Results of the Fiscal 2005 Follow-up to the Keidanren Voluntary Action Plan on the Environment (Summary)

—Section on Global Warming Measures—

< Performance in Fiscal 2004 >

November 18, 2005

Nippon Keidanren (Japan Business Federation)

Contents

1. CO_2 emissions in fiscal 2004 by industry as a whole (comprising the industrial and energy-conversion sectors)

Under the philosophy that "positive involvement in environmental issues is essential to the survival of companies as well as their activities," Nippon Keidanren declared prior to the adoption of the Kyoto Protocol that it will "endeavor to reduce CO_2 emissions from the industrial and energy-converting sectors in fiscal 2010 to below the levels of fiscal 1990." Since then, participating industries and companies have continued to strive to achieve this target.

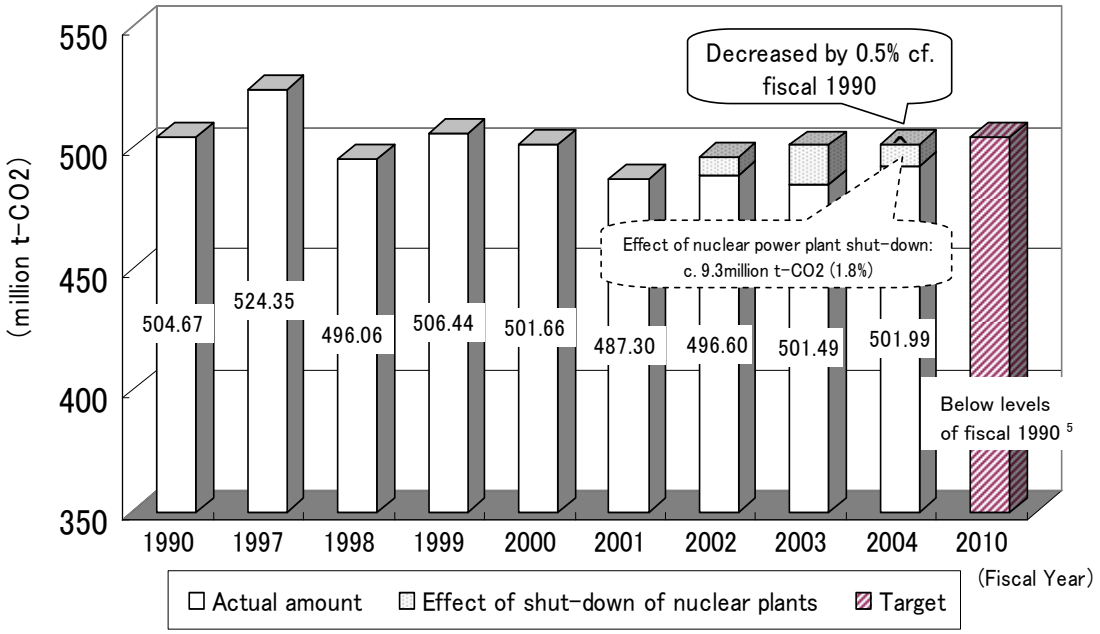
For the Fiscal 2005 Follow-up, one additional industry (Japan Petroleum Development Association) joined the 34 industries in the industrial and energy-converting sectors that participated in the Fiscal 2004 Follow-up, making the total number of participating industries 35. The 35 industries together emitted 504.67 million t-CO_2[2] in fiscal 1990.

This amount is equivalent to around 45.0% of the 1.1223 billion t-CO_2 emitted by Japan as a whole during that year. Moreover, the emissions of the 35 industries represented approximately 82% of the total amount of CO_2 emitted by the country's industrial and energy-converting sectors in fiscal 1990 (615.00 million t-CO_2[3]).

Results of the fiscal 2005 Follow-up indicate that CO_2 emissions in fiscal 2004 were 501.99 million t-CO_2, a 0.5% decrease compared to fiscal 1990 and a 0.1% increase compared to fiscal 2003, making this the fifth consecutive year since fiscal 2000 that the target has been achieved.

If the effect of the worsening of the CO_2 emission intensity of electricity resulting from the long-term shut-down of some nuclear power plants is excluded, CO_2 emissions in fiscal 2004 can be estimated at approximately 493.00 million t-CO_2, a decrease of around 2.3% compared to fiscal 1990.

CO_2 Emissions by 35 Industries in the Industrial and Energy-Converting Sectors[4]



2. Trends by industry

Of the 35 industries in the industrial and energy-converting sectors that participated in the fiscal 2005 Follow-up, 20 reported declines in CO_2 emissions compared to fiscal 1990, while 18 reported declines compared to fiscal 2003.

Of the 13 industries that defined their goals in terms of reductions of CO_2 emissions, 11 reported reductions compared to fiscal 1990 and 6 reported reductions compared to fiscal 2002[6].

All 5 of the 5 industries that defined their goals in terms of reduction of energy consumption reported reductions compared to fiscal 1990; none reported reductions compared to fiscal 2003[6].

Of the 22 industries that defined their goals in terms of either CO_2 emission intensity or energy consumption intensity, 14 reported improvements in their indices compared to fiscal 1990, and 18 of these industries also showed improvements in these indices compared to fiscal 2003 (see Attachment 1)[6].

3. Evaluation of Voluntary Action Plan measures

(1) Reasons for the variations in CO_2 emissions in the industrial and energy-converting sectors

An analysis of the reasons for the 0.5% decrease in CO_2 emissions by the 35 industries in fiscal 2004 compared to fiscal 1990 is provided in the table below. This reveals that improvement is progressing in the amount of emissions per production, to an extent that compensates for the worsening of the CO_2 emission coefficient and the increase in production, and that due to the success of energy-saving and other CO_2 emission reduction measures by the industries and companies the Voluntary Action Plan is producing results.

	Cf. fiscal 1990	Cf. fiscal 2003
Change in production*[1]	+8.6%	+2.0%
Change in CO_2 emissions per production	- 9.2%	-1.5%
Change in CO_2 coefficient*[2]	+0.1%	-0.4%
Total	-0.5%	+0.1%

*[1] For the indices for change in production, the indices with the closest relation to energy consumption in each industry were selected. The changes in production of the 35 participating industries in the industrial and energy-converting sectors are weighted averages applying the indices of each industry to CO_2 emissions.

*[2] CO_2/MJ for fuel use; CO_2/kWh for electricity consumption

<The effect of the shut-down of some nuclear power plants>

In fiscal 2004 some nuclear power plants remained shut down since the previous fiscal year, and through the effect of using thermal power generation to compensate for the amount of electricity generation lost as a result, in order to maintain a stable supply of electricity, the CO_2 emission intensity worsened.

If calculations were made using the CO_2 emission intensity for electricity in the event of there being no effect of a long-term stoppage of some nuclear power plants, based on estimates of the Federation of Electric Power Companies (3.39 t-CO_2/10,000 kWh for all electricity sources at electricity generating ends), the CO_2 emissions of the 35

participating industries would represent a decrease of about 9.3 million t-CO_2 (approximately 1.8%).

(2) Calculations for the achievement of targets in fiscal 2010

Calculations based on estimates by 7 industries (Federation of Electricity Power Companies, Petroleum Association of Japan, Japan Iron and Steel Federation, Japan Chemical Industry Association, Japan Paper Association, Japan Cement Association, 4 electrical/electronics-related groups), which account for 90% of the total CO_2 emissions by the industries in the industrial and energy-converting sectors, found the forecasted CO_2 emissions in 2010 of the 35 industries in the industrial and energy-conversion sectors to be 2.6% below the fiscal 1990 level.

By continuing to strengthen the measures based on the Voluntary Action Plan, the common goal set for all industries in the Voluntary Action Plan of reducing CO_2 emissions to “below the 1990 level” can be achieved.

	Fiscal 1990 actual	Fiscal 2010 estimate
7 major industries	444.94 million t-CO_2	440.73 million t-CO_2
(Percentage of total fiscal 2004 emissions)	—	(89.6%)
35 industries’ total	504.67 million t-CO_2	491.60 million t-CO_2
Cf. to fiscal 1990	—	2.6% decrease from fiscal 1990
Production amount*	—	6.0% increase from fiscal 1990

* In the estimated production amount, the amount of change in the total production amount is the weighted average in relation to the size of the CO_2 emissions based on estimates for production amount in fiscal 2010 calculated by each industry.

