissions (t)	3,512	25,762	3,103	3,693	—	—

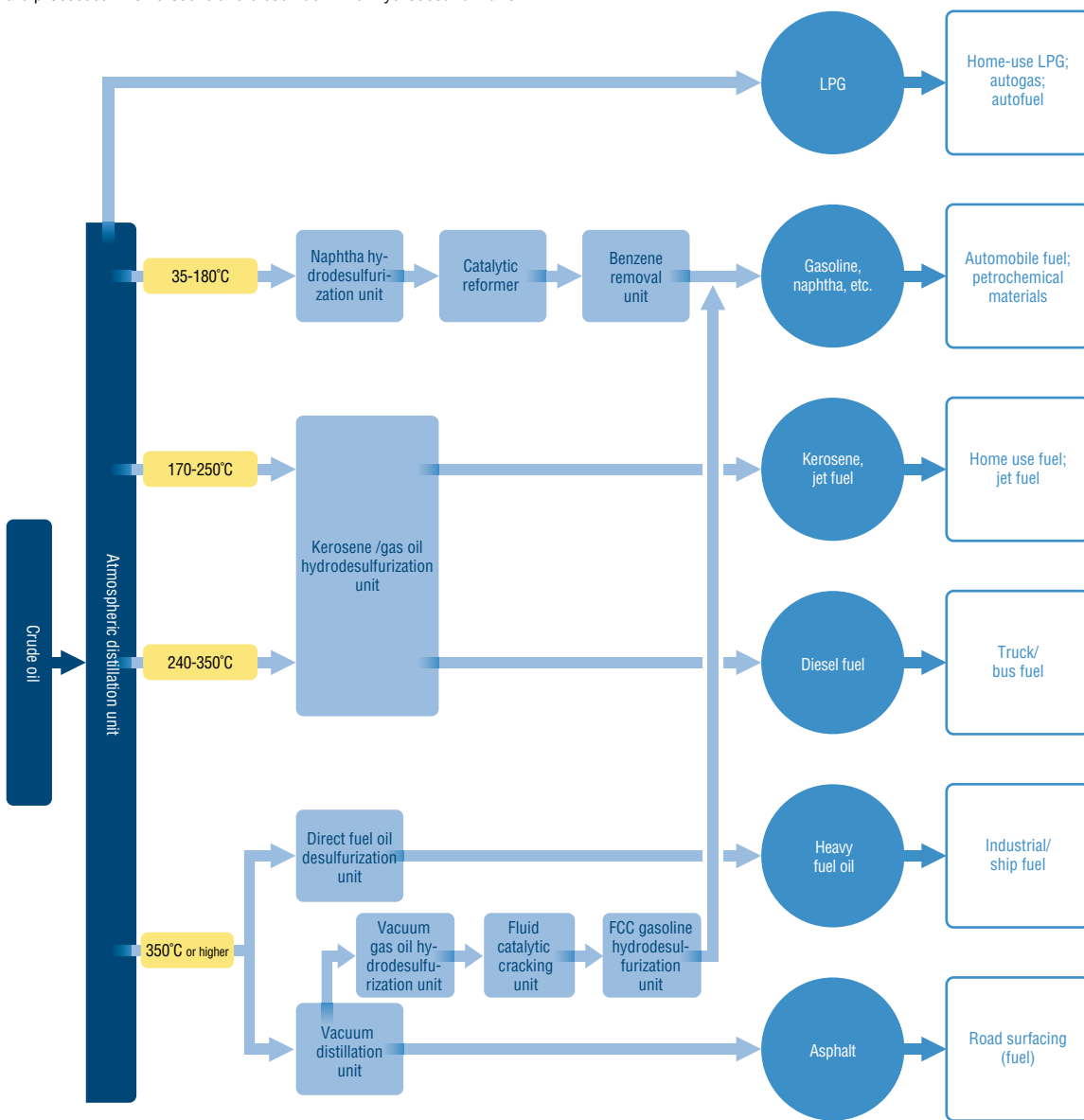
Production Flow of Petroleum Products

Various petroleum products are produced when crude oil is refined in a refinery. Crude oil is a mixture of hydrocarbons having a wide range of boiling points. Middle East oil, on which Japan is greatly dependent, has a high sulfur content.

In the refinery, crude is distilled in an atmospheric pressure distillation unit and separated into gas, naphtha, kerosene, gas oil and heavy fuel oil fractions. LP gas is produced from the gas fraction. After hydrodesulfurization, the naphtha fraction is processed by a catalytic reformer and converted into gasoline, etc., and the kerosene and gas oil fractions are processed into kerosene and diesel fuel. After hydrodesulfurization

in a direct fuel oil desulfurization unit, the heavy fuel oil fraction is processed into heavy fuel oil, or is separated using a vacuum distillation unit, with the light fraction being converted to gasoline by hydrodesulfurization in a vacuum gas oil hydrodesulfurization unit and processing in a fluid catalytic cracking unit, and the heavy fraction being converted to asphalt.

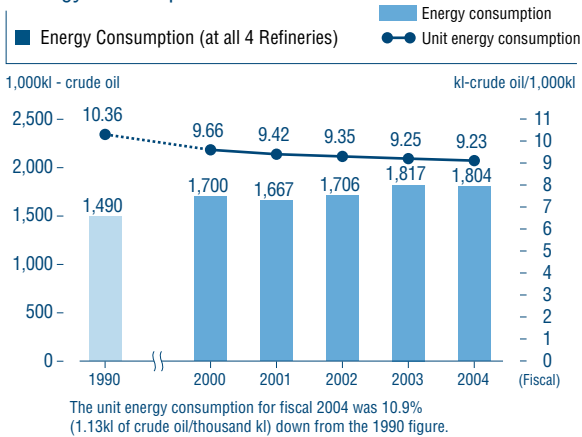
These processes in a refinery impact the environment in the form of atmospheric pollution, water contamination and waste materials, etc., but we take various actions to reduce these impacts.



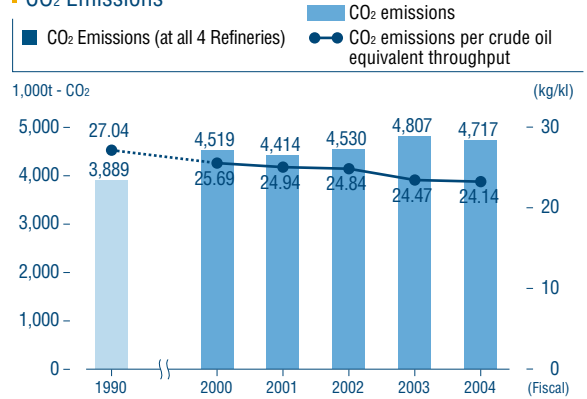
*Environmental performance data (p. 71-74) relates mainly to Cosmo Oil's 4 refineries.

Prevention of Climate Change

Energy Consumption

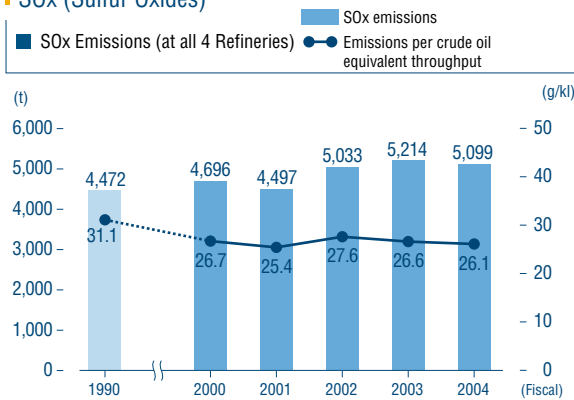


CO₂ Emissions

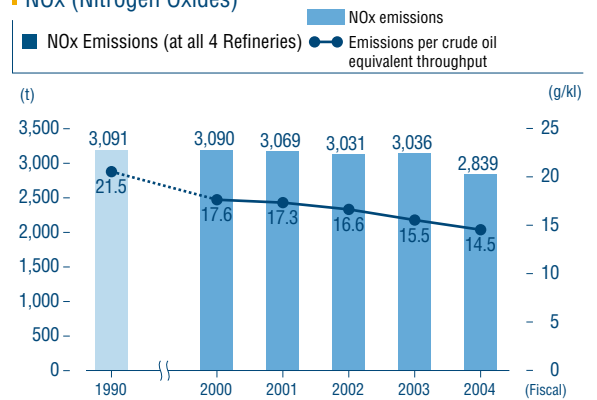


Prevention of Air Pollution

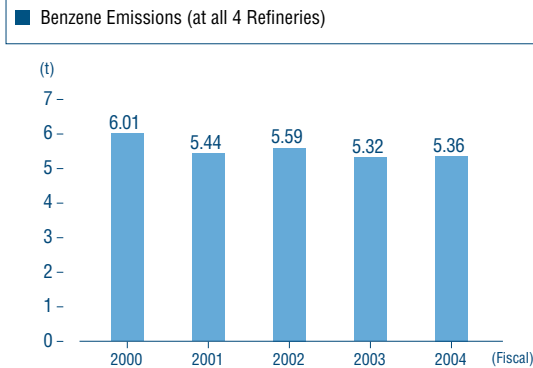
SO_x (Sulfur Oxides)



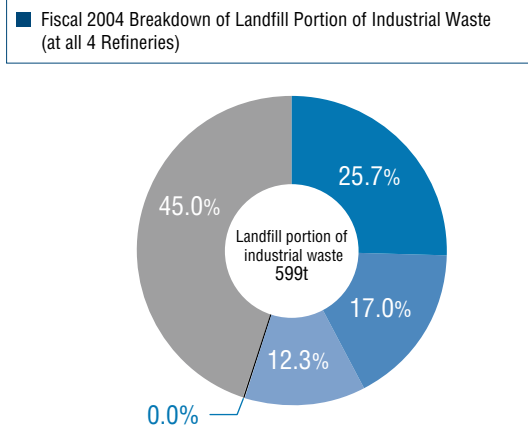
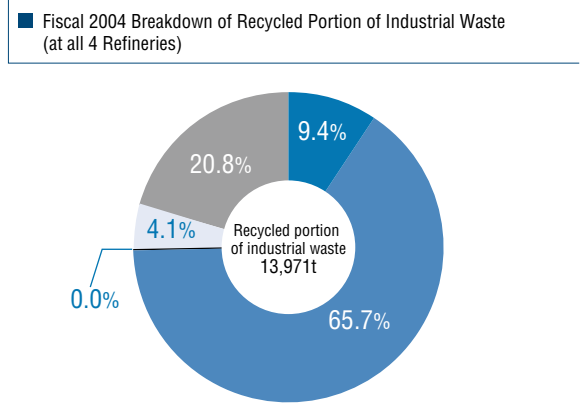
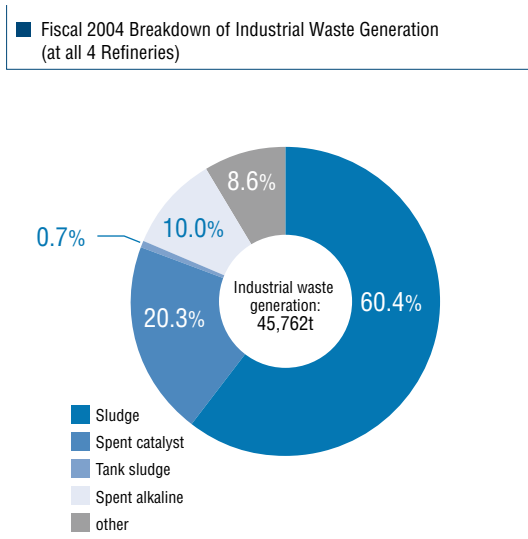
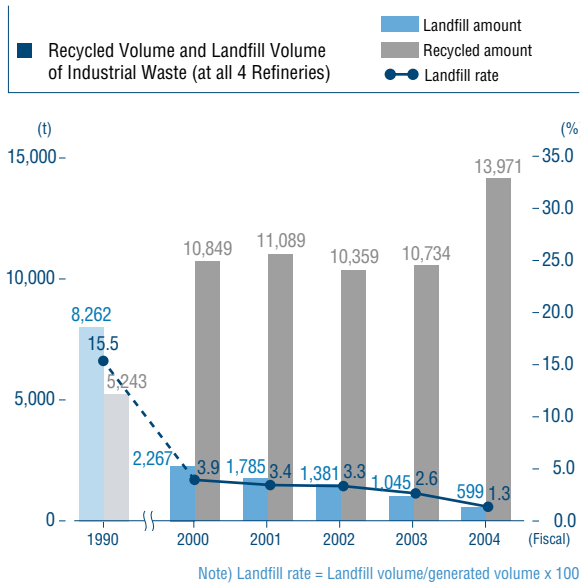
NO_x (Nitrogen Oxides)



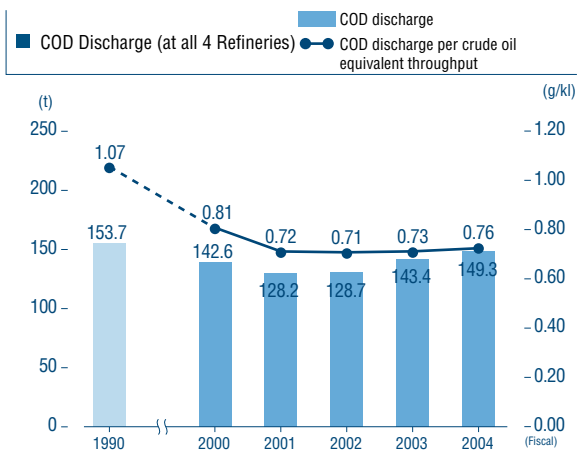
Benzene Emissions



Reduction of Industrial Waste



Prevention of Water Pollution and Effective Use of Water Resources



Management of Chemical Substances

Management in Accordance with the PRTR Law

Fiscal 2004 Release and Transfer of Substances Subject to the PRTR Law (at all 4 Refineries)

Substances Subject to the PRTR Law	Amount released				Amount transferred	Total Transfer Amount
	Air	Water	Soil	Total		
Ethyl Benzene (kg/ year)	1,460	0	0	1,460	0	1,460
Xylene (kg/ year)	5,930	0	0	5,930	0	5,930
Cobalt and its Compounds (kg/ year)	0	0	0	0	11,360	11,360
1,3,5-trimethyl Benzene (kg/ year)	2	0	0	2	0	2
Toluene (kg/ year)	21,400	0	0	21,400	0	21,400
Nickel Compounds (kg/ year)	0	0	0	0	128,200	128,200
Benzene (kg/ year)	5,360	0	0	5,360	0	5,360
Molybdenum and its Compounds (kg/ year)	0	0	0	0	197,000	197,000
Zinc Compounds (kg/ year)	0	2,700	0	2,700	0	2,700
Dioxin (mg-TEQ/ year)	1	20	0	21	0	21

Note) 1. In addition to the above, more than 1,000kg/year of 2-aminoethanol, cresol, cyclohexylamine, 1,2-dichloroethane, 1,2-dichloropropane, tetrachloroethylene, nonylphenol, and hydrazine are handled, but all of their release and transfer are 0 kg/year.

2. The above data includes figures for the Yokkaichi Kasumi power station.



Environmental Accounting

The Cosmo Oil Group began environmental accounting in Fiscal 2000, and the practice is now in its 5th year.

In order to create an environmental account, we reference the Ministry of Environment's "Environmental Accounting Guidelines (Fiscal 2005 Edition)" and "Environmental Conservation Cost Categories Guideline 2003 Edition", and tabulated the environmental conservation costs and environmental conservation benefits. In addition, in tabulating the environmental conservation costs, all accounting items in the financial accounts were covered as has been in the past.

The following characteristics must be taken into considering when thinking about the environment in relation to the petroleum industry:

(1) In order to control the substances with environmental impact generated when products are used (at the time of combustion) by the customer, an enormous cost must be incurred (refer to upstream/downstream costs).

(2) Since petroleum products from Middle Easter crude oil are high in sulfur content, a tremendous amount of investment has been made for many years in terms of environmental conservation (refer to year end acquisition costs).

In order to make it possible to ascertain these characteristics in value terms, we created "upstream/downstream costs" accounting items under environmental conservation costs. Furthermore, in order to make it easier to understand the aggregate cost from the past, we also tabulated "year-end acquisition costs".

At the Cosmo Oil Group, we have disclosed the tabulation results of our environmental accounting book in this Sustainability Report, as well as on our website and in our brochure to shareholders. In addition, the tabulate cost data has been used as the calculation basis for our company's contracts during the decision making process.

Period and Scope

Calculation Period:

Fiscal 2004 (April 1, 2004 to March 31, 2005)

Scope of Calculation:

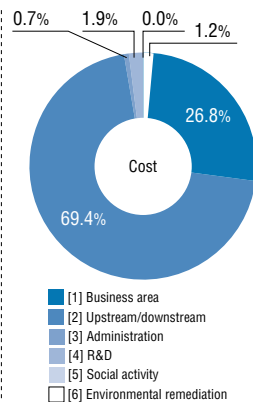
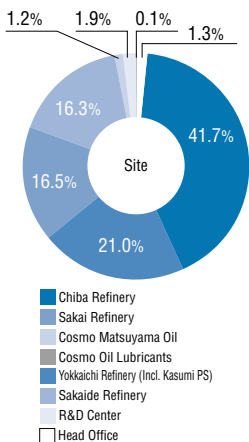
4 refineries owned by Cosmo Oil, Yokkaichi Kasumi Power Station, Head Office, branches, R&D Center, affiliate Cosmo Matsuyama Oil Co., Ltd. and Cosmo Oil Lubricants Co., Ltd. For affiliates, only those costs and benefits which are closely related to our refineries are extracted and collected.

Counting by Respective Sites:

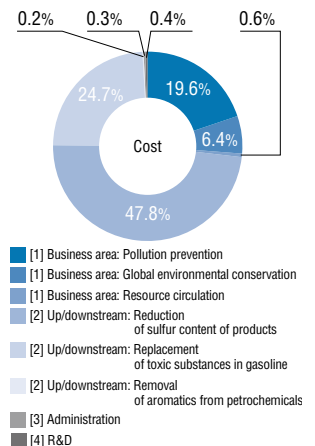
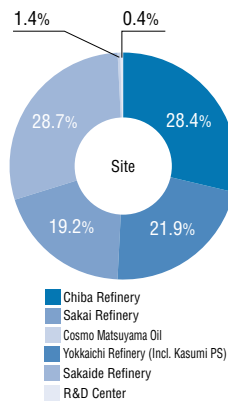
Site-by-site data are shown on pages 81 through 92 for 4 refineries of Cosmo Oil, R&D Center, Head Office, branches, Cosmo Matsuyama Oil Co., Ltd. and Cosmo Oil Lubricants Co., Ltd. (Yokkaichi Refinery's data includes some data of Yokkaichi Kasumi Power Station.)

Subject Companies and Sites	Site	Remarks
Cosmo Oil Co., Ltd.	Chiba Refinery	Calculated all data at the site
	Yokkaichi Refinery	Calculated all data at the site
	Sakai Refinery	Calculated all data at the site
	Sakaide Refinery	Calculated all data at the site
	Yokkaichi Kasumi PS	Calculated all data at the site
	Head Office Branches	*Environment related donations, environmental report production costs and electricity consumed
	R&D Center	*Purchase conservation cost of recycled paper, environmental remediation cost.
Cosmo Matsuyama Oil Co., Ltd.		*Only environmental conservation costs and benefits of the research and development
		*Reducing environmental impact of product, etc
Cosmo Oil Lubricants Co., Ltd.	Chiba Plant	*Green purchase cost of lubricant raw material (other than this are included in the figures of Cosmo Oil Chiba and Yokkaichi Refineries)
	Yokkaichi Plant	

Environmental Conservation Costs



Year-end Acquisition Costs



Changes from the Previous Year

The main change compared to the previous year is that costs associated with soil contamination measures have been added as “environmental remediation cost”.

Calculation Results

Environmental Conservation Cost

The calculation results for Fiscal 2004 indicated an investment of 14.9 billion yen, an increase of 3.5 billion yen as compared to the previous year. The main reason for this increase was the introduction of FCC gasoline desulfurization units for producing sulfur free gasoline. Expenses were 56.4 billion yen, an increase of 8.9 billion yen as compared to the previous year. The main reason for this increase was the maintenance and repair work that was done on the FCC units and desulfurization units in the course of the regular maintenance schedule. The year end acquisition cost was 165.6 billion yen, an increase of 16.1 billion yen as compared to the previous year. The main reason for this increase was the same as for the increase in the investment cost, which was the introduction of FCC gasoline desulfurization units.

Environmental Conservation Benefit

The “benefits corresponding to worksite costs” has increased overall since the last year in terms of the environmental impact per crude oil equivalent throughput. The “benefits related to upstream and downstream costs” in terms of the concentration and unit per output have also increased since the last Fiscal year for almost all items. The reason why the amount of impact has decreased greatly for both the “benefits corresponding to worksite costs” and the “benefits related to upstream and downstream costs” is because the above-described improvements in concentration and unit per output led to a decrease in the production volume.

Integration of Environmental Impact and Environmental Productivity

We started assessments using JEPIX (Japan Environmental Policy Index) in addition to EPS as a method for integrating environmental impact. EPS is a method that was developed by a research organization in Sweden, whereas JEPIX was developed in Japan based on Japanese data, and is therefore suitable for assessing the environmental influences within Japan.

The CO₂ conversion value for Fiscal 2004 using EPS for the environmental impact within the business areas decreased by 88,000 t-CO₂ due primarily to the decrease in the treated crude oil. Since the shipment of product also decreased, there was an overall decrease of 2,287,000 t-CO₂.

The Eco index point (index value using JEPIX) for within the business areas was 9,746 million points, a decrease of 247 million points as compared to the previous year.

Regardless of whether EPS is used or JEPIX is used, an improvement is indicated.

Environmental productivity calculates the production volume per integrated environmental impact per unit, and the larger this value, the more was produced with less environmental impact.

Environmental productivity = Production volume / integrated environmental impact

The environmental productivity for Fiscal 2004 improved from the previous year, and this is believed to be because the environmental impact of products decreased.

Integration of Environmental Impact

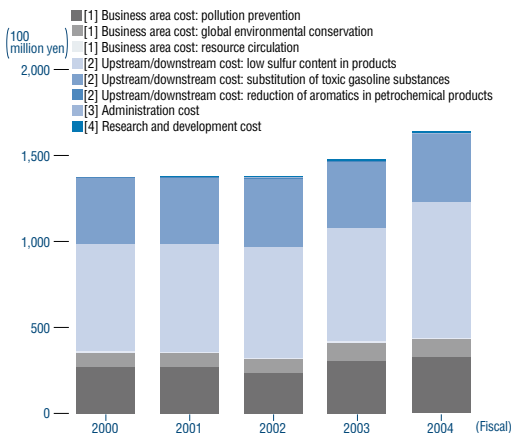
(Unit: million Eco index points)

JEPIX	Weighted Environmental Impact	
	Fiscal 2004	Reduction (compared to the previous year)
Business area		
Greenhouse gas	4,685	79
Ozone depleting substances	2	2
Toxic air pollutants	477	- 4
Optical oxidants	760	25
NOx	1,968	129
SPM10	468	158
COD to rivers	0	0
COD to sea areas	489	- 19
Nitrogen	728	- 130
Phosphorous	134	- 19
Landfill waste	35	26
Total for within the business areas	9,746	247

Environmental Productivity

JEPIX	Production Volume Per Integrated Environmental Impact	
	Fiscal 2004	Reduction (compared to the previous year)
Total for the business areas	0.00298	0.00003

Year-end Acquisition Costs



Integration of Environmental Impact (unit: 1,000 t-CO₂ conversion)

EPS	CO ₂ conversion	
	Fiscal 2004	Reduction (compared to the previous year)
Business areas		
SOx (index 30.3)	188	5
NOx (index 19.7)	61	4
Benzene (index 33.8)	0	0
COD (index 0.0095)	0	0
CO ₂ (index 1)	4,918	79
Total within business areas	5,167	88
Product		
Potential SOx (index 30.3)	5,043	481
CO ₂ at the time of product use (index 1)	73,452	1,708
Total product	78,495	2,200
Total business areas + products	83,662	2,287

Environmental Productivity (unit: kl/t-CO₂ conversion)

EPS	Integrated Environmental Impact Amount of Production per Unit	
	Fiscal 2004	Improvement (compared to the previous year)
Total within business areas	5.614	0.003
Product total	0.370	0.004
Total business areas + product	0.347	0.004

Definitions of Terms Used in Accounting

Methods of compiling environmental costs

- **Investments:** Capital investment for depreciable assets acquired for the purpose of environmental conservation
- **Expenditures:** Expenditures during the period associated with environmental activities (includes depreciation)

① Business Area Costs

Pollution Prevention

- Air pollution prevention costs (Sulfur recovery units, nitrogen oxide control units, etc.)
- Water pollution prevention costs (Wastewater treatment equipment, sour water treatment equipment, etc.)
- Soil contamination prevention costs (Soil contamination investigation costs etc.)
- Levies under the Law concerning pollution-related health damage compensation and other measures

Global Environmental Conservation

- Costs associated with establishment of energy conservation equipment such as cogeneration facilities

Resource Circulation

- Costs associated with waste treatment and recycling

Note: Following the integration of data compilation method among refineries, management activity cost for Fiscal 2003 has been modified from 13.313 million yen to 13.260 million yen.

④ Administration Costs

Costs associated with environmental education for company staffs, management and maintenance of the environment management system, plant maintenance and afforestation of offices and monitoring and assessment of environmental impact.

② Upstream/Downstream Costs

Green Purchasing

Costs associated with the provision of products with low environmental impact to customers.

Reducing Sulfur Content of Products

- Costs associated with reducing sulfur content in products to reduce sulfur oxide emitted when products are in use.

Replacement of Toxic Substances in Gasoline

- Costs associated with reduction and refinery of toxic substances in gasoline such as benzene and lead.

Reduction of Aromatic Substances of Petrochemical Products

- Costs associated with removal of aromatics and olefins from raw materials used in petrochemical products

Note: Following the integration of data compilation method among refineries, and review of proportional distribution coefficient of environmental cost of per-device, upstream/downstream costs for Fiscal 2003 has been modified from 32,134 million yen to 32,730 million yen. In addition, investment amount is modified from 1,520 million yen to 1,519 million yen, and accumulation acquisition amount is modified from 104,797 million yen to 106,312 million yen.

④ Research and Development Cost

Costs Associated with Environment R&D Activities.

⑤ Social Activity Cost

Costs Associated with Non-business Activities, such as Afforestation.

⑥ Environmental Remediation Cost

Soil Contamination Measures at Service Stations

Environmental Conservation Costs (reference)

Item	Fiscal 2004	Change*
Purchase cost of recycled paper (whole amount booked)	12	- 1
Environment related donations	31	- 3
Environmental report production cost	35	- 10

Unit: (million yen)

* Difference between Fiscal 2003 and 2004.

Environmental Accounting

Item	Environmental Conservation Cost (million yen)			
	Investment		Cost	
	Fiscal 2004	Change	Fiscal 2004	Change
[1] Business area costs				
Pollution prevention	344	-6,775	5,825	862
Global environmental conservation	137	-2,417	8,614	1,016
Resource circulation	20	1	668	-31
[2] Upstream/downstream costs				
Green purchasing	0	0	71	-6
Reducing environmental impact of products	14,250	12,731	39,081	6,428
Reducing sulfur content of products	(12,776)	(11,506)	(28,395)	(4,741)
Replacement of toxic substances in gasoline	(1,474)	(1,225)	(10,569)	(1,682)
Reduction of aromatics in petrochemical product	(0)	(0)	(117)	(5)
[3] Administration cost	2	-133	382	-115
[4] Research and development cost	133	79	1,088	28
[5] Social activity cost	0	0	1	0
[6] Environmental remediation cost	0	0	714	714
Total	14,886	3,486	56,444	8,896

Methods of compiling environmental benefits

• Amounts and benefits of reduction: Fiscal 2003 - 2004

① Benefits Corresponding to Worksite Costs

Concentration/Unit Values

- Environmental impact per crude oil equivalent throughput.

Environmental Impact

- Environmental impact originated from business area.

Note: Yokkaichi Kasumi Power Station and Cosmo Matsuyama Oil Co., Ltd. are excluded from concentration/unit values calculation, as crude-based processing volume estimation is impossible with these facilities where crude process is not carried out.

② Benefits Related to Upstream and Downstream Costs

Benefits through technological upgrading of refining process.