(3) An international comparison of energy efficiency

According to the international comparison of energy efficiency conducted by participating industries, in every industry world-leading levels of energy efficiency have been achieved (see Attachment 3).

It is important to contribute to the reduction of emissions of greenhouse gases on a global scale through furthering the overseas transfer of the advanced energy-saving and new and renewable energy technologies possessed by Japanese companies.

4. Efforts centering on industries in the transportation, offices and household sectors to reduce CO_2 emissions

An examination of the trends in Japan's total CO_2 emissions reveals that emissions in the transportation, offices and household sectors are increasing by 20–30% compared to those of 1990, and efforts are being made to strengthen measures in these sectors based on the Keidanren Voluntary Action Plan on the Environment.

To date, 10 industrial associations and companies from the offices and household sector and 13 from the transportation sector[7] have participated in this Voluntary Action Plan, each of them formulating voluntary action plans and endeavoring to take steps to deal with global warming (see Attachment 2). Some of the 23 participating industries and companies have set specific quantitative targets for fiscal 2010 such as those for CO_2 emissions or CO_2 emission intensity.

Moreover, in the participating industrial and energy-converting industries, measures are being taken in the transportation and household sectors to reduce CO_2 emissions.

According to actual examples reported by participating industries, in addition to promoting office and distribution measures, efforts are also being made to provide energy-saving products and services that make maximum use of technology possessed by companies and to encourage employees to reduce CO_2 emissions from homes and from commuting as initiatives intended to lead to nation-wide campaigns. In June 2005, Nippon Keidanren Chairman Hiroshi Okuda encouraged its member companies to take part in such government-led national campaigns as "Team Minus 6%," a project to achieve Japan's greenhouse gas reduction target of 6% below 1990 levels by 2012, and "Cool Biz," a summertime casual-dress campaign to reduce the use of air conditioning. A survey by Nippon Keidanren shows that over 85% of the 566 responding companies had adopted "Cool Biz" attire this summer. Energy Service Company (ESCO) operations are also being promoted making comprehensive use of companies' energy-saving expertise and technologies.

In addition, Nippon Keidanren, in cooperation with the Forestry Agency, encouraged its members to expand the use of domestic lumber, such as timber from thinning, as measures to protect forests and to secure absorbers of CO_2. Many members are improving the conditions of company-owned forests or promoting afforestation projects

in Japan and abroad. In such ways, voluntary activities to prevent global warming are spreading to various industry sectors.

It is important to contribute to the prevention of global warming by encouraging more companies to adopt these outstanding measures being implemented in various fields. From this perspective, Nippon Keidanren compiled the *Fiscal 2005 Report on Global Warming Prevention Measures: 600 Hints on Reducing CO_2 Emissions* in October 2005 and is now making efforts to disseminate the information to member companies.

The followings are examples of measures in transportation, offices and household, and other sectors reported by participating industries

[Examples of office measures]

- Introduction of energy-saving equipment (thermal storage HVAC systems, solar power generation systems, etc.)
- Shift in OA equipment, lighting fixtures, etc. to energy-saving types
- Introduction of insulated glass and light-filtering glass, adhesion of light-filtering film to glass
- Efficient operation of air conditioning, adjustment of set temperature
- Switching off lights during lunch breaks or using only every other light, using elevators less
- Abolition of company-owned cars

[Examples of distribution measures]

- Improvement in distribution efficiency through using larger trucks to transport products and utilizing joint transportation
- Modal shift to railway transport and shipping
- Consolidation of distribution bases
- Introduction of fuel-efficient cars, electric cars, natural gas cars, etc.
- Encouragement of fuel-efficient driving, such as the practice of turning off engines rather than leaving them idling, reduction of fast take-offs and accelerations, etc.
- Reduction in the weight and volume of cargo for transport by reducing product weight and reviewing packaging
- Measures to improve distribution efficiency through affiliation between distributors and their clients

[Examples of initiatives intended to lead to nation-wide efforts]

- Participation in the “Team Minus 6%” project (not only at the company level but also at the individual employee level)
- Environmental education for employees on such topics as how to keep environmental household account books
- Encouragement of the use of public transportation for commuting
- Provision of information on energy saving to customers through the Internet and the hosting of events

[Examples of measures from the LCA perspective, such as contributions made through products and services, etc.]

- Development and provision of various kinds of energy-saving equipment and high-efficiency heat pumps
- Development and provision of materials and systems that contribute to energy-saving
- Development and provision of cogeneration, fuel cells, etc.
- Use of waste products as raw materials for cement and sources of thermal energy
- Examples of quantitative evaluations (benefits estimated by industries)

- Electric refrigerators: reduction of CO_2 emissions in total life cycle by 30% (1995–2000)
- High-performance steel products: reduction effect through six main product items manufactured in the 1990s: about 6.5 million t-CO_2
- Liquid crystal displays: electricity-saving effect of diffusion of LCDs in PCs (2003): about 3 billion kWh
- Making tissue paper packages more compact: reduction of CO_2 emission intensity at time of shipping by 35%
- Sulfur-free car fuel: improvement of atmospheric pollution, 4-5% reduction in fuel usage

[Examples of measures to protect forests and CO_2 absorbers]

- Use of domestic timber from thinning for business cards, brochures, CSR reports, etc.
- Active participation in volunteer activities to protect forests hosted by local governments and companies
- Promotion of afforestation projects in other countries such as Australia

*1 For detailed information on efforts by member companies, please refer to the *Fiscal 2005 Report on Global Warming Prevention Measures: 600 Hints on Reducing CO_2 Emissions*, which is available at the following URL:
http://www.keidanren.or.jp/japanese/policy/2005/076.html.

5. Operations to reduce greenhouse gases overseas based on the Kyoto Mechanisms

The promotion of the reduction of CO_2 emissions overseas through the use of advanced technology of Japanese companies can also be described as an important voluntary measure on the part of industry, and it contributes significantly to the prevention of global warming. In particular, the Clean Development Mechanism (CDM) and Joint Implementation (JI), which can be used to achieve Japan's commitment under the Kyoto Protocol through reductions overseas, are positioned as important supplementary means of achieving the objectives of the Voluntary Action Plan.

In the fiscal 2005 Follow-up, many cases of specific voluntary operations such as new and renewable energy projects and methane gas recovery in various regions of the world are reported. Furthermore, many industrial associations and corporations are making financial contributions to domestic and international funds such as the Japan GHG Reduction Fund and the World Bank. (At present, there are over 50 cases of such contributions from Japanese companies.)

In addition, of those industries that have not yet implemented specific measures, some are making preparations to take such measures.

* Examples of projects utilizing the Kyoto Mechanisms aimed at international contribution reported by participating industries

Project outline	Credits earned (estimate)
Project in Chile to capture and burn methane gas from pig slurry to convert it into CO_2 and recycle the residue into fertilizer	410,000 t-CO_2 per year
Project to capture associated gases generated during drilling from the Rang Dong Oil Field in Vietnam and supply the gases as power generation fuel through pipelines that are planned to be constructed	680,000 t-CO_2 per year

Project to carry out the thermal destruction of HFC23, a byproduct generated at during CFC gas (HCFC22) production, at a plant in Gujarat, India	3 million t-CO_2 per year

(Note) In addition to those described above, other projects are underway, including a major project in China's Shandong Province to construct a processing plant for the decomposition of HFC23 gas generated as a byproduct during HFC22 production. This project is expected to generate carbon credits of 10 million t-CO_2 per year.

6. Disclosure of environmental information

In addition to citing the achievements of industry's environment-related efforts by representing environmental issues in visual form to the largest extent possible and following that up with quantitative figures, it is important to actively disclose environment-related information to gain the understanding of the public. As Nippon Keidanren believes that the Voluntary Action Plan should go hand in hand with the promotion of the voluntary disclosure of information on environmental activities, it encourages its members to further disclose information on their environmental activities thorough such means as the publication of environmental reports.

According to a survey conducted by Nippon Keidanren of its member companies in August 2005, 350 companies, or about 62% of the 566 responding companies, had already released environmental reports or other relevant documents, and 91 companies, or about 16%, were planning to issue such a report within two years. About 62% of the companies that had issued environmental reports had done so on a consolidated basis, and about 50% had issued them in at least one foreign language. This illustrates that companies are taking a proactive approach to providing information both domestically and internationally.