Concentration/Unit

- Low-sulfur products: sulfur contents in products
- Replacement of toxic substances in gasoline (low-benzene): benzene concentration in gasoline
- CO₂ emissions from product use: value obtained by dividing the environmental impact (see below) by petrochemical product volume

Environmental Impact

- Potential environmental impact expected to occur from product use at refineries
- Low-sulfur products: environmental impact value obtained by multiplying average sulfur content of products with production volume
- Replacement of hazardous substances in gasoline (low-benzene): value obtained by multiplying average benzene concentration of gasoline with production volume
- Reduction of aromatics in petrochemical products: volume of aromatics in petrochemical products eliminated in business area
- CO₂ emissions from product use: value obtained by multiplying per unit CO₂ emissions of each product with production volume

Notes:

- We do not take into account SO_x reduction obtained by desulfurization equipment during customers' use; therefore actual SO_x emissions of heavy fuel oils, etc. is lower than potential SO_x.
- As we select the optimum production method based on the relationship between cost and environmental conservation, the sulfur content value in each product is lower than JIS specification.
- Naphtha is used as petrochemical raw material and fertilizer raw material and does not emit SO_x or CO₂ directly; however it is included in the value.
- In relation to CO₂ emissions, we calculate the data by the method recommended by the Ministry of Environment's "Guidelines Concerning Methods of Calculation of Emissions of Greenhouse Gases by Businesses (draft)". Costs associated with non-business activities, such as afforestation.

Economic Benefits

(million yen)

	Category and Key Activity	Environmental Conservation Benefits			
		Investment		Cost	
		Change	Fiscal 2004	Change	Fiscal 2004
[1]	Benefits corresponding to worksite costs				
	Resources input into business activities				
	Energy input	0.02 (kl*crude/1,000kl)	9.23 (kl*crude/1,000kl)	384 (TJ)	72,908 (TJ)
	Water input	1 (kg/kl)	187 (kg/kl)	-793 (1,000t)	42,941 (1,000t)
	Benefits related to environmental impacts and wastes generated by business activities				
	Emission to air: CO ₂	0.33 (kg CO ₂ /kl)	24.14 (kg CO ₂ /kl)	79 (1,000t - CO ₂)	4,918 (1,000t - CO ₂)
	SO _x	0.5 (g/kl)	26.1 (g/kl)	152 (t)	6,192 (t)
	NO _x	1.0 (g/kl)	14.5 (g/kl)	189 (t)	3,103 (t)
	Benzene	0.00 (g/kl)	0.03 (g/kl)	-0.34 (t)	10.36 (t)
	Emission to water: COD	-0.03 (g/kl)	0.76 (g/kl)	-5.9 (t)	152.2 (t)
	Industrial waste: Generated	-30 (g/kl)	234 (g/kl)	-7,348 (t)	50,584 (t)
	Recycled	-16 (g/kl)	71 (g/kl)	-4,868 (t)	18,767 (t)
	Landfill	2 (g/kl)	3 (g/kl)	462 (t)	607 (t)
[2]	Benefits related to upstream and downstream costs				
Benefits related to goods and services produced by business activities	Reducing sulfur content of products	(sulfur: mass %)	(sulfur: mass %)	(potential SO _x emissions: t)	(potential SO _x emissions: t)
	High octane gasoline	0.0001	0.0004	0	8
	Regular gasoline	0.0010	0.0021	68	177
	Naphtha	0.0069	0.0275	-49	929
	Jet fuel oil	-0.0083	0.0190	-181	489
	Kerosene	0.0008	0.0013	50	69
	Diesel fuel	0.0011	0.0019	100	156
	Heavy fuel oil A	0.0146	0.4172	1,072	27,106
	Heavy fuel oil C	-0.0574	1.6017	14,826	137,495
	LPG	-0.0001	0.0005	-2	6
	Total	0.0279	0.3603	15,884	166,435
	Low-benzene gasoline	-0.0162 (vol %)	0.5131 (vol %)	-2,136	31,612 (t)
	Reduction of aromatics in petrochemical products			-1,983	6,873 (kl)
	Reduction of CO ₂ emission from products in use	0.0172 (t-CO ₂ /kl)	2.5323 (t-CO ₂ /kl)	1,718 (1,000t - CO ₂)	73,452 (1,000t - CO ₂)

Detail of Benefit	Amount
Energy conservation	2,623
Catalyst recycling	186
Gypsum sales	128
Ammonia recycling	138
R&D	12
Electricity conservation	4
Total	3,091

Methods of compiling economic benefits

- Conservations by cogeneration = Conservations by steam generation + conservations in electricity
- fuel costs (LPG, heavy fuel oil, etc.)
- Purchase cost of new catalysts saved by recycled catalysts in oil refining, plus disposal costs of waste catalysts.
- Sales proceeds of gypsum, a by-product of fuel-gas desulfurization at Yokkaichi Kasumi Power Station.
- Purchase price of ammonia saved by recycled ammonia at Yokkaichi Kasumi Power Station plus disposal costs of waste alkali.
- Income received for royalty, and cost conservations realized through R&D activities.
- Conservations, in year-on-year change, at the head office and other facilities.

Personnel Related Data (Fiscal 2004 end)

1. Basic Data

Number of Company Staffs

		Men	Women	Total
Cosmo Oil	Union	1,238	171	1,409
	Management	314	1	315
	Other *1	4	1	5
	Subtotal	1,556	173	1,729
Affiliate Companies	Union	1,193	118	1,311
	Management	425	1	426
	Other *1	14	0	14
	Subtotal	1,632	119	1,751
Total		3,188	292	3,480

Years of Service

	Years of Service
Men	22 years 4 months
Women	18 years 3 months
Average	21 years 11 months

Data is as of March 31 2005.

*1: Other refers to the number of dispatched company staffs received

2. Human Rights

Human Rights Seminar

Program	Theme	Participants	Training Hours
New Company Staffs	General fundamental knowledge regarding human rights	38	1
Training for Company Staffs newly promoted to the 3rd Rank	General human rights	22	1
Training for Company Staffs newly promoted to Management Level	Antidiscrimination issues, power harassment	45	1
Training for Company Staffs newly promoted to Line Chief	General human rights, power harassment	23	1
Promotion Committee Members	General human rights	11	13.5
Business Site Training	Sexual harassment *1, power harassment	1,119	1

Corporate Ethics (Compliance) Seminar

Program	Theme	Participants	Training Hours
New Company Staffs	*2	38	1
Training for Company Staffs newly promoted to Management Level	*2 + general laws and restrictions	45	1
Training for Company Staffs newly promoted to Line Chief	*2 + claim measures	23	1
Business Site Training	Handling of personal information	1,119	1

*2: Management vision + corporate activity guideline + protection of personal information

*1: For Cosmo Oil business sites, power harassment; for affiliated companies, sexual harassment

3. Respect for Diversity, Equal Opportunity, etc.

Cosmo Survey (Company Staffs, Survey of Awareness and Satisfaction)

- Implementation period: December 2004
- Object persons: All company staffs with a PC environment (Including transferred and dispatched personnel)
- Number of valid responses: 2,732 people (men: 2,376, women: 356)
- Number of questions: 50
- Question items:
 - About the amount and quality of work, and the degree of satisfaction attained from achievements
 - About the work environment
 - About their future vision and future career
 - About self assessments and setting of goals (evaluations)
 - About interviews held with superiors
 - About the degree of understanding regarding various policies
 - About sexual harassment and power harassment
 - Other

Example Questions and Answers

A	Close to A	Cannot say One Way or the Other	Close to B	B
Acquisition of Knowledge and Ability related to Work should be done by the Individual Voluntarily	42.0%	21.2%	36.8%	Opportunities to acquire Knowledge and Ability related to Work should be offered by the Company
People who work overtime work more	17.9%	49.7%	32.4%	Those who finish Work at the End of the Business Day are more capable
Work should be enjoyable	75.3%	16.2%	8.6%	Work should obviously be a Hardship
Would like to work commensurate with Ability	45.4%	25.2%	29.4%	Would like to work beyond Ability

Employment of the Disabled

(Numbers filed with the Ministry of Health and Welfare and Labor in June 2005)

Number of Employed Disabled Persons	42
(Of which, severely Disabled Persons)	19
Employment Percentage of Disabled Persons	1.8 %
Number below the Legal Number	0

4. Training and Development

Tiered Educational Seminars *1

*1: Includes the CSR education program.

Training for Management Personnel

Program	Training Hours	Participants
Training for Company Staffs newly promoted to Line Chief	20.5	23
Training for Company Staffs newly promoted to Management Level	4.5	47
Total		70
Total Number of Management Personnel		771

Self-education

Correspondence Courses

Number of company staffs receiving correspondence courses	Fiscal 2002	Fiscal 2003	Fiscal 2004
Number of students	214	154	151

In-house Staff Recruitment (Implementation date: March 2005)

Number of Recruited company Staffs	13 departments (including affiliated companies)	17
Number of Applicants	7 departments	8
Number of officially Employed	5 departments	5

Training for Union Workers (main career track personnel)

Program	Training Hours	Participants
Training for Mid-career Company Staffs	34	58
Training for Company Staffs newly promoted to the 3rd Level	49	20
Training for New Company Staffs	352.5	37
Total		115
Total Number of Union Workers		542

Company Staffs acquiring Qualifications *2

Number of Company Staffs receiving Correspondence Courses	Cosmo Oil	Affiliate Companies	Total
Hazardous Materials Officer (Class A&B)	1,370	1,396	2,766
Boiler Operator (special, 1st & 2nd grade)	1,027	660	1,687
High-pressure Gas Production Safety Manager (Class A & B)	966	825	1,791
Pollution Control Manager (air, water, noise, etc.)	176	193	369
Qualified for Energy Management (electricity, heat)	116	104	220

*2: The number of company staffs acquiring qualifications is the total number of company staffs who acquired qualifications (example: a company staff who acquired qualifications to be an qualified for electricity and heat shall count as 2 people)

5. Company Staff Benefits

Assistance for Work/Life Balance

	Company Staffs qualified to take Child-care Leave	Company Staffs attending the Reinstatement Support Tool
Women	6 (12)	7
Men	0	0

Note: The number of company staffs that qualified to take child-care leave is the number of people who applied for leave of absence in Fiscal 2004. The number inside of () is the number of people who qualified for leave of absence within Fiscal 2004.
 Reinstatement support tool (introduction of *wiiw* from Shiseido Co., Ltd.)
 • Business skills improvement course (PC, Word, Excel, TOEIC, etc.)
 • Lifestyle skills improvement course (cooking, organization, fitness, etc.)
 • Communication skills course (bulletin board, information exchange with superiors, etc.)

Number of Paid Holidays per Year (when joining the Company in April)

Years of Service	0	1	2	3
Cosmo Oil	15 days	17 days	19 days	21 days
Labor Law	6 months: 10 days - 6 years 6 months: 20 days			

Note: A different cumulative paid leave policy exists which can be obtained for sickness, etc.

Labor Hours (Average for Union Workers: for the Year)

Designated Labor Hours	1,820 hours
Overtime Labor Hours	214 hours
Total Labor Hours	1,921 hours

6. Employment Guarantee/Job Creation

Pre-retirement Seminar

Training	Subject Number of Company Staffs	Participants	Participation Rate
1st Time	40	38	95%
2nd Time	33	31	94%
Total	73	69	95%
Training hours: 13.5 hours/person			

Second Career Seminar

Training	Subject Number of Company Staffs	Participants	Participation Rate
1st Time	40	21	53%
2nd Time	33	9	27%
Total	73	30	41%
Training hours: 10.5 hours/person			

Life Planning Seminar (Management)

Training Location	Subject Number of Company Staffs	Participants	Participation Rate
Shonan Seminar House	47	29	62%
Shonan Seminar House	47	32	68%
Shonan Seminar House	47	30	64%
Total	141	91	65%
Training hours: 14 hours/person			

Life Planning Seminar (Union Workers)

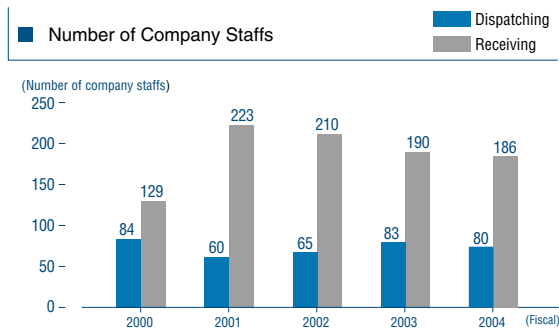
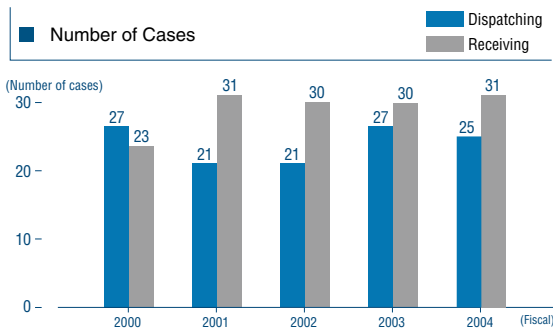
Training Location	Subject Number of Company Staffs	Participants	Participation Rate
Chiba	29	16	55%
Chiba	29	17	59%
Yokkaichi	51	19	37%
Sakai	27	18	67%
Sakai	27	15	56%
Sakaide	22	12	55%
Matsuyama	26	19	73%
Shonan Seminar House	38	9	24%
Total	249	125	50%
Training hours: 13.2 hours/person			

7. Management and Labor

1. Management meeting (1 time): Information exchange
2. Capital and labor meeting (5 times):
Spring labor offensive, workplace improvement
3. Appropriate management of appropriate labor hours committee (12 times):
Promotion of shorter hours

Overseas Cooperation: Status of Technical Support by Experts

Receiving/Dispatching Trainees



Countries: UAE, Qatar, Iran, Oman, Yemen, Saudi Arabia, Kuwait, Bahrain, Pakistan, Thailand, Indonesia, Vietnam, China, Mexico, Kazakhstan

Safety Data

Number of Accidents

	2003	2004
Accidents which resulted in Lost-time Injuries (Number of cases)	0	1
Accidents which did not result in Lost-time Injuries (Number of cases)	1	2
Frequency Rate of Accident *1	0	0.47

*1 Frequency rate: Number of accidents which resulted in lost-time injuries per 1 million total working hours.

No Accident Hours Recorded

Name of Refinery	Total Hours (1,000 hours)
Chiba Refinery	16,420
Yokkaichi Refinery	7,474
Sakai Refinery	1,515
Sakaide Refinery	299

As of December 2004

Chiba Refinery (as of March 31, 2005)

Address	2 Goi Kaigan, Ichihara, Chiba
Start-up	February 1963
Total area	1,199,619 m ²
Company Staffs	346
Capacity	240,000 barrels/day
ISO 9001	December 25, 1996
ISO 14001	March 13, 1998



■ About the Chiba Refinery

As the core factory of the Chiba Petroleum Chemical Alliance in the Keiyo coastal industrial belt, the Chiba Refinery is the provider of raw materials to the neighboring petrochemical factories, covers all of Eastern Japan as the largest supply base of petroleum products for Cosmo Oil, and as of recent, has begun to put a lot of effort into overseas product exports.

- **Environmental activities:** Striving to become an environmentally advanced refinery, the Chiba Refinery has outlined 3 challenges in lines with the Environmental Medium-term Plan. With a focus on producing and supplying sulfur free fuel, conserving energy, and reducing the landfill amount of industrial waste, it is operating and utilizing an environmental management system to actively pursue continuous improvements.
- **Safety activities:** The Chiba Refinery's vision is to secure safety for the regional community, symbiosis with society, and to contribute to society. Striving to be a "refinery that is trusted and relied upon by the community", all of the Chiba Refinery's business activities give top priority to safety with all of its company staffs and cooperating companies aiming to secure safety.
- **Activities for the regional community:** With "symbiosis with the regional society" being a main pillar, the Chiba Refinery sponsors the "Choen Cup Children's Baseball Tournament" and the "Goi Coastal Festival" which is the largest festival in Ichihara City. In addition, utilizing the "Eco" Card fund, it started the "Satoyama Preservation Education" program for local elementary school children, and encourages exchanges through a variety of other activities.



Takashi Yashima
Director
Chiba Refinery

■ Environmental Activities

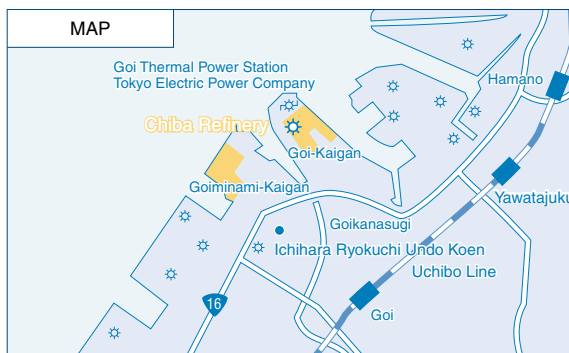
- **Energy conservation**
Introduction of the "plate type heat exchanger", "the motor inverter control (HDRIVE method)", etc.
- **Environment equipment**
Introduced the "gasoline desulfurization units (sulfur free gasoline supply)", etc.

■ Health and Safety Activities

- **Accomplishment of major maintenance programs and introduction of large equipment (gasoline desulfurization units)**
Carried out operations without a single accident or disaster by thoroughly implementing operational management, construction quality management, and site education for both the production and safety divisions.
- **Preventative measures**
Established "my areas" for each and every company staff
- **Results**
Has maintained first place in the industry for the no accident record (16,420,000 hours) and site education for both the production and safety divisions.

■ Regional Communication Activities

- Overall management of the "Goi coastal festival" and submission of refreshment booths, and participation in new years and summer festival activities
- Holding of exchange meetings with the local fire department
- Holding of exchange meetings with the town councilmen
- Support for sport tournaments, providing of grounds for carrying out local events, and cooperation by providing bus services
- Cleaning of local roads (9 times a year)
- Implementation of the "Satoyama Preservation Education" program using the "Eco" Card fund, etc.



■ Number of Staff holding Environmental Qualifications

Air pollution control manager	14
Water pollution control manager	20
Noise pollution control manager	4
Dioxin pollution control manager	2
Hazardous materials officer (Class A & B)	560
High-pressure gas production safety manager (Class A & B)	246
Qualified person for heat management	15
Qualified person for electricity management	5
Specially controlled industrial waste manager	2
Engineering manager for disposal facilities of industrial waste	2
Boiler operator (Special grade)	4
Boiler operator (1st & 2nd grade)	310

Number of visitors to the Refinery in Fiscal 2004	58 visits 785 people
No accident record (as of December 2004)	16,420,000 hours
PCB custody status	High voltage condensers 62 units High voltage transformers 17 units Others

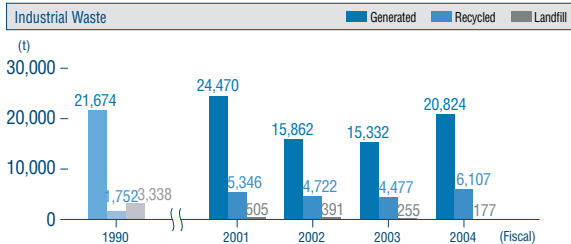
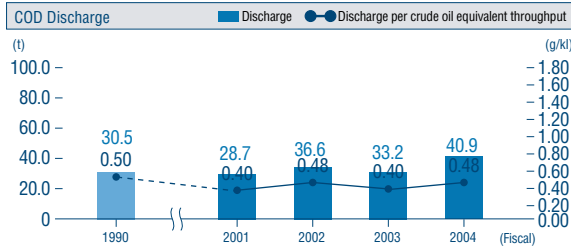
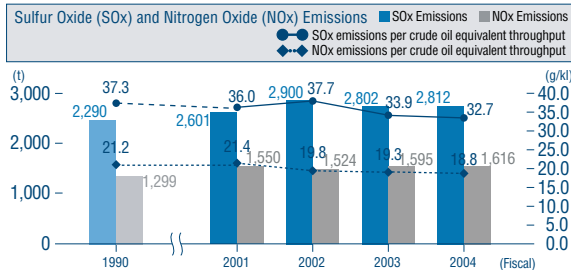
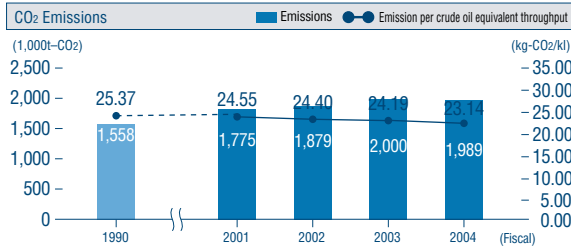
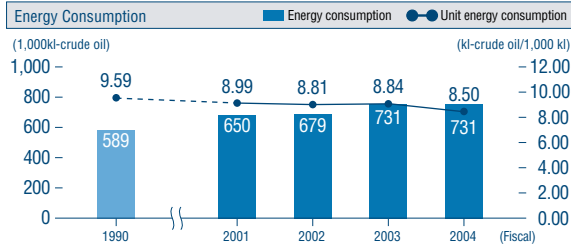
Regulated Pollutants

Air pollutants	Pollutant	Standard	Actual Performance in Fiscal 2004	
			Maximum	Average
	NOx (m ³ N/hour; total pollutant load control)	141.1	127.7	100.1
	SOx (m ³ N/hour; total pollutant load control)	189.7	152.9	104.9
	Particulate (boiler; g/m ³ N)	0.07	0.046	0.021

Water pollutants	Pollutant	Standard	Actual Performance in Fiscal 2004	
			Maximum	Average
	COD (kg/day; total pollutant load control)	223	217.7	112.2
	COD (mg/L)	25	7.1	5.5
	SS (mg/L)	50	12.8	7.4
	Oil Content (mg/L)	3	0.7	0.6
	Nitrogen (kg/day; total pollutant load control)	222	209.4	92.3
	Nitrogen (mg/L)	(10)	1.8	1.7
	Phosphorus (kg/day; total pollutant load control)	12.5	7.1	2.4
	Phosphorus (mg/L)	(1)	0.11	0.08
	Phenols (mg/L)	0.5	Below measurement threshold	

Values in () are daily average.

Environmental Performance (energy, etc.)



Environmental Performance (PRTR)

PRTR listed substances		Releases				Transfers
		Air	Water	Soil	Total	
Ethyl benzene	kg/year	260	0	0	260	0
Xylene	kg/year	1,000	0	0	1,000	0
Cobalt and its compounds	kg/year	0	0	0	0	9,300
1,3,5-trimethylbenzene	kg/year	0.3	0	0	0.3	0
Toluene	kg/year	5,100	0	0	5,100	0
Nickel compounds	kg/year	0	0	0	0	78,000
Benzene	kg/year	690	0	0	690	0
Molybdenum and its compounds	kg/year	0	0	0	0	140,000
Dioxins	mg-TEQ/year	0.77	20	0	20.77	0.32

* In addition to above, we treat 2-aminoethanol, cresol, cyclohexylamine, tetrachloroethylene, nonyl-phenol and hydrazine over 1,000 kg per year, the release and transfer volume are 0 kg per year for all substances.

Environmental Accounting

Category and Key Activity	Fiscal 2004	
	Investment	Cost
1. Business area: Pollution prevention	90	1,411
Global environmental conservation	1	3,229
Resource circulation	5	282
2. Upstream/downstream: Green purchasing	0	0
Reduction of environmental impact of products	5,002	18,509
Sulfur reduction of products	(3,997)	(15,543)
Substitution of toxic substances in gasoline	(1,005)	(2,965)
3. Administration	0	127
4. Research and development	0	0
5. Social activity	0	1
Total	5,098	23,559

Purchasing recycled paper: 1 million yen

Details of Benefit	Fiscal 2004
Energy conservation (cogeneration)	579
Catalyst recycling	33
Total	612

Item	Fiscal 2004	
	Reduction (year-on-year)	
	Concentrations/unit value	Impact
1. Benefits corresponding to worksite costs		
Resources input into business activities		
Energy input	0.34 (kl-crude/1,000kl)	-8 (TJ)
Water input	7(kg/kl)	138 (1000t)
Related to environmental impacts and wastes		
Emissions to air:		
CO2	1.05 (kg-CO2/kl)	11 (1000t-CO2)
SOx	1.2 (g/kl)	- 10 (t)
NOx	0.5 (g/kl)	- 21 (t)
Benzene	0.00 (g/kl)	0.07 (t)
Emissions to water:		
COD	- 0.08 (g/kl)	- 7.7 (t)
Industrial waste :		
Generated	- 57 (g/kl)	- 5,492 (t)
Recycled	- 17 (g/kl)	- 1,630 (t)
Landfill	1 (g/kl)	78 (t)
2. Benefits related to upstream and downstream costs		
Related to goods and services		
Reducing sulfur content of products	(sulfur content: mass %)	(potential SOx: t)
High octane gasoline	0.0000	1
Regular gasoline	0.0002	0
Naphtha	0.0017	- 20
Jet fuel oil	- 0.0017	- 38
Kerosene	0.0011	24
Diesel fuel	0.0011	44
Heavy fuel oil A	0.0369	673
Heavy fuel oil C	0.0119	6,834
LPG	0.0000	0
Total	0.0354	7,518
Reducing benzene in gasoline	- 0.0036 (volume %)	- 459 (t)
CO2 emissions from product use	0.0226 (t-CO2/kl)	639 (1,000t-CO2)

Yokkaichi Refinery (as of March 31, 2005)

Address	1-1 Daikyo-cho, Yokkaichi, Mie
Start-up	July 1943
Total area	1,188,075 m ²
Company Staffs	314
Capacity	155,000 barrels / day
ISO 9001	February 18, 1997
ISO 14001	March 20, 1998



■ About the Yokkaichi Refinery

Located in the center of the Chukyo Industrial Belt, and as an important base for supplying energy across the Chubu, Hokuriku, and Kinki regions, and furthermore, with as the producer of Cosmo Oil's sole lubricant and with its recent expansion into the IPP business, the Yokkaichi Refinery has become an integrated energy company.

- **Environmental activities:** The Yokkaichi Refinery engages seriously in various environmental issues, the largest one being climate change, and to that end, it aims for continuous improvements which outside parties can understand and consent to, which is the spirit of ISO14001. Specifically, it promotes energy conservation and recycling of industrial waste, as well as thoroughly implements and improves the environmental monitoring system for water and air quality.
- **Safety activities:** As a refinery and also from the perspective of corporate social responsibility, safe operation is of the utmost importance to the Yokkaichi Refinery. In order to maintain and improve safe operations, the Yokkaichi Refinery ensures smooth operation of the safety management system, makes appropriate equipment improvements, and implements upgrades in safety technology as well as nurturing of company staffs sensitive to safety issues, thereby encouraging self-awareness towards safety among all of its company staffs.
- **Activities for the regional community:** Starting with the monthly volunteer cleanup program, the Yokkaichi Refinery holds the "Junior Soccer School" and the "Softball tournament for regional fighter moms" which targets the local neighborhood community association, among other programs, so as to establish communication with the local community, and to make efforts to become a trusted and reliable refinery that can coexist with the larger society.



Seizo Suga
Director
Yokkaichi Refinery

■ Environmental Activities

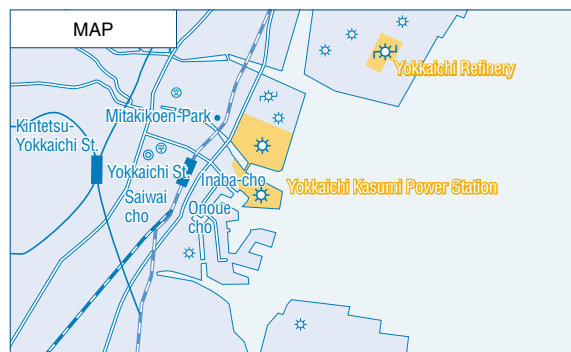
- **Energy conservation**
Introduction of the "energy conserving steam trap", "the motor inverter control (HDRIVE method)", etc.
- **Environment equipment**
Introduced the "gasoline desulfurization units (sulfur free gasoline supply)", etc.

■ Health and Safety Activities

- **Accomplishment of major maintenance programs and introduction of large equipment (gasoline desulfurization units)**
Carried out operations without a single accident or disaster by thoroughly implementing operational management, construction quality management, and site education for both the production and safety divisions.
- **Preventative measures**
Advance accident prevention program using the "close call memo" system; on-the-job training at the Mie Fire Academy as part of the safety reinforcement program (87 people)

■ Regional Communication Activities

- Kyohoku region accident prevention liaison meeting
- Harbor region regular maintenance explanatory meeting
- Meeting for the exchange of opinions between the fishery cooperative and Cosmo Oil (5th meeting, concerning the regular maintenance and environmental activities)
- Liaison meetings between the Yokkaichi manufacturing complex, the Kasumi manufacturing company, and other corporations
- Participation in the local soft volley ball tournament and Grand Golf tournament, etc.