7. Future policies

In February 2005 the Kyoto Protocol entered into force, and in April the Cabinet approved the Kyoto Protocol Target Achievement Plan, which positioned the Keidanren Voluntary Action Plan on the Environment as the plan that will play a central role in the industrial and energy-converting sectors' efforts toward the achievement of targets. While calling on participating industries to remain committed to efforts to achieve their individual goals, Nippon Keidanren will work toward achieving the common goal for

all industries, namely "to endeavor to reduce CO_2 emissions from the industrial and energy-converting sectors in fiscal 2010 to below the level of fiscal 1990."

In fiscal 2002 Nippon Keidanren established the Evaluation Committee for the Voluntary Action Plan on the Environment consisting of outside experts to enhance the transparency and credibility of follow-up surveys. It is receiving evaluations in order to enable the industries to continue their measures within the framework of the Voluntary Action Plan over the medium and long terms (see Attachment 4).

In the fiscal 2005 Follow-up, in light of the points made by the Committee, Nippon Keidanren has worked towards improvements, including disclosure of examples of initiatives taken in the transportation, offices and household sectors and verification of the possibility of achieving the common goal for 2010. Along with continuing to improve the transparency and reliability of the Voluntary Action Plan, and working to make use of the Kyoto Mechanisms Nippon Keidanren will continue to make efforts for the achievement of the goal.

At the same time, industry will continue to contribute not only by reducing CO_2 emissions from the industrial sector, but also by further strengthening measures to reduce emissions from the transportation, offices and household sectors. Specifically, it will implement the following recommendations stated in the "Industry's Resolution on Efforts to Prevent Global Warming" announced in February 2005: 1) Development and diffusion of energy-saving products and services; 2) Horizontal coordination of CO_2 emissions reduction efforts in the transportation, office and household sectors; 3) Improvement in distribution efficiency through affiliation between cargo owners and transport companies; 4) Support for energy-saving activities by employees in their homes; and 5) Promotion of forestry maintenance activities.

Moreover, global warming is a problem that must be addressed on a global scale, and one that calls for long-term efforts. With respect to the discussions that will begin in 2005 on a new international framework beyond 2012, the participation of the United States and major developing countries such as China, which are currently not obliged to reduce CO_2 emissions, is critical. Nippon Keidanren is determined to actively participate in discussions on the new framework in collaboration with other countries' industries. In one recent development, South Korea's industry, with which Nippon Keidanren has engaged in active information exchange, decided that it will introduce a

voluntary CO_2 emissions reduction plan taking as reference the Keidanren Voluntary Action Plan on the Environment. Japanese industry will continue to make overseas contributions through its advanced technology, and to promote technological development, the key to resolution of the global warming problem.

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[1] This year the Japan Petroleum Development Association newly joined the follow-up survey. The following are the 35 participating industries in the industrial and energy-conversion sectors: Flat Glass Manufacturers Association of Japan; Japan Federation of Housing Organizations; The Communications and Information Network Association of Japan; The Japan Electronics and Information Technology Industries Association, The Japan Electrical Manufacturers' Association and The Japan Business Machine and Information System Industries Association; Japan Sugar Refiners' Association; Flour Millers Association; Japan Petroleum Development Association; Petroleum Association of Japan; Limestone Association of Japan; Japan Cement Association; The Japan Soft Drinks Association; The Federation of Electric Power Companies of Japan; Japan Aluminum Association; Japan Sanitary Equipment Industry Association; Japan Chemical Industry Association; The Japan Gas Association; Japan Federation of Construction Contractors, Japan Civil Engineering Contractors' Association and Building Contractors Society; Japan Mining Industry Association; Japan Machine Tool Builder's Association; The Japan Rubber Manufacturers Association; The Japan Society of Industrial Machinery Manufacturers; Japan Industrial Vehicles Association; Japan Automobile Manufacturers Association; Japan Auto-body Industries Association; Japan Auto Parts Industries Association; Japan Copper and Brass Association; Japan Paper Association; The Federation of Pharmaceutical Manufacturers' Associations of Japan and Japan Pharmaceutical Manufacturers Association; Japan Lime Association; The Shipbuilders' Association of Japan and the Cooperative Association of Japan Shipbuilders; The Japan Iron and Steel Federation; Japan Association of Rolling Stock Industries; The Japanese Electric Wire & Cable Makers' Association; Japan Dairy Industry Association; The Japan Bearing Industrial Association; and Brewers Association of Japan.

[2] When electric power input per unit output is used to calculate emissions for industry as a whole, Nippon Keidanren uses the following data (for all power sources at generating ends) provided by the Federation of Electric Power Companies. When not otherwise specified, electric power input per unit output cited by the respective industries is also based on data provided by the Federation of Electric Power Companies.

{For FY 1990: 3.74; FY 1997: 3.26; FY 1998: 3.16; FY 1999: 3.34; FY 2000: 3.38; FY 2001: 3.38; FY 2002: 3.62; FY 2003: 3.89; FY 2004: 3.76; FY 2010: 2.99; FY 2010 (BAU): 3.76 (t-CO_2/10,000 kWh)}.
Other conversion coefficients for energy: With respect to caloric value, Keidanren utilizes data from the following: Comprehensive Energy Statistics, the Agency of Natural Resources and Energy's "Caloric Value Table by Energy Source" (dated March 30, 2001), and survey data by the Federation of Electric Power Companies. Due to revisions of the Caloric Value Table, caloric conversion coefficients for periods prior to FY1999 differ from those for after FY2000. For carbon conversion coefficients, Keidanren uses the Environment Agency's "Report on Survey of Carbon Dioxide Emissions (1992)."

[3] The total of emissions from the energy-conversion and industrial sectors, and from industrial processes, as contained in the statistics on total CO_2 emissions for Japan, which are announced by the Ministry of the Environment.

[4] Industries review actual and forecasted figures on CO_2 emissions each year with the aim of improving the accuracy of such figures. Therefore, different numbers may appear from those cited in the previous year.

[5] BAU (Business As Usual): the amount of CO_2 emissions in FY 2010, assuming that the Voluntary Action Plan is not executed from FY 2005 on. This is estimated as an increase of approximately 14 million t-CO_2 compared to 1990.

[6] The goals of the Japan Gas Association, which defines its targets in terms of CO_2 emissions and CO_2 emission intensity; the Japan Rubber Manufacturers' Association, which defines its targets in terms of CO_2 emissions and energy consumption intensity; the Japan Soft Drinks Association and Flour Millers Association, which define their targets in terms of CO_2 emission intensity and energy consumption intensity; the Japan Machine Tool Builders' Association and the Japan Electric Wire and Cable Makers' Association, which define their targets in terms of energy consumption and energy consumption intensity, have been included among industries reporting improvements in each target.

[7] The participating industries from the offices and household sector comprise the following: Japanese Bankers Association; Japan LP Gas Association; The General Insurance Association of Japan; Japan Chain Stores Association; Japan Department Stores Association; Japan Hotel Association; Japan Foreign Trade Council, Inc.; Japan Association of Refrigerated Warehouses;

The Real Estate Companies Association of Japan; and NTT Group.
The participating industries from the transportation sector comprise the following: All Japan Freight Forwarders Association; Japan Trucking Association; The Scheduled Airlines Association of Japan; The Japanese Shipowners' Association; Japan Federation of Coastal Shipping Associations; The Association of Japanese Private Railways; and JR Freight, JR Kyushu, JR Shikoku, JR Central, JR West, JR East and JR Hokkaido.

[8] Estimates of the 2010 production were based on the common economic indicators (reference materials dated January 20, 2005, the Council on Economic and Fiscal Policy, Cabinet Office), but some industries based these forecasts on their own assumptions.

(Attachment 1)

Trends in Industrial and Energy-Conversion Sectors

(10,000 t-CO_2; 10,000 kl, crude oil equivalents)

Industry	(☆: target defined in terms of this index)	Fiscal 1990	Fiscal 1997	Fiscal 1998	Fiscal 1999	Fiscal 2000	Fiscal 2001	Fiscal 2002	Fiscal 2003	Fiscal 2004	Compared to fiscal 1990 (%)	Compared to fiscal 2003 (%)
Federation of Electric Power Companies	CO_2 emissions	27,700	29,200	28,500	30,700	31,700	31,200	34,200	36,300	36,400	+31.4%	+0.3%
	CO_2 emissions intensity ☆	1	0.88	0.85	0.89	0.90	0.90	0.97	1.04	1.00		
	Energy consumption	10,800	11,200	10,900	11,700	12,000	11,700	12,800	13,500	13,300	+23.1%	-1.5%
	Energy consumption intensity	1	0.86	0.83	0.87	0.87	0.87	0.93	0.99	0.95		
	Production activity index	1	1.20	1.21	1.24	1.27	1.25	1.28	1.27	1.31		
Portion attributed to industry: these figures are used in the calculation of the 35-industry totals below	CO_2 emissions	3,100	3,380	3,240	3,360	3,430	3,370	3,780	3,880	3,850	+24.2%	-0.8%
	Energy consumption	1,210	1,300	1,240	1,280	1,300	1,270	1,410	1,440	1,410	+16.5%	-2.1%
Petroleum Association of Japan	CO_2 emissions	3,300	4,381	4,322	4,378	4,364	4,383	4,340	4,385	4,354	+31.9%	-0.7%
	CO_2 emissions intensity	1	0.92	0.92	0.91	0.89	0.90	0.90	0.89	0.88		
	Energy consumption	1,282	1,700	1,666	1,671	1,675	1,672	1,651	1,684	1,669	+29.7%	-0.3%
	Energy consumption intensity ☆	1	0.92	0.92	0.89	0.87	0.87	0.87	0.87	0.89		
	Production activity index	1	1.44	1.42	1.47	1.48	1.48	1.47	1.50	1.50		
Japan Gas Association	CO_2 emissions ☆	116	95	91	89	84	77	84	76	76	-34.3%	+0.5%
	CO_2 emissions intensity ☆	1	0.57	0.53	0.50	0.45	0.41	0.41	0.36	0.34		
	Energy consumption	68.2	51.6	49.3	48.8	46.5	43.0	45.3	39.6	40.5	-40.6%	+2.1%
	Energy consumption intensity	1	0.53	0.50	0.47	0.43	0.39	0.38	0.32	0.31		
	Production activity index	1	1.43	1.46	1.54	1.60	1.62	1.76	1.82	1.94		
Japan Iron and Steel Federation	CO_2 emissions	19,483	19,502	18,426	18,870	18,227	17,795	18,133	18,240	18,472	-5.2%	+1.3%
	CO_2 emissions intensity	1	0.97	0.96	0.96	0.95	0.95	0.94	0.93	0.93		
	Energy consumption ☆	6,396	6,411	6,032	6,170	6,003	5,849	5,972	6,029	6,117	-4.4%	+1.4%
	Energy consumption intensity	1	0.97	0.96	0.96	0.95	0.95	0.94	0.93	0.93		
	Production activity index	1	0.92	0.81	0.88	0.96	0.91	0.98	0.99	1.01		
Japan Chemical Industry Association	CO_2 emissions	6,891	7,675	7,378	7,739	7,755	7,376	7,506	7,617	7,529	+11.2%	+0.9%
	CO_2 emissions intensity	1	0.93	0.92	0.91	0.91	0.91	0.92	0.91	0.88		
	Energy consumption	2,732	3,114	3,002	3,113	3,065	2,918	2,951	2,966	2,967	+10.4%	+1.6%
	Energy consumption intensity ☆	1	0.95	0.95	0.93	0.91	0.91	0.91	0.89	0.87		
	Production activity index	1	1.20	1.16	1.23	1.23	1.17	1.19	1.22	1.27		
Japan Paper Association	CO_2 emissions	2,533	2,578	2,592	2,630	2,707	2,616	2,637	2,633	2,584	+2.1%	-2.2%
	CO_2 emissions intensity	1	0.96	0.98	0.96	0.97	0.99	0.97	0.97	0.96		
	Energy consumption	939	943	947	957	972	931	936	926	907	-3.3%	-2.3%
	Energy consumption intensity ☆	1	0.95	0.97	0.94	0.94	0.95	0.93	0.92	0.91		
	Production activity index	1	1.06	1.04	1.09	1.10	1.04	1.07	1.07	1.07		
Cement Association of Japan	CO_2 emissions	2,743	2,781	2,480	2,465	2,474	2,376	2,249	2,186	2,108	-23.1%	-3.6%
	CO_2 emissions intensity	1	1.02	1.02	1.02	1.02	1.02	1.01	1.01	1.00		
	Energy consumption	861	851	756	747	745	714	674	652	630	-26.8%	-3.4%
	Energy consumption intensity ☆	1	0.99	0.99	0.98	0.98	0.98	0.97	0.96	0.95		
	Production activity index	1	0.99	0.89	0.88	0.88	0.85	0.81	0.79	0.77		
Japan Electrical Manufacturers' Association, Japan Electronics and Information Technology Industries Association, Communications and Information network Association of Japan, Japan Business Machine and Information System Industries Association	CO_2 emissions	1,181	1,441	1,314	1,389	1,460	1,398	1,517	1,781	1,819	+54.1%	+2.2%
	CO_2 emissions intensity ☆	1	1.02	1.01	1.05	1.03	1.11	1.19	1.36	0.69		
	Energy consumption	672	914	835	848	891	853	868	972	1,023	+52.1%	+5.2%
	Energy consumption intensity	1	1.14	1.13	1.13	1.10	1.19	1.20	1.31	0.68		
	Production activity index	1	1.19	1.10	1.12	1.20	1.06	1.08	1.11	2.24		

Industry	(☆: target defined in terms of this index)	Fiscal 1990	Fiscal 1997	Fiscal 1998	Fiscal 1999	Fiscal 2000	Fiscal 2001	Fiscal 2002	Fiscal 2003	Fiscal 2004	Compared to fiscal 1990 (%)	Compared to fiscal 2003 (%)
Japan Federation of Construction Contractors	CO_2 emissions	923	892	876	718	704	660	643	514	493	-46.6%	-4.2%
	CO_2 emissions intensity ☆	1	0.97	0.95	0.94	0.90	0.92	0.97	0.90	0.86		
	Energy consumption	429	416	409	336	324	301	286	229	223	-48.0%	-2.4%
	Energy consumption intensity	1	0.97	0.95	0.95	0.89	0.90	0.93	0.86	0.84		
	Production activity index	1	1.00	1.00	0.82	0.85	0.78	0.72	0.62	0.62		
Japan Automobile Manufacturers Association	CO_2 emissions ☆	759	695	662	641	625	585	595	579	586	-22.8%	+1.2%
	CO_2 emissions intensity	1	0.97	1.00	0.99	0.92	0.83	0.77	0.75	0.74		
	Energy consumption	410	377	357	343	333	313	316	308	314	-23.3%	+2.0%
	Energy consumption intensity	1	0.98	1.00	0.98	0.91	0.83	0.76	0.74	0.73		
	Production activity index	1	0.94	0.87	0.85	0.90	0.93	1.01	1.01	1.05		
Japan Auto Parts Industries Association	CO_2 emissions ☆	718	691	647	653	641	591	647	671	696	-3.0%	+3.8%
	CO_2 emissions intensity	1	0.94	0.93	0.91	0.86	0.81	0.83	0.81	0.80		
	Energy consumption	375	406	390	381	361	335	350	348	368	-1.9%	+5.9%
	Energy consumption intensity	1	1.05	1.07	1.02	0.93	0.87	0.86	0.81	0.81		
	Production activity index	1	1.03	0.97	1.00	1.03	1.02	1.08	1.15	1.22		
Japan Federation of Housing Organizations	CO_2 emissions ☆	538	537	508	519	497	497	487	454	447	-16.9%	-1.6%
	CO_2 emissions intensity	1	1.08	1.14	1.08	1.06	1.14	1.18	1.08	0.95		
	Energy consumption	205	204	193	169	164	164	188	175	172	-15.8%	-1.6%
	Energy consumption intensity	1	1.08	1.14	0.93	0.92	0.99	1.19	1.10	0.96		
	Production activity index	1	0.92	0.83	0.89	0.87	0.81	0.77	0.78	0.87		
Japan Mining Industry Association	CO_2 emissions	488	484	482	495	506	503	502	517	510	+4.6%	-1.3%
	CO_2 emissions intensity	1	0.92	0.93	0.90	0.87	0.88	0.90	0.91	0.93		
	Energy consumption	205	210	213	218	214	216	215	215	215	+4.9%	-0.0%
	Energy consumption intensity ☆	1	0.95	0.97	0.95	0.88	0.91	0.91	0.90	0.92		
	Production activity index	1	1.07	1.06	1.12	1.18	1.16	1.15	1.16	1.14		
Japan Lime Association	CO_2 emissions	297	240	212	225	233	209	226	232	234	-21.2%	+0.7%
	CO_2 emissions intensity	1	0.88	0.85	0.86	0.88	0.84	0.86	0.84	0.81		
	Energy consumption ☆	98.6	81.2	72.4	77.2	78.7	70.7	75.6	76.5	77.2	-21.7%	+1.0%
	Energy consumption intensity	1	0.90	0.88	0.89	0.89	0.86	0.86	0.83	0.80		
	Production activity index	1	0.91	0.84	0.88	0.89	0.83	0.89	0.94	0.98		
The Japan Rubber Manufacturers Association	CO_2 emissions ☆	195	192	188	195	190	186	200	218	222	+12.5%	+1.0%
	CO_2 emissions intensity	1	0.98	0.97	0.96	0.93	0.95	0.97	1.00	0.98		
	Energy consumption	96.0	100	99.5	100.8	95.9	94.3	98.7	104	106.8	+10.1%	+1.6%
	Energy consumption intensity ☆	1	1.03	1.05	1.01	0.95	0.98	0.97	0.97	0.96		
	Production activity index	1	1.01	0.99	1.04	1.05	1.01	1.06	1.11	1.15		
The Federation of Pharmaceutical Manufacturers' Associations of Japan Japan Pharmaceutical Manufacturers Association	CO_2 emissions ☆	158	189	191	207	207	206	211	212	238	+37.2%	+2.3%
	CO_2 emissions intensity	1	0.90	0.93	0.93	0.88	0.83	0.83	0.83	0.79		
	Energy consumption	74.6	96.8	99.1	104	102	103	103	102	116	+40.5%	+3.5%
	Energy consumption intensity	1	0.97	1.02	1.00	0.91	0.88	0.86	0.84	0.81		
	Production activity index	1	1.34	1.30	1.40	1.49	1.58	1.61	1.62	1.73		
Flat Glass Association	CO_2 emissions	178	164	145	138	135	137	133	135	135	-24.1%	-0.2%
	CO_2 emissions intensity	1	1.15	1.17	1.09	1.10	1.11	1.12	0.99	0.99		
	Energy consumption ☆	71.4	65.0	58.8	55.4	53.8	55.1	53.3	53.3	53.4	-25.2%	+0.2%
	Energy consumption intensity	1	1.14	1.18	1.10	1.10	1.11	1.12	0.97	0.97		
	Production activity index	1	0.80	0.70	0.71	0.69	0.69	0.67	0.77	0.77		