■ Number of Staff holding Environmental Qualifications

Air pollution control manager	18
Water pollution control manager	16
Noise pollution control manager	4
Vibration pollution control manager	3
Dioxin pollution control manager	3
Hazardous materials officer (Class A & B)	441
High-pressure gas production safety manager (Class A & B)	281
Qualified person for heat management	22
Qualified person for electricity management	4
Specially controlled industrial waste manager	6
Engineering manager for disposal facilities of industrial waste	7
Boiler operator (Special grade)	9
Boiler operator (1st & 2nd grade)	248

Number of visitors to the Refinery in Fiscal 2004	33 visits 409 people
No accident record (as of December 2004)	7,474,000 hours
PCB custody status	High voltage condensers 59 units Others

Regulated Pollutants

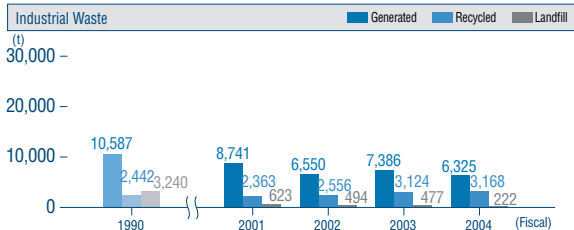
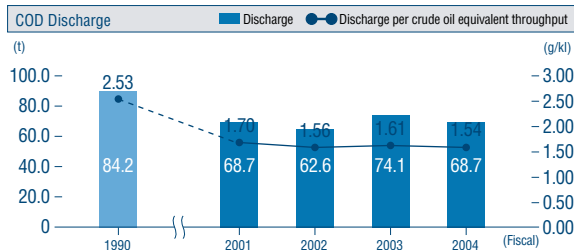
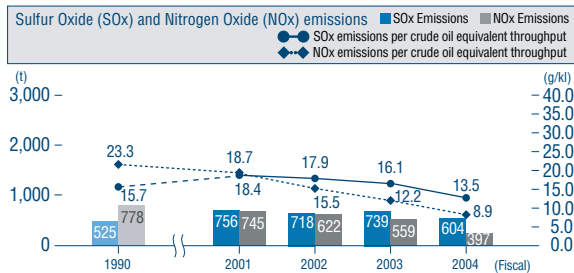
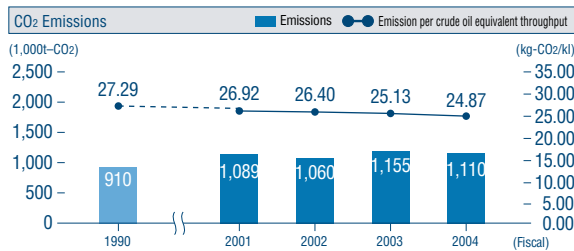
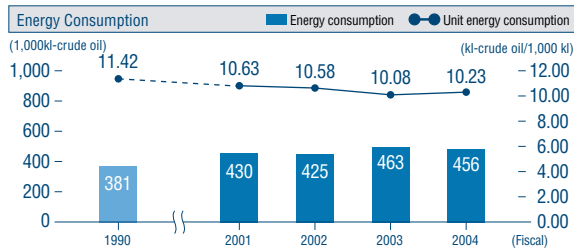
Data includes Yokkaichi Kasumi Power Station

Air pollutants	Pollutant	Standard	Actual Performance in Fiscal 2004	
			Maximum	Average
	NOx (m ³ N/hour; total pollutant load control)	80.8	56.1	26.2
	SOx (m ³ N/hour; total pollutant load control)	109.48	56.0	25.8
	Particulate (boiler; g/m ³ N)	0.049	0.040	0.014

Water pollutants	Pollutant	Standard	Actual Performance in Fiscal 2004	
			Maximum	Average
	COD (kg/day; total pollutant load control)	535.0	380.0	190.1
	COD (mg/L)	160 (120)	8.1	4.8
	SS (mg/L)	200 (150)	8	4
	Oil Content (mg/L)	1	Below measurement threshold	
	Nitrogen (kg/day; total pollutant load control)	697.0	435.76	92.22
	Nitrogen (mg/L)	15	1.8	Below measurement threshold
	Phosphorus (kg/day; total pollutant load control)	80.47	16.35	1.13
	Phosphorus (mg/L)	1.5	0.08	0.05
	Phenols (mg/L)	1	Below measurement threshold	

Values in () are daily average.

Environmental Performance (energy, etc.)



Environmental Performance (PRTR)

Data includes Yokkaichi Kasumi Power Station

PRTR listed substances	Releases	Releases			Transfers
		Air	Water	Soil	
Ethyl benzene	kg/year	380	0	0	360
Xylene	kg/year	1,500	0	0	1,500
1,3,5-trimethylbenzene	kg/year	0.3	0	0	1.3
Toluene	kg/year	4,600	0	0	4,600
Nickel compounds	kg/year	0	0	0	14,000
Benzene	kg/year	1,500	0	0	1,500

* In addition to above, we treat 2-aminoethanol, cobalt and its compound, molybdenum and its compound, 1,2-dichloroethane, 1,2-dichloropropane and hydrazine over 1,000 kg per year, the release and transfer volume are 0 kg per year on the all substances.

Kasumi PS Environmental Performance

Air pollutants	Substance	Emissions	Industrial waste	
			Generated (t/year)	Recycled (t/year)
	NOx (t/year)	73	4,181	4,181
	SOx (t/year)	40		0
	SOx (t/year)	40	Sent to landfill (t/year)	0

Water pollutants	Substance	Emissions	Energy consumption	
			10,000kl-crude oil/year	Carbon dioxide emissions
	COD (t/year)	0.3	10,000kl-crude oil/year	30,000t-CO2/year

Environmental Accounting

Data includes Yokkaichi Kasumi Power Station

Category and Key Activity	Fiscal 2004	
	Investment	Cost
1. Business area: Pollution prevention	159	2,889
Global environmental conservation	128	3,089
Resource circulation	15	222
2. Upstream/downstream: Green purchasing	0	0
Reduction of environmental impact of products	5,262	5,520
Sulfur reduction of products	(5,124)	(3,513)
Substitution of toxic substances in gasoline	(138)	(2,007)
3. Administration	0	118
4. Research and development	0	0
5. Social activity	0	0
Total	5,564	11,838

Purchasing recycled paper: 1 million yen

Economic benefit (million yen)	Fiscal 2004	
	Investment	Cost
Energy conservation (cogeneration)		1,483
Gypsum sales		128
Ammonia recycling		138
Catalyst recycling		1
Total		1,750

Data includes Yokkaichi Kasumi Power Station

Environmental conservation benefits

Item	Fiscal 2004	
	Concentrations/unit value	Impact
1. Benefits corresponding to worksite costs		
Reduced resources input into business activities		
Energy input	- 0.15 (kl-crude/1,000kl)	143 (TJ)
Water input	- 8 (kg/kl)	- 890 (1000t)
Reduced emissions and waste generation		
Emissions to air:		
CO2	0.26 (kg-CO2/kl)	35 (1000t-CO2)
SOx	2.6 (g/kl)	172 (t)
NOx	3.3 (g/kl)	156 (t)
Benzene	0.00 (g/kl)	0.00 (t)
Emissions to water:		
COD	0.07 (g/kl)	5.4 (t)
Industrial waste:		
Generation	19 (g/kl)	- 197 (t)
Recycled	- 3 (g/kl)	- 1,302 (t)
Landfill	5 (g/kl)	255 (t)
2. Benefits related to upstream and downstream costs		
Related to goods and services		
Reducing sulfur content of products (sulfur content: mass %)		(potential SOx: t)
High octane gasoline	0.0000	0
Regular gasoline	0.0017	37
Naphtha	0.0013	- 41
Jet fuel oil	0.0006	0
Kerosene	0.0006	13
Diesel fuel	0.0010	18
Heavy fuel oil A	0.0206	651
Heavy fuel oil C	0.0751	5,926
LPG	- 0.0002	- 1
Total	0.0459	6,604
Reducing benzene in gasoline (0.0151 (volume %))		491 (t)
CO2 emissions from product use (- 0.0085 (t-CO2/kl))		443 (1,000t-CO2)

Sakai Refinery (as of March 31, 2005)

Address	3-16 Chikkoshin-machi, Sakai, Osaka
Start-up	October 1968
Total area	1,254,603 m ²
Company Staffs	187
Capacity	80,000 barrels/day
ISO 9001	March 14 1997
ISO 14001	March 20, 1998



■ About the Sakai Refinery

The Sakai Refinery, located in the Sakai/ Senboku Coastal Industrial Belt, produces such petroleum products as LPG, gasoline, naphtha, kerosene, jet fuel, diesel fuel, heavy fuel oil, and asphalt, and provides these products to customers mainly in the 4 prefectures that comprise the Kinki region. With the Keihanshin region being a major consumption region which the Sakai Refinery serves, this refinery is characterized by its positioning as a refinery with a high percentage of land deliveries, and as a jet fuel oil supply base to the Kansai International Airport.

- **Environmental activities:** Striving to become an environmentally advanced refinery, the Sakai Refinery strives to, of course, supply products that are environmentally friendly such as sulfur free automobile fuels, but it also strives to minimize NO_x and SO_x emissions by using environmentally friendly fuels within the site (exclusive use of gas), to actively reduce waste by promoting the 3Rs, to control CO₂ emission by reinforcing energy conservation measures, and engaging in other measures that help to reduce the environmental impact of the refinery's business activities. In addition, the Sakai Refinery actively promotes nurturing of environmental awareness among its company staffs by promoting, for example, the green office program.
- **Safety activities:** Maintenance and development of safe and stable operations is one of the most important goals of the Sakai Refinery. By operating the safety management system that reflects all of the knowledge and safety management structures of the entire company, this refinery constantly incorporates advances in safety management, and as a safety precaution, it also reinforces and conducts training of preventative strategies for a variety of possible accidents and disasters.
- **Activities for the regional community:** Through such activities as the monthly cleaning of local roads, providing of grounds to the local children's baseball team, and holding of the tennis school for local residents (twice yearly), the Sakai Refinery engages in exchanges with the local residents and contributes back to the community it serves, elementary school children, and encourages exchanges through a variety of other activities.



Hajime Marukawa
Director
Sakai Refinery

■ Environmental Activities

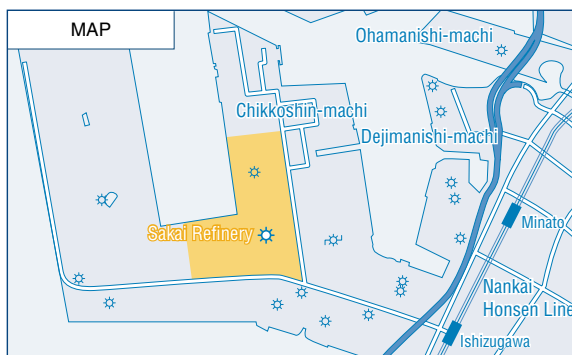
- **Energy conservation**
Conservation of energy through the installment of such equipment as the "high pressure steam trap exhaust heat recovery equipment", and "improvement of the steam pipe work for optimizing the use of steam", etc.
- **Environment equipment**
Introduced the "gasoline desulfurization units (sulfur free gasoline supply)", etc.

■ Health and Safety Activities

- **Accomplishment of major maintenance programs and introduction of large equipment (gasoline desulfurization units)**
Carried out operations without a single accident or disaster by thoroughly implementing operational management, construction quality management, and site education for both the production and safety divisions.
- **Preventative measures**
Implemented "Director and dupty-director safety meetings" (a meeting for the exchange of opinions between the operators and the director/dupty-director), etc.

■ Regional Communication Activities

- **Cleaning of areas outside of the business premises (twice annually, participation by approximately 150 people), volunteer cleanup activities (10 times annually, participation by approximately 30 - 40 people each time)**
- **Participation in the local town council sponsored summer festival and the Iwatsuta Shrine's Yassai Hossai festival**
- **Holding of the tennis school (twice annually), etc.**



■ Number of Staff holding Environmental Qualifications

Air pollution control manager	17
Water pollution control manager	13
Noise pollution control manager	2
Vibration pollution control manager	1
Hazardous materials officer (Class A & B)	265
High-pressure gas production safety manager (Class A & B)	166
Qualified person for heat management	14
Qualified person for electricity management	3
Specially controlled industrial waste manager	2
Environmental certified measurer	2
Boiler operator (Special grade)	3
Boiler operator (1st & 2nd grade)	189

Number of visitors to the Refinery in Fiscal 2004	15 visits 171 people
No accident record (as of December 2004)	1,515,000 hours
PCB custody status	High voltage condensers 15 units Others 0 units

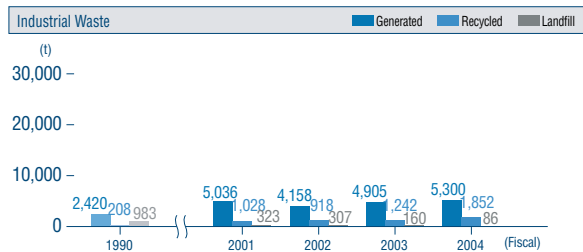
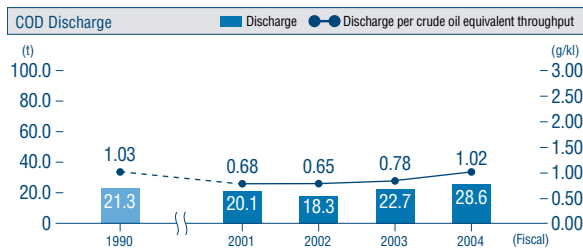
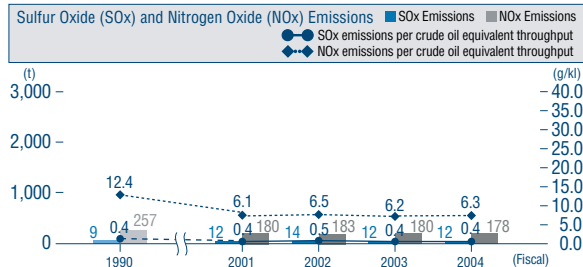
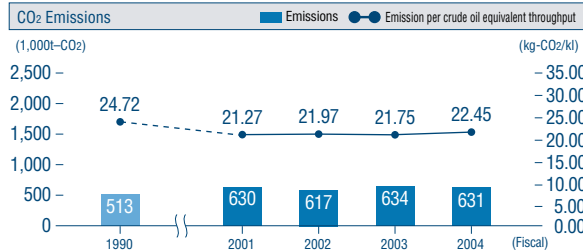
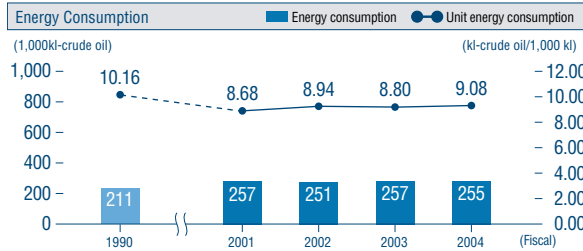
Regulated Pollutants

Air pollutants	Pollutant	Standard	Actual Performance in Fiscal 2004	
			Maximum	Average
	NOx (m ³ N/hour; total pollutant load control)	50.028	16.00	9.97
	SOx (m ³ N/hour; total pollutant load control)	48.011	16.24	0.5
	Particulate (CG/EB; g/m ³)	0.03	Below measurement threshold	

Water pollutants	Pollutant	Standard	Actual Performance in Fiscal 2004	
			Maximum	Average
	COD (kg/day; total pollutant load control)	186.8	128.49	78.46
	COD (mg/L)	15 (10)	9.8	8.3
	SS (mg/L)	40 (30)	Below measurement threshold	
	Oil Content (mg/L)	2	Below measurement threshold	
	Nitrogen (kg/day; total pollutant load control)	206.02	99.18	36.06
	Nitrogen (mg/L)	35	4.0	3.0
	Phosphorus (kg/day; total pollutant load control)	24.87	2.383	0.659
	Phosphorus (mg/L)	1.5	0.635	0.190
	Phenols (mg/L)	2	Below measurement threshold	

Values in () are daily average.

Environmental Performance (energy, etc.)



Environmental Performance (PRTR)

PRTR listed substances	Releases	Releases				Transfers
		Air	Water	Soil	Total	
Ethyl benzene	kg/year	130	0	0	130	0
Xylene	kg/year	630	0	0	630	0
Cobalt and its compounds	kg/year	0	0	0	0	360
1,3,5-trimethylbenzene	kg/year	0.3	0	0	0.3	0
Toluene	kg/year	1,700	0	0	1,700	0
Nickel compounds	kg/year	0	0	0	0	1,200
Benzene	kg/year	670	0	0	670	0
Molybdenum and its compounds	kg/year	0	0	0	0	2,000
Zinc compounds (water soluble)	kg/year	0	1,200	0	1,200	0

* In addition to above, we treat 2-aminoethanol over 1 thousand kg per year, the release and transfer volume are 0 kg per year.

Environmental Accounting

Category and Key Activity	Fiscal 2004	
	Investment	Cost
1. Business area: Pollution prevention	44	713
Global environmental conservation	8	2,296
Resource circulation	0	109
2. Upstream/downstream: Green purchasing	0	0
Reduction of environmental impact of products	3,760	6,131
Sulfur reduction of products	(3,446)	(3,469)
Substitution of toxic substances in gasoline	(314)	(2,662)
3. Administration	2	61
4. Research and development	0	0
5. Social activity	0	0
Total	3,814	9,310

Purchasing recycled paper: 1 million yen

Economic benefit (million yen)

Details of Benefit	Fiscal 2004
Energy conservation (cogeneration)	561
Total	561

Environmental conservation benefits

Item	Fiscal 2004	
	Reduction (year-on-year)	
	Concentrations/unit value	Impact
1. Benefits corresponding to worksite costs		
Resources input into business activities		
Energy input	- 0.28 (kl-crude/1,000kl)	45 (TJ)
Water input	- 3 (g/kl)	122 (1000t)
Related to environmental impacts and wastes		
Emissions to air:		
CO ₂	- 0.70 (kg-CO ₂ /kl)	3 (1000t-CO ₂)
SOx	0.0 (g/kl)	0 (t)
NOx	- 0.1 (g/kl)	2 (t)
Benzene	0.00 (g/kl)	- 0.11 (t)
Emissions to water:		
COD	- 0.24 (g/kl)	- 5.9 (t)
Industrial waste:		
Generated	- 20 (g/kl)	- 395 (t)
Recycled	- 23 (g/kl)	- 610 (t)
Landfill	2 (g/kl)	74 (t)
2. Benefits related to upstream and downstream costs		
Related to goods and services		
Reducing sulfur content of products	(sulfur content: mass %)	(potential SOx: t)
High octane gasoline	- 0.0001	- 1
Regular gasoline	0.0006	7
Naphtha	0.0117	26
Jet fuel oil	- 0.0262	- 150
Kerosene	0.0004	3
Diesel fuel	0.0012	17
Heavy fuel oil A	- 0.0325	- 134
Heavy fuel oil C	- 0.1977	2,399
LPG	0.0001	0
Total	0.0201	2,167
Reducing benzene in gasoline	- 0.0588 (volume %)	- 909 (t)
CO ₂ emissions from product use	0.0098 (t-CO ₂ /kl)	324 (1,000t-CO ₂)

Sakaide Refinery (as of March 31, 2005)

Address	1-1 Bannosumidori-cho, Sakaide, Kagawa
Start-up	October 1972
Total area	847,943 m ²
Company Staffs	209
Capacity	120,000 barrels / day
ISO 9001	May 10, 1996
ISO 14001	June 18, 1997

About the Sakaide Refinery

The Sakaide Refinery, located in Kagawa Prefecture in the Shikoku Region, is positioned in the Sakaide Ichiban Industrial Belt and facing the Seto Inland Sea. It produces products such as LPG, gasoline, kerosene, diesel fuel, A/C heavy fuel oil, and asphalt for road use, as well as liquid sulfur and liquid carbon gas, and provides these products to various locations in Eastern Japan. The Sakaide Refinery also plays a role as an export hub of these products overseas.

- **Environmental activities:** Beginning with supplying sulfur free products, the Sakaide Refinery promotes energy conservation and the reduction of environmental impact, and actively participates in external announcements regarding energy conservation examples, etc. Since it is located next to the Seto Inland Sea National Park, it also aims to be an environmentally conscious refinery facility as a whole.
- **Safety activities:** Safety is the foundation of this refinery's operations, and safety maintenance and improvement measures beginning with safety management and educational programs for the operations departments are actively pursued. Furthermore, in order to handle major disasters such as the Tounan Sea Earthquake, the Sakaide Refinery also reinforces its crisis management system by engaging, for example, in joint training programs with other companies in the area.
- **Activities for the regional community:** Striving for symbiosis with the regional community, the Sakaide Refinery, together with other companies in the Bannosu Industrial Belt, participates in exchanges with the local community (such as the softball tournament, field day events, etc.) and in the "Sakaide Ohashi Festival", placing importance on direct communication.



Hidetomo Matsumura
General Manager
Sakaide Refinery

Environmental Activities

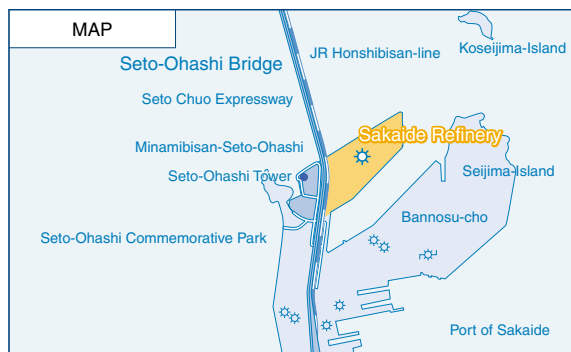
- **Energy conservation and awards**
Received the Energy Conservation Center Chairman's Award at the Energy Conservation Excellent Case Example Competition (Sponsor: Energy Conservation Center)
(Content: Reduction of fuel consumption by changing in accordance with the production plan the heating furnace temperature of the atmospheric distillation units.)

Health and Safety Activities

- **Preventative measures**
Developed various safety Activities in conjunction with cooperating companies such as educational seminars on disasters and explosions
- **Awards**
Received the "Fiscal 2004 Excellence in handling of hazardous substances by a production site" Fire Chief's Award at the Fiscal 2004 Hazardous Substances Safety Competition (Sponsor: National Hazardous Substances Safety Association), etc.

Regional Communication Activities

- Engages in information exchange with the 6 companies located in the Bannosu District, by implementing the General affairs meeting (once monthly), and Safety & environment meeting (6 times annually)
- Participation in events such as the "Sakaide Ohashi Festival" and the festival sponsored by the town council (approximately 6 events annually)
- Participation in the regional field day event and the softball tournament
- Cleaning of local roads (4 times annually), etc.



Number of Staff holding Environmental Qualifications

Air pollution control manager	10
Water pollution control manager	11
Noise pollution control manager	1
Hazardous materials officer (Class A & B)	217
High-pressure gas production safety manager (Class A & B)	174
Qualified person for heat management	10
Qualified person for electricity management	5
Specially controlled industrial waste manager	2
Engineering manager for disposal facilities of industrial waste	2
Boiler operator (Special grade)	2
Boiler operator (1st & 2nd grade)	211

Number of visitors to the Refinery in Fiscal 2004	17 visits 337 people
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No accident record (as of December 2004)	299,000 hours
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PCB custody status	None
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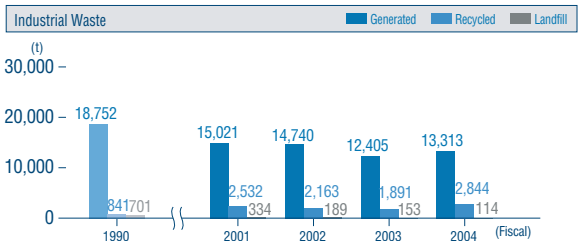
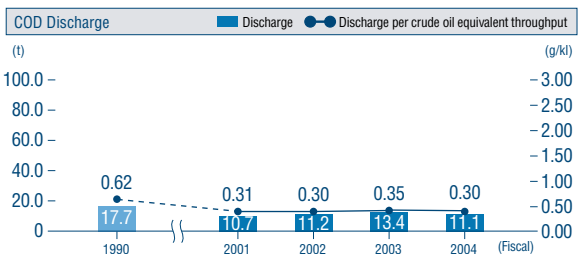
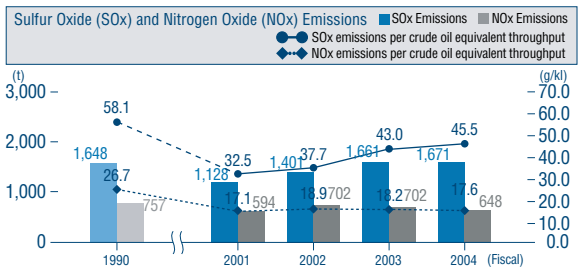
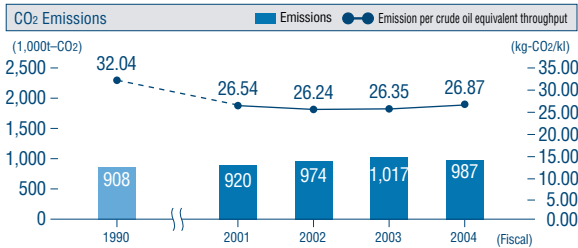
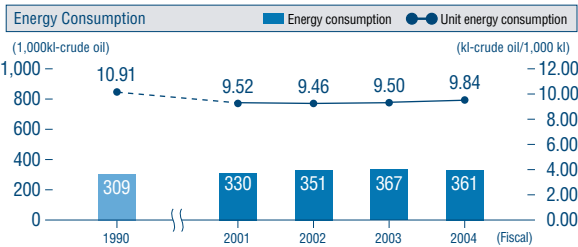
Regulated Pollutants

Air pollutants	Pollutant	Standard	Actual Performance in Fiscal 2004	
			Maximum	Average
	NOx (m ³ N/hour; total pollutant load control)	190.0	48	36
	SOx (m ³ N/hour; total pollutant load control)	164.0	75.5	66.8
	Particulate (boiler; g/m ³ N)	0.05	0.005	0.005

Water pollutants	Pollutant	Standard	Actual Performance in Fiscal 2004	
			Maximum	Average
	COD (kg/day; total pollutant load control)	120.0	47.1	30.3
	COD (mg/L)	15 (10)	6.0	4.2
	SS (mg/L)	15 (10)	8.0	4.5
	Oil Content (mg/L)	2	Below measurement threshold	
	Nitrogen (kg/day; total pollutant load control)	180	54.1	31.2
	Nitrogen (mg/L)	120 (60)	2.3	1.5
	Phosphorus (kg/day; total pollutant load control)	18	1.03	0.14
	Phosphorus (mg/L)	16 (8)	0.06	0.04
	Phenols (mg/L)	1	0.010	0.010

Values in () are daily average.

Environmental Performance (energy, etc.)



Environmental Performance (PRTR)

PRTR listed substances	Releases	Releases			Transfers	
		Air	Water	Soil		
Ethyl benzene	kg/year	690	0	0	690	0
Xylene	kg/year	2,800	0	0	2,800	0
Cobalt and its compounds	kg/year	0	0	0	0	1,700
Toluene	kg/year	10,000	0	0	10,000	0
Nickel compounds	kg/year	0	0	0	0	35,000
Benzene	kg/year	2,500	0	0	2,500	0
Molybdenum and its compounds	kg/year	0	0	0	0	55,000
Zinc compounds (water soluble)	kg/year	0	1,500	0	1,500	0

* In addition to above, we treat 2-aminoethanol, 1,3,5-trimethylbenzene and cyclohexylamine over 1 thousand kg per year, the release and transfer volume are 0 kg per year for all substances.