Industry	(☆: target defined in terms of this index)	Fiscal 1990	Fiscal 1997	Fiscal 1998	Fiscal 1999	Fiscal 2000	Fiscal 2001	Fiscal 2002	Fiscal 2003	Fiscal 2004	Compared to fiscal 1990 (%)	Compared to fiscal 2003 (%)
Japan Aluminum Association	CO_2 emissions	149	162	152	161	163	155	162	166	164	+10.3%	-1.1%
	CO_2 emissions intensity	1	0.94	0.95	0.94	0.93	0.97	0.96	0.95	0.93		
	Energy consumption	73.4	84.5	79.8	83.1	80.8	76.8	78.4	78.6	79.1	+7.7%	+0.6%
	Energy consumption intensity ☆	0.95	0.95	0.96	0.94	0.89	0.92	0.90	0.86	0.87		
	Production activity index	1	1.16	1.08	1.15	1.18	1.08	1.13	1.18	1.18		
Brewers Association of Japan	CO_2 emissions ☆	110	119	114	111	105	102	97.7	92.1	89.0	-20.4%	-4.8%
	CO_2 emissions intensity	1	0.99	0.95	0.91	0.87	0.84	0.83	0.84	0.80		
	Energy consumption	52.6	58.8	58.9	56.8	52.6	51.9	48.1	43.8	43.1	-19.0%	-2.9%
	Energy consumption intensity	1	1.03	1.02	0.98	0.92	0.90	0.86	0.84	0.81		
	Production activity index	1	1.09	1.09	1.10	1.09	1.09	1.06	0.99	1.00		
Japan Electric Wire and Cable Makers' Association	CO_2 emissions	100	93.3	87.7	88.2	92.4	85.9	85.2	89.2	85.5	-14.6%	-4.2%
	CO2 emissions intensity (copper/aluminum)	1	0.97	1.04	1.11	1.07	1.11	1.10	1.16	1.14		
		1	0.77	0.72	0.58	0.44	0.40	0.44	0.50	0.42		
	Energy consumption ☆	58.8	61.0	58.4	56.9	57.1	53.2	50.1	49.5	50.4	-14.3%	+1.8%
	Energy consumption intensity (copper/aluminum)	1	1.07	1.17	1.21	1.12	1.16	1.10	1.10	1.10		
	☆	1	0.85	0.81	0.63	0.46	0.40	0.42	0.46	0.39		
	Production activity index (copper/aluminum)	1	0.89	0.79	0.72	0.76	0.65	0.68	0.68	0.69		
		1	5.38	5.29	8.33	13.82	18.02	13.03	11.75	10.62		
Japan Auto-body Industries Association, Inc.	CO_2 emissions ☆	92.6	84.9	83.1	85.4	90.0	90.9	95.1	96.6	87.8	-5.2%	-9.2%
	CO_2 emissions intensity	1	0.95	0.95	0.92	0.88	0.75	0.72	0.71	0.69		
	Energy consumption	48.4	48.1	48.1	47.7	49.0	49.4	50.3	50.0	47.4	-2.0%	-5.3%
	Energy consumption intensity	1	1.03	1.05	0.99	0.92	0.77	0.73	0.71	0.72		
	Production activity index	1	0.96	0.95	1.00	1.11	1.32	1.43	1.46	1.37		
Japan Dairy Industry Association	CO_2 emissions	85.7	95.8	98.3	102	102	105	110	118	117	+36.4%	-0.6%
	CO_2 emissions intensity	1.00	0.94	0.95	0.97	1	1.02	1.13	1.11	1.11		
	Energy consumption	40.2	48.4	50.2	51.2	49.9	51.4	52.6	54.7	55.2	+37.2%	+0.6%
	Energy consumption intensity ☆	0.97	0.97	1.00	1.00	1	1.03	1.08	1.07	1.07		
	Production activity index	1	1.20	1.21	1.23	1.20	1.20	1.18	1.23	1.24		
Japan Brass Makers Association	CO_2 emissions	65.8	57.5	50.9	54.4	56.7	45.5	49.4	54.3	53.9	-14.8%	-0.8%
	CO_2 emissions intensity	1	0.88	0.84	0.87	0.85	0.89	0.88	0.93	0.92		
	Energy consumption	37.0	35.4	31.6	32.7	33.3	26.7	27.8	29.3	29.5	-18.1%	+0.9%
	Energy consumption intensity ☆	1	0.97	0.93	0.94	0.89	0.92	0.88	0.89	0.88		
	Production activity index	1	0.99	0.92	0.95	1.02	0.78	0.85	0.89	0.93		
Japan Society of Industrial Machinery Manufacturers	CO_2 emissions	63.2	57.1	50.4	49.6	51.3	49.2	50.2	52.3	55.2	-16.6%	-1.3%
	CO_2 emissions intensity ☆		1	0.97	1.08	1.07	1.14	1.15	1.24	1.05		
	Energy consumption	35.0	34.3	31.2	29.7	29.4	28.0	27.5	27.4	29.5	-19.3%	+1.0%
	Energy consumption intensity		1	1.00	1.07	1.02	1.08	1.05	1.08	1.01		
	Production activity index	1	0.98	0.89	0.79	0.82	0.74	0.75	0.72	0.80		
Japan Bearing Industrial Association	CO_2 emissions	62.3	58.7	53.8	55.1	59.9	55.4	61.1	65.4	66.3	+7.5%	+1.4%
	CO_2 emissions intensity ☆		1	0.99	0.96	0.95	1.00	0.99	1.01	0.94		
	Energy consumption	35.9	36.4	34.4	34.0	35.5	32.9	34.9	35.6	37.5	+5.6%	+5.2%
	Energy consumption intensity		1	1.02	0.96	0.91	0.95	0.91	0.88	0.86		
	Production activity index		1	0.93	0.98	1.07	0.95	1.05	1.11	1.20		