Environmental Accounting

Category and Key Activity	Fiscal 2004	
	Investment	Cost
1. Business area: Pollution prevention	51	742
Global environmental conservation	0	0
Resource circulation	0	52
2. Upstream/downstream: Green purchasing	0	0
Reduction of environmental impact of products	220	8,373
Sulfur reduction of products	(209)	(5,870)
Substitution of toxic substances in gasoline	(11)	(2,503)
3. Administration	0	35
4. Research and development	0	0
5. Social activity	0	0
Total	271	9,202

Purchasing recycled paper: 1 million yen

Economic benefit (million yen)

Details of Benefit	Fiscal 2004
Energy conservation (cogeneration)	152
Total	152

Environmental conservation benefits

Item	Fiscal 2004	
	Reduction (year-on-year)	
	Concentrations/unit value	Impact
1. Benefits corresponding to worksite costs		
Resources input into business activities		
Energy input	- 0.34 (kl-crude/1,000kl)	211 (TJ)
Water input	- 6 (kg/kl)	- 56 (1000t)
Related to environmental impacts and wastes		
Emissions to air:		
CO2	- 0.52 (kg-CO2/kl)	30 (1000t-CO2)
SOx	- 2.5 (g/kl)	- 10 (t)
NOx	0.6 (g/kl)	54 (t)
Benzene	- 0.01 (g/kl)	0.00 (t)
Emissions to water:		
COD	0.05 (g/kl)	2.3 (t)
Industrial waste :		
Generated	- 42 (g/kl)	- 908 (t)
Recycled	- 28 (g/kl)	- 953 (t)
Landfill	1 (g/kl)	39 (t)
2. Benefits related to upstream and downstream costs		
Related to goods and services		
Reducing sulfur content of products (sulfur content: mass %)		(potential SOx: t)
High octane gasoline	0.0002	1
Regular gasoline	0.0016	23
Naphtha	- 0.0219	- 5
Jet fuel oil	0.0002	2
Kerosene	0.0011	10
Diesel fuel	0.0010	18
Heavy fuel oil A	- 0.0095	- 88
Heavy fuel oil C	- 0.0641	- 541
LPG	- 0.0001	0
Total	- 0.0025	- 581
Reducing benzene in gasoline	- 0.0393 (volume %)	- 1,206 (t)
CO2 emissions from product use	0.0075 (t-CO2/kl)	305 (1,000t-CO2)

Cosmo Matsuyama Oil Co., Ltd. (as of March 31, 2005)

Address	3-580 Okaga, Matsuyama, Ehime
Start-up	February 1944
Total area	691,874 m ²
Company Staffs	104
ISO 9001	November 14, 1997
ISO 14001	December 28, 1998



About the Cosmo Matsuyama Oil

Cosmo Matsuyama Oil is situated on the eastern side of the National Park of Seto Inland Sea and its core business is the production and sale of petroleum products and petroleum solvents. It provides a stable supply of products to users in various parts of Western Japan, and a portion of its products are exported to South Korea, China, and Taiwan through the Maruzen Oil and Chemicals Co., Ltd.

- Environmental activities: In the area of aromatic agents, Cosmo Matsuyama Oil is developing environmentally compatible products which have a small environmental impact. In addition, for purposes of conserving energy, it uses an inverter for the boiler's combustion ventilator, and by reevaluating operational management, fuel consumption is decreasing.
- Safety activities: With "In the tradition of our safe culture, continue to maintain our accident free record", as being our primary objective, Cosmo Matsuyama Oil has had no accident since 1983 for 21 years. In addition, it has developed a system for reporting minor concerns and worrisome situations, thereby cultivating a culture of awareness towards accident prevention and sensitivity towards dangers.
- Activities for the regional community: With "promotion of environmental safety that is in harmony with society" as one of the primary management objectives, Cosmo Matsuyama Oil aims to be a company that is loved by the community for the considerations it makes concerning the environment and safety. Cosmo Matsuyama Oil keeps cooperation with the neighboring community and participation in the annual events (such as the summer festival, other festivals, respect for the elderly day, the year end celebration, etc.).



Shoji Yoshida
President
Cosmo Matsuyama Oil

Environmental Activities

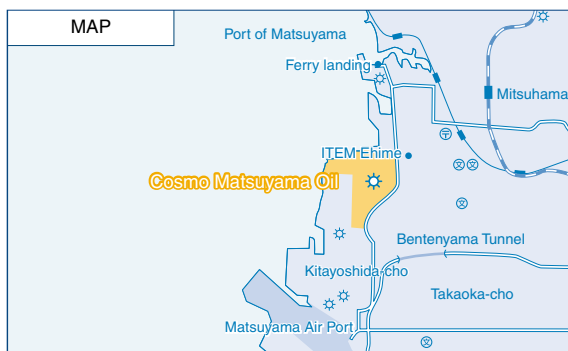
- Energy conservation
Introduction of the "motor inverter control (HDRIVE method)", etc.

Health and Safety Activities

- Preventative measures
Developed methods for reporting minor concerns and worrisome situations.
- Results
Continued record of no accidents or disasters (21 years)

Regional Communication Activities

- Participation in the local summer festival and respect for the elderly event
- Participation in campaign around the train stations of the Hokujo Railway
- Participation in events that promote neighborly interaction (cleaning of the highway in front of the company 4 times annually), etc.



Number of visitors to the factory in Fiscal 2004	5 visits 162 people
No accident record (as of December 2004)	6,732,000 hours
PCB custody status	High voltage transformers 1 units Others

Number of Staff holding Environmental Qualifications

Air pollution control manager	10
Water pollution control manager	11
Noise pollution control manager	1
Vibration pollution control manager	1
Dioxin pollution control manager	1
Hazardous materials officer (Class A & B)	113
High-pressure gas production safety manager (Class A & B)	91
Qualified person for heat management	6
Qualified person for electricity management	2
Specially controlled industrial waste manager	1
Engineering manager for disposal facilities of industrial waste	3
Boiler operator (Special grade)	1
Boiler operator (1st & 2nd grade)	94

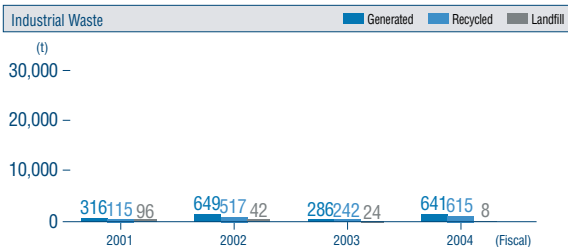
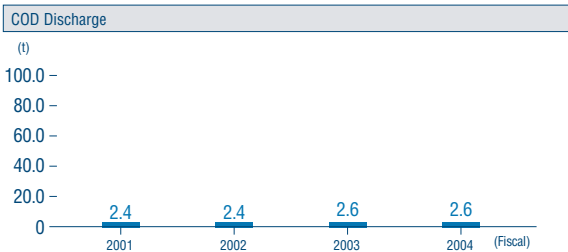
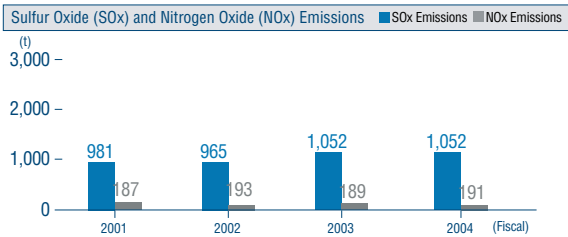
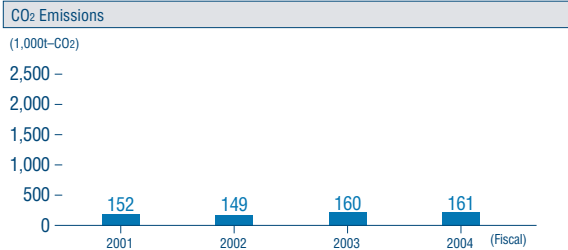
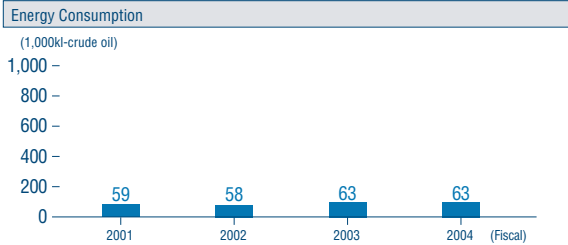
Regulated Pollutants

Air pollutants	Pollutant	Standard	Actual Performance in Fiscal 2004	
			Maximum	Average
	NOx (m³N/hour; total pollutant load control)	—	16.20	12.49
	SOx (m³N/hour; total pollutant load control)	208	65.53	49.34
	Particulate (boiler 3HB; g/m³N)	0.17	0.05	0.04

Water pollutants	Pollutant	Standard	Actual Performance in Fiscal 2004	
			Maximum	Average
	COD (kg/day; total pollutant load control)	361.5	27.6	7.1
	COD (mg/L)	15 (10)	4.9	2.7
	SS (mg/L)	20	6.0	2.0
	Oil Content (mg/L)	2	Below measurement threshold	
	Nitrogen (kg/day; total pollutant load control)	192.5	11.0	5.2
	Nitrogen (mg/L)	120 (60)	0.78	0.55
	Phosphorus (kg/day; total pollutant load control)	24.39	1.53	0.52
	Phosphorus (mg/L)	16 (8)	0.11	0.09
	Phenols (mg/L)	0.3	Below measurement threshold	

Values in () are daily average.

Environmental Performance (energy, etc.)



Environmental Performance (PRTR)

PRTR listed substances		Releases				Transfers
		Air	Water	Soil	Total	
Ethyl benzene	kg/year	3,300	2.6	0	3,303	1.0
Xylene	kg/year	12,000	2.8	0	12,003	5.1
1,3,5-trimethylbenzene	kg/year	270	4.9	0	275	1.0
Toluene	kg/year	20,000	16	0	20,016	2.5
Benzene	kg/year	5,000	2.4	0	5,002	0.1
Ethylene glycol	kg/year	65	0	0	65	0
1,2-dichloroethane	kg/year	2,400	0	0	2,400	0
Phenol	kg/year	68	1.5	0	70	0.3

* In addition to above, we treat 2-aminoethanol over 1 thousand kg per year, the release and transfer volume are 0 kg per year.

Environmental Accounting

Environmental conservation costs (million yen)

Category and Key Activity	Fiscal 2004	
	Investment	Cost
1. Business area: Pollution prevention	0	70
Global environmental conservation	0	0
Resource circulation	0	3
2. Upstream/downstream: Green purchasing	0	0
Reduction of environmental impact of products	6	549
Sulfur reduction of products	(0)	(0)
Substitution of toxic substances in gasoline	(6)	(432)
Reducing aromatics in petrochemical products	(0)	(117)
3. Administration	0	41
4. Research and development	0	0
5. Social activity	0	0
Total	6	663

Purchasing recycled paper: 1 million yen

Economic benefit (million yen)

	0
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Environmental conservation benefits

Item	Fiscal 2004	
	Reduction (year-on-year)	Impact
1. Benefits corresponding to worksite costs		
Resources input into business activities		
Energy input		- 6 (TJ)
Water input		- 106 (1000t)
Related to environmental impacts and wastes		
Emissions to air:		
CO2		- 1 (1000t-CO2)
SOx		0 (t)
NOx		- 2 (t)
Benzene		- 0.30 (t)
Emissions to water:		
COD		0.00 (t)
Industrial waste :		
Generated		- 355 (t)
Recycled		- 373 (t)
Landfill		16 (t)
2. Benefits related to upstream and downstream costs		
Related to goods and services		
Reducing sulfur content of products		(potential SOx: t)
High octane gasoline		0
Regular gasoline		0
Naphtha		- 9
Jet fuel oil		5
Kerosene		0
Diesel fuel		3
Heavy fuel oil A		-30
Heavy fuel oil C		208
LPG		0
Total		176
Reducing benzene in gasoline		- 54 (t)
Reducing aromatics in petrochemical products		- 1,983 (kl)
CO2 emissions from product use		20 (1,000t-CO2)

Cosmo Research & Development Center (as of March 31, 2005)

Address	1134-2 Gongendo, Satte, Saitama
Start-up	April 1969
Total area	86,281 m ²
Company Staffs	101



About Cosmo Research & Development Center

In a unique environment which straddles both Saitama and Ibaraki prefectures, the Center engages in petroleum business research such as quality improvements in petroleum products or performance improvements in catalysts for refinery use, as well as in research development and business support in areas such as new energy and environmental technology.

- **Environmental activities:** While smaller in scale, the Center handles the same equipment and hazardous materials as do the refineries, and therefore, much effort is poured into environmental preservation through related internal education programs and group activities. Efforts are also being made to reduce industrial waste in real numbers.
- **Safety activities:** Since its establishment in 1969, the Center has had no accidents for hazardous materials or high pressure gas. In this year in particular, risk assessment of research facilities and conduct have been implemented to formulate measures for handling hazardous factors. Regular comprehensive disaster prevention drills are held to prepare for the unlikely occurrence of accident.
- **Activities for the regional community:** As a business that has made the pledge to improve its environmental friendliness as outlined in the Saitama prefecture program "Sainokuni Eco Up", the Center engages in information disclosure so as to respond to the requests of the people in the community. Company staffs of the entire company contributes to the beautification of the surrounding area as well. For example, we engage in heartfelt cleanup efforts twice annually around the Gongendo area which is known for its cherry blossoms.



Mitsugu Yumoto
General Manager
Research & Development
Center

Regulated Pollutants

Pollutant	Standard	Actual Performance in Fiscal 2004	
		Maximum	Average
COD (mg/L)	160 (120)	16.8	10.1
SS (mg/L)	60 (50)	14	9
Oil Content (mg/L)	5	1	Below measurement threshold
Nitrogen (mg/L)	120 (60)	7	6
Phosphorus (mg/L)	16 (8)	0.9	0.8
Phenols (mg/L)	1	Below measurement threshold	

Values in () are daily average.

Environmental Accounting

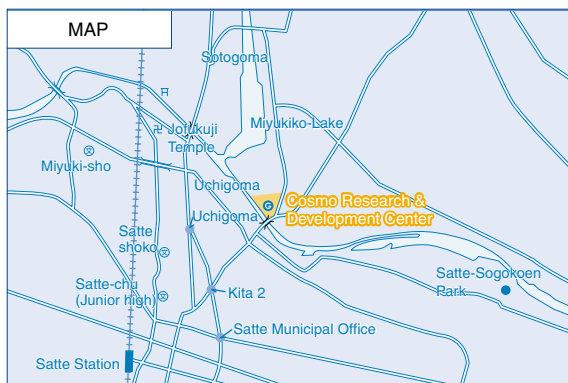
Environmental conservation costs (million yen)

Category and Key Activity	Fiscal 2004	
	Investment	Cost
1. Business area: Pollution prevention	0	0
Global environmental conservation	0	0
Resource circulation	0	0
2. Upstream/downstream: Green purchasing	0	0
Reduction of environmental impact of products	0	0
Sulfur reduction of products	0	0
Substitution of toxic substances in gasoline	0	0
3. Administration	0	0
4. Research and development	133	1,088
5. Social activity	0	0
Total	133	1,088

Purchasing recycled paper: 1 million yen

Environmental Conservation benefits

Item	Fiscal 2004
Benefit of research and development (royalty)	12
Total	12



Number of Staff holding Environmental Qualifications

Air pollution control manager	4
Water pollution control manager	7
Dioxin pollution control manager	1
Hazardous materials officer (Class A & B)	80
High-pressure gas production safety manager (Class A & B)	40
Specially controlled industrial waste manager	1
Engineering manager for disposal facilities of industrial waste	1
Environmental Certified Measurer	2
Boiler operator (1st & 2nd grade)	8

Cosmo Oil Lubricants Co., Ltd. (as of March 31, 2005)

Address	4-9-25, Shibaura, Minato-ku, Tokyo
Start-up	July 1998
Total area	6,293 m ²
Company Staffs	185

Shimotsu Plant visitors in Fiscal 2004	3 cases	10 people
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Number of Staff Holding Environmental Qualifications

Plant	Qualification	Number
Shimotsu Plant	Water pollution control manager	2
	Hazardous materials officer (Class A & B)	46
	High-pressure gas production safety manager (Class A & B)	11
	Qualified person for electricity management	1
	Specially controlled industrial waste manager	2
Osaka Plant	Boiler operator (1st & 2nd grade)	11
	Air pollution control manager	2
	Water pollution control manager	2
	Hazardous materials officer (Class A & B)	29
	High-pressure gas production safety manager (Class A & B)	11
	Qualified person for heat management	1
	Specially controlled industrial waste manager	2
Boiler operator (1st & 2nd grade)	9	

Regulated Pollutants

Pollutant	Standard	Actual Performance in Fiscal 2004	
		Maximum	Average
NOx (ppm)	180	36	32
SOx (m ³ N/hour)	0.035 ^{*1}	0.0087	0.0075
Particulate (boiler; g/m ³ N)	0.15	0.0074	0.0060

*1: K-value 1.17 (0.035m³N/hour)

Pollutant	Standard	Actual Performance in Fiscal 2004	
		Maximum	Average
Consumption of iodine (mg/L)	220	1.8	1.8

Newly ISO Certified Factories

Business site	Location	Standard	Certified by	Reg. No.	Date
Shimotsu Plant	Wakayama	ISO14001	JQA	JQA-EM3251	2003.6.27
Shimotsu Plant	Wakayama	ISO9001	JQA	JQA-1677	1997.3.31
Osaka Plant	Osaka	ISO14001	JQA	JQA-EM3435	2003.10.17
Osaka Plant	Osaka	ISO9001	JQA	JQA-1724	1997.5.9

Environmental Accounting

Environmental conservation costs (million yen)		
Category and Key Activity	Fiscal 2004	
	Investment	Cost
1. Business area: Pollution prevention	0	0
Global environmental conservation	0	0
Resource circulation	0	0
2. Upstream/downstream: Green purchasing	0	71
Reduction of environmental impact of products	0	0
Sulfur reduction of products	0	0
Substitution of toxic substances in gasoline	0	0
3. Administration	0	0
4. Research and development	0	0
5. Social activity	0	0
Total	0	71

Economic benefit (million yen)	0
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Cosmo Oil Co., Ltd. Head Office and Branches (as of March 31, 2005)

Address	Head office: 1-1-1, Shibaura, Minato-ku, Tokyo Branches: Sendai, Tokyo, Nagoya, Osaka, Hiroshima, Takamatsu, Fukuoka
Company Staffs	673 (Head Office and branches)

Environmental Accounting

Environmental conservation costs (million yen)	
Category and Key Activity	Fiscal 2004
Environmental remediation cost	714
Environmental conservation costs: Cost of purchasing recycled paper	7
Donations related to environmental activities	31
Cost of making environmental report	35

Economic benefit (million yen)	
Details of Benefit	Fiscal 2004
Electricity conservation at head office	4
Total	4

Comparison with Environmental Reporting Guidelines (Fiscal 2003 version) by the Ministry of the Environment

Report Content		Pages
Basic Heading	CEO's statement	3-4
	Foundation of reporting (reporting organization, time period, fields)	2, Back cover
	Summary of the nature of the business	1, 15-16, 59-60
Summary of Policies, Targets, Achievements in Environmental Conservation	Business policies regarding environmental conservation	17-18, 81-91
	Summary of plans, targets, and achievements in environmental conservation	19-20, 61-64
	Material Balance	23-24, 69-70
	Summary of environmental accounting information	75-78
State of Environmental Management	State of environmental management system	81-92
	State of supply-chain management for environmental conservation	20, 25-26, 30-31
	State of research and development of technologies for environmental conservation and environment-conscious products/services	21-22, 33-34, 65-68
	State of the disclosure of environmental information and communication	47-52
	State of compliance with environmental regulations	28-29, 81-82
	State of social contribution related to environment	47-52, 81-91
State of Activities for Reduction of Environmental Impact	State of total energy input, and mitigation measures	23-24, 27, 69-70, 72, 78, 81-90
	State of amount of material input, and mitigation measures	69
	State of volume of water resource input, and mitigation measures	69,78
	State of GHG emissions, and mitigation measures	21-32, 69-70, 72, 78, 81-90
	State of emissions and removal of chemical substances, and mitigation measures	20, 29, 31, 69, 72, 74, 78, 81-90
	Production volume or sales volume	16, 24,70
	Total amount of waste, amount finally disposed of waste and mitigation measures	20, 28, 32, 69, 73, 78, 81-90
	Total amount of waste water, and mitigation measures	29, 69, 74, 78, 81-90
	State of environmental burdens from transportation, and mitigation measures	25-26, 30, 69-70
	State of green purchasing, and promotion measures	20
	State of environmental burdens on whole life cycle of products and services	23-24, 69-70
State of Social Activities	Information of labour, health and safety	45-46, 64, 80-90
	Information of human rights and employment	41-44, 64, 79-80
	Information related to community involvement	81-91
	State of the disclosure and communication with community, not related to environmental information	36-40, 81-91
	Information of related to consumer protection safety of products	37-38, 58
	Information of related to politics and morals	58
	Information of related to personal information protection	37, 58

Comparison with Global Reporting Initiative Sustainability Reporting Guidelines 2002

Report Content		Page	
Vision and Strategy	Statement of the organization's vision and strategy regarding its contribution to sustainable development	5-6, 17-18, 35-36	
	Statement from the CEO (or equivalent senior manager) describing key elements of the report	3-4	
Profile	Organizational Profile (Name of reporting organization, number of company staffs, list of stakeholders)	1, 16, 36, 79	
	Report scope (Contact person(s) including e-mail and web addresses, reporting period, specific limitations on the scope)	2, 57, Backcover	
	Report Profile (Decisions not to apply GRI protocols, Policy with regard to providing independent assurance, Means by which report users can obtain additional information)	2, 53-54	
Governance Structure and Management Systems	Structure and Governance (Governance structure of the organization, Processes for management of economic, environmental, and social risks, Policies relevant to economic, social, environmental performance)	7-12, 17-18	
	Stakeholder Engagement (Basis for identification of stakeholder, Approaches to stakeholder consultation)	36, 38, 42, 79	
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Performance Indicators	Economic Performance Indicators	Customers	16
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Glossary

• Aromatics

Compounds that have benzene and benzene rings as part of their chemical structure. They may have two or more condensed aromatic rings, or the hydrogen atoms on the ring may be replaced by a member of the alkyl group (toluene, xylene, etc.)

• Atmospheric distillation unit

Crude oil is composed of a variety of hydrocarbon compounds. The atmospheric distillation unit takes advantage of the different boiling points of these compounds to “crack” crude oil into separate fractions—gasoline, kerosene, gas oil, heavy fuel oil and other components—under atmospheric pressure. In general, the scale of a refinery is defined by the process capacity of its atmospheric distillation unit.

• Barrel

A unit for expressing oil volume, equivalent to approximately 159 liters.

• Catalytic reformer

A unit that raises the octane number of naphtha that has been cracked by the atmospheric distillation unit, producing a gasoline component. Hydrogen, a by-product of chemical reactions in this unit, is used in desulfurization.

• COD

Refers to chemical oxygen demand, an indicator of water pollution. Expresses the volume of oxygen required for oxidation of oxidizable substances (organic matter, etc.) in water.

• Cogeneration system

An energy supply system that uses heat emitted at the time of electricity generation to meet demand for heat for heating, cooling or hot water. This is expected to lead to an improvement in integrated energy efficiency.

• Crude oil equivalent throughput

Value used when calculating the unit energy consumption of a processing equipment, which is obtained by converting the volume of oil passing through it into an equivalent amount of crude oil processed by the atmospheric distillation unit. This value is meant to reflect the operating conditions of each equipment, offsetting discrepancies in the type and structure of facilities used in different refineries. The crude oil equivalent throughput of a processing equipment is derived by: [throughput volume] x [complexity factor]. The complexity factor of a given equipment is its construction cost per throughput, relative to the atmospheric pressure distillation unit (whose complexity factor is 1). The crude oil equivalent throughput of a refinery on the whole is the aggregated crude oil equivalent throughput values of its entire processing equipment fleet.

• Electrostatic precipitator

An electrostatic precipitator is a device that administer an electric charge to fine particles and liquid mist, etc. floating in gas and removes them using electrostatic energy. Highly efficient collection of even fine particles is possible with low pressure loss, so this equipment is widely used at large scale generating facilities such as thermal power stations.

• Exhaust gas denitrizer

A device for removing NO_x from exhaust gas. One method involves reduction using ammonia and a catalyst, and another method involves having NO_x absorbed by an absorbing liquid.

• Fluid catalytic cracking unit

This unit uses a minute-particle catalyst to crack heavy fuel oil. The cracked oil is divided into LPG, gasoline, gas oil and heavy fuel oil. The gasoline component produced by this unit has a high octane number, and accounts for a high proportion of ingredients mixed in other products.

• Hydrocarbon vapor

Hydrocarbon vapor is a type of hydrocarbon steam generated by gasoline, benzene or toluene. In most cases it diffuses from oil depots, loading zones for oil tankers or distribution bases for chemical products. It is recognized as one of the causes of photochemical smog and malodor.

• Hydrodesulfurization unit

This is unit that uses catalysts, makes the sulfur compounds contained in petroleum react with hydrogen, turns the sulfur to hydrogen sulfide, and eliminates it. This unit can be used for desulfurization of naphtha, kerosene, gas oil, and heavy fuel oil, among others.

The gas oil hydrodesulfurization unit has been reinforced in accordance with stricter restrictions on sulfur content and in lines with voluntary goals to reduce sulfur content. The heavy fuel oil desulfurization unit is distinguished between the direct desulfurization unit and the vacuum gas oil hydrodesulfurization unit. The direct desulfurization unit desulfurizes the atmospheric residue that remains after separation by the atmospheric distillation unit, while the vacuum gas oil hydrodesulfurization unit desulfurizes the vacuum gas oil after separation of the asphalt fraction using the vacuum distillation unit. The FCC gasoline desulfurization unit that was introduced to 3 refineries in Fiscal 2004 significantly reduces the octane number when the FCC gasoline is desulfurized in its original state, and for that reason, the newest technology that desulfurizes only the portion with high sulfur content and low octane number is used.

- **NO_x (nitrogen oxide)**

A collective term for nitrogen oxides, of which the principal air pollutants are nitrogen monoxide and nitrogen dioxide. Most factory smoke and automobile exhaust gas consist of nitrogen monoxide, which under the influence of ultra-violet rays, reacts with oxygen and ozone to form nitrogen dioxide. Nitrogen dioxide is the subject of air pollution controls based on health concerns. Nitrogen oxides are a cause of photochemical smog, and also of "acid rain" the same as sulfur oxides. Dinitrogen monoxide (nitrous oxide) is also a greenhouse gas.

- **Octane number**

The octane number is one gauge of motor gasoline quality. The higher the octane number, the less engine knocking will occur. JIS standards specify an octane number of at least 89.0 for regular gasoline, and at least 96.0 for premium gasoline.

- **Oil boom**

A boom to prevent oil from spreading on the surface of the sea. It is located on piers and is extended over the water surface by tugboats.

- **Particulate matter (PM)**

Particulate matter in the atmosphere. Suspended particulate matter (SPM) is held to be a cause of air pollution, and is defined as particulate matter suspended in the air with a particle diameter of 10 μ m or less. "Minute-particle matter", where the particle diameter is 2.5 μ m or less, is called PM_{2.5}, and is regarded as a cause of asthma and bronchitis.

- **PCB**

Stands for Polychlorinated Biphenyl, an excellent thermostat and electrical insulator, having been used in transformers, condensers, heat transfer media and carbonless paper. However, PCBs are difficult to dissolve, accumulate in the body and are toxic, causing skin problems and damage to liver functions. Currently the manufacture and import of PCBs is in principle prohibited, and their storage and disposal is controlled by law.

- **PRTR**

Stands for Pollutant Release and Transfer Register. Businesses must keep track of, and report to the authorities the volumes of releases into the air, water and soil and the transfers outside their plant as waste material of prescribed chemical substances. Enacted in 1999, the system came into force in 2001.

- **SO_x (Sulfur oxide)**

A collective term for oxides of sulfur, of which the principal air pollutants are sulfur dioxide, sulfur trioxide and sulfur mist generated by the combination of the sulfur oxides with water in the air. When sulfur oxides react with water they show strong acidity, and are a cause of acid rain.

- **Sulfur free fuel**

Automobile fuel having sulfur content not exceeding 10ppm. Planned to be introduced in Europe in 2009.

- **Sulfur recovery unit**

The unit collects sulfur from by-product gases containing hydrogen sulfide emitted from hydrodesulfurization unit or other oil refinery facilities. Large quantity of sulfur oxide is emitted when gases containing hydrogen sulfide are directly used as fuel. Oil refineries therefore remove hydrogen sulfide from by-product gases before using them as fuel, and collect sulfur from the hydrogen sulfide.

- **Sour water treatment unit**

The wastewater discharged from hydrodesulfurization units and other refinery equipment contains hydrogen sulfide and other odorous materials. This unit uses steam injection to remove odorous materials. The hydrogen sulfide removed by this unit is then processed by the sulfur recovery unit.

- **Unit energy consumption**

It is a value calculated when dividing total energy consumption at oil refinery by crude oil equivalent throughput. The unit is "kl-crude oil/1000kl". Total energy consumption is converted into crude oil, and the unit is "kl of crude oil".

- **Vacuum distillation unit**

A unit that distills under reduced pressure. When oils with a high boiling point, such as heavy fuel oils, are heated, they may break down before vaporization can happen. By reducing the pressure in the unit, the boiling point of the oil is reduced, allowing for efficient cracking of fractions.

- **VOCs (Volatile Organic Compounds)**

This is generic term for organic compounds that can easily vaporize at ambient temperatures. VOCs include hydrocarbons such as toluene, benzene, and xylene which are produced during the refining process of petroleum, as well as a variety of other substances such as chlorofluorocarbons, formaldehyde, trichloroethylene, tetrachloroethylene, etc. When VOCs are released into the air, the chemical reaction is said to be related to the production of oxidants and SPMs (suspended particulate matter).



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