Industry	(☆: target defined in terms of this index)	Fiscal 1990	Fiscal 1997	Fiscal 1998	Fiscal 1999	Fiscal 2000	Fiscal 2001	Fiscal 2002	Fiscal 2003	Fiscal 2004	Compared to fiscal 1990 (%)	Compared to fiscal 2003 (%)
Japan Sugar Refiners' Association	CO_2 emissions ☆	58.0	48.9	47.7	47.5	49.3	48.9	46.0	48.2	44.2	-23.8%	-8.1%
	CO_2 emissions intensity	1	0.94	0.94	0.94	0.95	0.96	0.93	0.95	0.89		
	Energy consumption	24.3	22.1	21.6	21.5	22.0	21.8	20.1	21.0	19.6	-19.4%	-6.3%
	Energy consumption intensity	1	1.01	1.02	1.02	1.01	1.03	0.97	0.99	0.95		
	Production activity index	1	0.90	0.88	0.87	0.90	0.88	0.86	0.87	0.85		
Japan Sanitary Equipment Industry Association	CO_2 emissions ☆	47.9	41.6	34.9	35.6	36.5	37.3	35.4	36.4	36.3	-24.3%	-0.5%
	CO_2 emissions intensity	1	0.81	0.82	0.83	0.80	0.83	0.80	0.78	0.73		
	Energy consumption	22.4	21.4	18.3	18.4	18.3	18.2	17.0	16.9	16.8	-25.0%	-0.3%
	Energy consumption intensity	1	0.89	0.91	0.91	0.86	0.86	0.82	0.77	0.73		
	Production activity index	1	1.08	0.89	0.89	0.95	0.94	0.93	0.98	1.03		
The Japan Soft Drinks Association	CO_2 emissions	46.0	65.6	67.8	74.1	80.3	83.5	86.7	91.3	96.5	+109.3%	+4.5%
	CO_2 emissions intensity ☆	1	0.98	0.99	1.02	1.07	1.05	1.10	1.11	1.08		
	Energy consumption	20.3	30.7	32.5	35.5	38.1	39.9	41.2	42.8	45.5	+122.9%	+5.1%
	Energy consumption intensity ☆	1	1.04	1.07	1.10	1.15	1.13	1.18	1.18	1.15		
	Production activity index	1	1.45	1.49	1.58	1.63	1.73	1.72	1.79	1.95		
Limestone Association of Japan	CO_2 emissions	45.4	42.0	39.9	40.6	41.7	41.3	39.1	36.5	35.6	-21.6%	-2.3%
	CO_2 emissions intensity	1	0.90	0.95	0.97	0.97	0.98	0.94	0.97	0.96		
	Energy consumption	22.6	22.0	21.1	20.9	20.9	20.6	19.0	17.2	17.1	-24.1%	-0.7%
	Energy consumption intensity ☆	1	0.96	1.01	1.02	0.99	0.99	0.92	0.92	0.93		
	Production activity index	1	1.02	0.93	0.91	0.94	0.92	0.91	0.82	0.81		
Japan Machine Tool Builders' Association	CO_2 emissions	23.1	20.9	22.9	20.1	20.7	19.5	18.4	20.4	22.7	-1.7%	+11.2%
	CO_2 emissions intensity		1	1.01	1.19	1.08	1.07	1.37	1.24	1.03		
	Energy consumption ☆	14.5	14.5	16.3	13.7	14.1	13.3	11.9	12.5	14.2	-2.3%	+13.0%
	Energy consumption intensity ☆		1	1.04	1.17	1.06	1.06	1.29	1.10	0.92		
	Production activity index	1	1.00	1.09	0.81	0.91	0.87	0.64	0.79	1.06		
Flour Millers Association	CO_2 emissions	17.0	18.7	18.1	18.7	19.2	19.0	20.4	22.6	21.4	+25.7%	-5.5%
	CO_2 emissions intensity ☆	1	1.00	0.92	0.95	0.97	0.96	1.03	1.12	1.07		
	Energy consumption	10.8	12.6	12.9	12.7	12.5	12.4	12.5	13.0	12.7	+17.6%	-2.4%
	Energy consumption intensity ☆	1	1.06	1.04	1.02	0.99	0.98	1.00	1.02	1.00		
	Production activity index	1	1.10	1.15	1.16	1.17	1.16	1.16	1.19	1.17		
Japan Shipbuilders' Association of Japan (A) The Cooperative Association of Japan Shipbuilders (B)	CO_2 emissions	15.0	19.2	18.0	18.7	18.3	18.2	24.2	26.0	26.7	+77.2%	+2.7%
	CO2 emissions intensity (A)	1	0.88	0.80	0.77	0.73	0.74	1.01	0.98	0.84		
						1	1.23	1.22	1.29	1.18		
	Energy consumption	9.8	14.3	13.9	13.6	12.6	12.5	15.6	15.5	16.5	+68.2%	+6.2%
	Energy consumption intensity (A) ☆	1	0.96	0.91	0.81	0.88	0.90	0.95	0.98	0.90		
	☆	1	0.92	0.97	0.88	0.87	0.88	0.87	0.89	0.88		
	Production activity index (A)	1	1.45	1.50	1.62	1.42	1.40	1.40	1.55	1.83		
	Production activity index (B)					1	0.77	0.85	0.86	1.12		
Japan Industry Vehicles Association	CO_2 emissions ☆	6.1	6.1	5.7	6.2	6.1	5.4	5.8	6.0	6.1	-0.6%	+0.8%
	CO_2 emissions intensity	1	1.23	1.48	1.56	1.38	1.35	1.42	1.39	1.25		
	Energy consumption	3.2	3.5	3.3	3.4	3.4	3.0	3.1	3.2	3.3	+0.9%	+3.0%
	Energy consumption intensity	1	1.33	1.62	1.63	1.45	1.44	1.46	1.38	1.27		
	Production activity index	1	0.81	0.63	0.65	0.72	0.65	0.66	0.71	0.82		

Industry	(☆: target defined in terms of this index)	Fiscal 1990	Fiscal 1997	Fiscal 1998	Fiscal 1999	Fiscal 2000	Fiscal 2001	Fiscal 2002	Fiscal 2003	Fiscal 2004	Compared to fiscal 1990 (%)	Compared to fiscal 2003 (%)
Japan Association of Rolling Stock Industries	CO_2 emissions ☆	4.3	3.4	3.2	3.3	3.2	3.2	3.0	3.1	3.2	-16.2%	+2.8%
	CO_2 emissions intensity	1	0.81	0.77	0.70	0.74	0.77	0.64	0.66	0.53		
	Energy consumption	2.4	2.0	2.0	2.0	1.9	1.9	1.7	1.7	1.8	-18.4%	+5.7%
	Energy consumption intensity	1	0.89	0.88	0.78	0.79	0.83	0.67	0.66	0.51		
	Energy consumption intensity	1	0.96	0.96	1.08	1.01	0.95	1.07	1.07	1.59		
Japan Petroleum Development Association	CO2 emissions	12.0	13.2	13.3	11.9	13.4	11.7	1.37	1.27	13.2	+10.2%	+4.4%
	CO2 emissions intensity ☆	1	0.86	0.89	0.81	0.84	0.74	0.82	0.70	0.70		
	Energy consumption	5.8	6.7	6.7	6.2	6.7	6.1	6.8	6.4	6.80	+17.6%	+7.4%
	Energy consumption intensity	1	0.90	0.93	0.87	0.87	0.80	0.85	0.72	0.75		
	Energy consumption intensity	1	1.28	1.25	1.23	1.33	1.32	1.39	1.52	1.57		
Emissions from industrial processes	CO_2 emissions	6,040	5,897	5,281	5,271	5,324	5,159	5,033	4,973	4,962		
Revisions	CO_2 emissions	-75	-327	-334	-259	-254	-242	-173	-89	-140		
	Energy consumption	-155	-167	-142	-144	-226	-210	-202	-212	-228		
Total	CO_2 emissions	50,555	52,481	49,649	50,692	50,301	48,847	49,739	50,239	50,199	-0.5%	+0.1%
	Energy consumption	16,637	17,790	16,955	17,154	16,956	16,416	16,703	16,831	16,935	+2.0%	+0.8%

* "Emissions from industrial processes" refers to CO_2 emitted by non-energy sources in the course of the manufacturing process.

* Total CO_2 emissions and energy consumption for the 35 industries are calculated on the basis of "generating end" electric power input per unit output for the respective industries on a fiscal year basis. On the other hand, in follow-up surveys, industries may also choose to report emissions in terms of "demand end" electric power input per unit output or fixed (the ratio in fiscal 1990) electric power input per unit output (as have the Japan Gas Association, Japan Iron and Steel Federation, Japan Electrical Manufacturers' Association, Japan Electronics and Information Technology Industries Association, Communications and Information Network Association of Japan, Japan Business Machine and Information System Industries Association, Japan Automobile Manufacturers Association, Japan Mining Industry Association, and Japan Machine Tool Builders' Association). Revisions are defined as the differences between the totals of data submitted by industries and the totals of the revised industry figures.

* Due to a revision of the Caloric Value Table, calculations of emissions from fiscal 2000 on are based on different heat conversion coefficients from those used through fiscal 1999.

* In cases where an industry uses a year other than fiscal 1990 as the base year, intensity indexes are calculated based on figures for the base year used by that industry (The Japan Bearing Industrial Association and Japan Machine Tool Builders' Association use fiscal 1997 as the base year, Japan Dairy Industry Association uses fiscal 2000 as the base year, and Japan Aluminum Association uses fiscal 1995 as the base year for the energy consumption intensity index).

(Attachment 2)

Industry Trends in the Transportation, Offices and Household Sector

Offices and household sector

(10,000 t-CO2; 10,000 kl, crude oil equivalents)

Industries	(☆: has target defined in terms of this index)	Fiscal 1990	Fiscal 1997	Fiscal 1998	Fiscal 1999	Fiscal 2000	Fiscal 2001	Fiscal 2002	Fiscal 2003	Fiscal 2004	Compared to fiscal 1990 (%)	Compared to fiscal 2003 (%)
Japan Association of Refrigerated Warehouses	CO_2 emissions	55.7	57.9	57.9	61.5	61.3	62.3	66.2	70.3	70.2	+26.1%	-0.1%
	CO_2 emissions intensity	1	0.82	0.80	0.84	0.83	0.85	0.91	0.96	0.96		
	Energy consumption	36.2	43.1	44.6	44.7	42.2	42.9	42.5	42.0	43.3	+19.7%	+3.3%
	Energy consumption intensity ☆	1	0.94	0.95	0.93	0.88	0.90	0.89	0.88	0.91		
	Production activity index	1	1.27	1.30	1.32	1.32	1.32	1.31	1.32	1.31		
Japan LP Gas Association	CO_2 emissions	4.3	4.0	3.8	4.0	4.0	4.0	4.1	4.4	4.3	+0.0%	-2.1%
	CO_2 emissions intensity	1	0.84	0.82	0.86	0.85	0.88	0.93	0.99	1.00		
	Energy consumption	2.8	3.0	2.9	2.9	2.8	2.8	2.7	2.6	2.7	-5.1%	+1.2%
	Energy consumption intensity ☆	1	0.96	0.97	0.96	0.90	0.93	0.91	0.91	0.95		
	Production activity index	1	1.09	1.06	1.07	1.09	1.05	1.03	1.03	1.00		
The Real Estate Companies Association of Japan	CO_2 emissions intensity	1	0.92	0.94	0.96	0.96	0.96	1.00	1.03	1.01		
	Energy consumption intensity ☆	1	1.06	1.11	1.10	1.11	1.12	1.15	1.07	1.05		
The General Insurance Association of Japan	CO_2 emissions					3.6	4.3	4.1	4.1	3.8		-7.9%
	Energy consumption					2.4	2.6	2.4	2.3	2.2		-5.9%
NTT Group	CO_2 emissions ☆	169	199	204	228	266	273	288	292	319	+88.8%	+5.9%
	CO_2 emissions intensity	1	0.78	0.77	0.81	0.86	0.86	0.97	0.97	1.09		
	Energy consumption					144	155	172	189	189 *	+31.8%	+4.0%
	Energy consumption intensity					1	1.05	1.25	1.36	1.39		
	Production activity index	1	1.51	1.56	1.67	1.83	1.87	1.75	1.77	1.73		
Japan Foreign Trade Council, Inc.	CO_2 emissions ☆			5.8	5.9	5.8	5.6	5.8	5.8	5.6 *	-4.2%	-12.5%
	Energy consumption			4.3	4.2	3.9	3.8	3.6	3.4	3.3	-23.4%	-10.6%

Transportation sector

(10,000 t-CO2; 10,000 kl, crude oil equivalents)

Industries	(☆: has target defined in terms of this index)	Fiscal 1990	Fiscal 1997	Fiscal 1998	Fiscal 1999	Fiscal 2000	Fiscal 2001	Fiscal 2002	Fiscal 2003	Fiscal 2004	Compared to fiscal 1990 (%)	Compared to fiscal 2003 (%)
The Scheduled Airlines Associations of Japan	CO_2 emissions intensity ☆	1	0.91	0.90	0.89	0.90	0.89	0.88	0.88	0.88		
The Japanese Shipowners' Association	CO_2 emissions	3,824	4,286	4,364	4,539	4,708	4,562	4,522	4,757	5,191	+35.7%	+9.1%
	CO_2 emissions intensity ☆	1	0.86	0.90	0.84	0.85	0.85	0.80	0.78	0.81		
	Energy consumption intensity	1	0.86	0.90	0.84	0.85	0.85	0.80	0.77	0.81		
	Production activity index	1	1.30	1.27	1.41	1.44	1.40	1.48	1.60	1.67		
Japan Federation of Coastal Shipping Associations	CO_2 emissions	870	904	876	886	919	934	895	854	787	-8.9%	-7.9%
	CO_2 emissions intensity	1	1.08	1.10	1.09	1.08	1.08	1.08	1.10	1.02		
	Energy consumption	318	330	320	323	335	340	326	311	287	-9.2%	-7.8%
	Energy consumption intensity ☆	1	1.08	1.09	1.09	1.08	1.08	1.07	1.10	1.02		
	Production activity index	1	0.96	0.92	0.93	0.98	0.99	0.96	0.89	0.89		
Japan Trucking Association	CO_2 emissions	*4 *4,587*	4,628	4,546	4,630	4,772	4,733	4,780				
	CO_2 emissions intensity ☆	*1*	0.99	0.98	0.96	0.95	0.93	0.93				
	Energy consumption	*1,724*	1,739	1,708	1,740	1,793	1,778	1,796				
	Energy consumption intensity	*1*	0.99	0.98	0.96	0.95	0.93	0.93				
	Production activity index	*1*	1.01	1.01	1.05	1.10	1.11	1.12				
All Japan Freight Forwarders Association	CO_2 emissions ☆			15.2			14.6	14.6	14.6	14.5 *	-4.7%	-0.1%
	Energy consumption			5.7			5.5	5.5	5.5	5.5	-4.7%	-0.1%
Non-governmental Railways Association	CO_2 emissions ☆	221	214	208	224	227	226	245	265	255	+15.5%	-3.8%
	CO_2 emissions intensity	1	0.86	0.84	0.90	0.89	0.89	0.95	1.02	1.07		
	Energy consumption	144	159	161	163	156	156	157	158	158	+9.6%	-0.5%
	Energy consumption intensity	1	0.99	1.00	1.00	0.94	0.94	0.94	0.94	1.01		
	Production activity index	1	1.12	1.12	1.13	1.15	1.16	1.16	1.17	1.08		

Note 1: The table presents data on CO_2 emissions, energy consumption, and CO_2 emissions intensity and energy consumption intensity that has been provided to Nippon Keidanren by industries in the transportation, offices and household sectors.

Note 2: Due to a revision of the Caloric Value Table, calculations of emissions from fiscal 2000 on are based on different heat conversion coefficients from those used through fiscal 1999.

Note 3: NTT Group uses fiscal 2000 as their base year for calculating change in energy consumption. Japan Foreign Trade Council and All Japan Freight Forwarders Association use 1998 as their base year for calculating change in CO_2 emissions and energy consumption.

Note 4: Japan Trucking Association uses fiscal 1996 as their base year, and their figures listed under fiscal 1990 represent actual figures for 1996.

(Attachment 3)

International Comparison of Energy Efficiency in Participating Industries

○ Electric Power (Federation of Electric Power Companies)

Fossil-fired power generation efficiency (electric power output per unit of energy input)

Japan	U.K.	Nordic countries	U.S.A.	Germany	France	China	India
100	99	101	117	117	122	130	152

Source : Data for foreign countries from ECOFYS, *UPDATED COMPARISON OF POWER EFFICIENCY ON GRID LEVEL,* March 2005.
The lower the number, the larger the amount of electricity produced per unit of energy input.

Comparison of CO_2 emissions intensity for the electric power industry ("generating-end")

Japan	France	Canada	Italy	Germany	U.K.	U.S.A.
100	15	54	110	118	121	149

Source: Energy Balances of OECD Countries 2002-2003; The figure for Japan is based on a survey by the Federation of Electric Power Companies of Japan
CO2 emissions intensity is low for France because 80 percent of its electric power is produced through nuclear power generation, and for Canada because 60 percent of its electric power comes from hydroelectric power generation.

○ Oil (Petroleum Association of Japan)

Energy consumption index of refineries (2002)

Japan	Advanced Asian countries (excluding China)	Western Europe	U.S.A. and Canada
100	101	102	113

Source: Data from the results of a survey by Solomon Associates Ltd.
This is a comparison of "energy intensity index," which is Solomon Associates' proprietary benchmarking method. The index is based on throughput equivalents, which is similar in nature to the index used by the oil industry in its voluntary action plan (energy consumption intensity at oil refineries). A lower number indicates higher efficiency.

○ Iron and Steel (Japan Iron and Steel Federation)

Integrated steelworks energy consumption intensity

Japan	South Korea	EU	U.S.A.	China (large scale)	China (whole country)
100	105	110	120	130	150

Source : Data from Korea Iron & Steel Association, China Iron and Steel Industries Association, and individual interviews

○ Chemicals (Japan Chemical Industry Association)

CO_2 emissions intensity in relation to ethylene production

Japan	Europe	U.S.A.	Global
100	129	100	121

Electric power consumed in relation to production of electrolytic caustic soda

Japan	Taiwan	South Korea	China	U.S.A.	Western Europe	Eastern Europe
100	100	102	109	112	120	123

Source : SRI Chemical Economic Handbook; Japan Soda Industry Association, *Soda Handobukku* (Soda Handbook)

○ Paper (Japan Paper Association)

Total energy consumption for paper and paperboard produced (before adjustments for imported and exported pulp)

Japan	U.S.A.	Canada	Sweden	Germany
100	144	134	123	52

Source: Data for Japan from Japan Paper Association follow-up report for 2003, "Sekiyuto shouhi dotai tokei"; for U.S.A. from the American Forest & Paper Association's annual statistics for 2002; for Canada from Forest Product Association of Canada, *Environmental Report 2000-2001;* for Sweden and Germany from Confederation of European Paper Industries, *Energy Profile 2001.*
Since Germany relies largely on recycled pulp and imported pulp, its energy consumption related to pulp production is low. In addition, demand for quality such as whiteness of toilet paper is relatively low in Germany, which can also be considered a factor contributing to low energy consumption.

○ Cement (Cement Association of Japan)

Energy consumption per clinker ton (for 2000)

Japan	Western Europe	South Korea	Central and South	China	U.S.A.	Russia
100	130	131	145	152	177	178

Source: Battelle, *Toward a Sustainable Cement Industry Substudy 8: CLIMATE CHANGE* , 2002.

○ Mining (Japan Mining Industry Association)

Energy consumption intensity of copper refineries

Japan	Europe	Asia	North America	South America
100	133	143	154	202

Source: Sample data collected through interviews. Comparison is of energy consumption intensity (MJ/ton) of copper refineries

○ Aluminum (Japan Aluminum Association)

Energy consumption in the plate rolling process

Japan	Global
100	127

Source: International Aluminium Institute, *LCI Report* ; Japan Aluminium Association, *LCI Report*

(Attachment 4)

Evaluation Committee for the Voluntary Action Plan on the Environment

1. Establishment July 23, 2002

2. Objectives

(1) To confirm that follow-up surveys for the Voluntary Action Plan on the Environment (Measures against Global Warming) are performed properly and to evaluate their transparency and credibility from an independent standpoint.

(2) To identify areas for improvement regarding the follow-up surveys for the Keidanren Voluntary Action Plan on the Environment (Measures against Global Warming), so as to contribute to further improving transparency and credibility.

3. Results of activities

The evaluation of the past three follow-up surveys (fiscal 2002, fiscal 2003, and fiscal 2004) was conducted from the following perspectives.

(1) To assess whether the processes for the collection, aggregation and reporting of data by the industries participating in the follow-up surveys, and the aggregation of the data reported by the participating industries, were implemented properly.

(2) With respect to the follow-up system as a whole, to make recommendations concerning aspects that should be improved in order to increase transparency and credibility.

A Voluntary Action Plan Evaluation Report was prepared and released to the public three times in March 2003, April 2004, and April 2005.

4. Composition of the Evaluation Committee

Chairman: Mitsutsune Yamaguchi (Professor, Faculty of Economics, Teikyo University)
Members: Tadashi Aoyagi (Director, Mitsubishi Research Institute Inc.)
Kiyoe Asada (President, Women's Energy Network)
Yoji Uchiyama (Professor, Graduate School of Systems and Information Engineering, Institute of Engineering Mechanics and Systems, University of Tsukuba)
Hiroyuki Sato (Director-General, Green Purchasing Network)
Takuya Negami (Adviser, Kobe Steel, Ltd.)

<Matters pointed out in the fiscal 2004 Voluntary Action Plan Evaluation Report and the status of how they are being addressed in the fiscal 2005 follow-up>

Category	Matters pointed out	How they are being addressed
1. Target setting	Some industries still do not provide any explanation on the reasons for the selection of target indicators and the bases for numerical targets.	Planned to be addressed in accordance with the "Industry-Specific Reports" of the follow-up survey results.
	Going forward, if an industry is going to consider revising its targets, it needs to fully explain the reasons for the revision and the validity of new indices or targets. In addition, Nippon Keidanren should examine the possible establishment of a uniform policy regarding target revision.	When an industry revises its targets, the reasons for the revision and the validity of the new targets are planned to be listed in the "Industry-Specific Reports" of the follow-up survey results. A uniform policy for Nippon Keidanren will be studied in the future.
	Continued examination must be made in order to improve the methods of verifying the relationship between the Voluntary Action Plan's overall target and individual industry targets, as well as the probability of achieving the aggregate target.	An estimation method that uses emissions forecasts of major industries has been adopted. The prospects for target achievement and measures to be enhanced in the future are planned to be described in the "Industry-Specific Reports" of the follow-up survey results.
2. Fiscal 2010 forecasts	If an industry does not use the common indicators as the economic indicators on which CO_2 emissions forecasts for fiscal 2010 are based, it should at least explain the reasons for the selection of its indicators. In addition, such an industry must clarify the bases of its forecasts of production value and volume, which form the foundation of forecasts for fiscal 2010 emissions.	Planned to be addressed in accordance with the "Industry-Specific Reports" of the follow-up survey results.
	The number of credits expected to be obtained through Kyoto Mechanism-based projects should be disclosed whenever possible.	Planned to be addressed in accordance with the "Industry-Specific Reports" of the follow-up survey

		results. Principal examples are on p. 8 and 9.
3. Factor analysis	The results of analyses of changes in intensity indices adopted by individual industries should be explained by each industry.	Planned to be addressed in accordance with the "Industry-Specific Reports" of the follow-up survey results.
	In order to facilitate the cost-effective reduction of greenhouse gases, cost evaluation of voluntary action plans should be carried out.	Planned to be addressed in accordance with the "Industry-Specific Reports" of the follow-up survey results.
4. Enhancement of measures in transportation, offices and households sectors	Measures to quantitatively assess and reduce emissions resulting from the business operations and transportation activities of companies in the industrial and energy-converting sectors are needed.	Planned to be addressed in accordance with the "Industry-Specific Reports" of the follow-up survey results. Principal examples are on p. 4 and 5.
	Efforts should be made to reduce emissions by accurately assessing the state of actual emissions of participating industries in the transportation, offices and household sectors and by setting reasonable targets.	Planned to be addressed in accordance with the "Industry-Specific Reports" of the follow-up survey results.
	Although 23 industries and companies from the transportation, offices and households sectors participated in the follow-up, their emissions account for only a small portion of these sectors' total emissions. It is necessary to increase the number of participating industries.	Continued efforts will be made to increase the number of participating companies.
	With respect to the quantitative assessment of emissions from the production, transport, use, recycling, and other stages of a product, in the medium term a uniform method for quantitative assessment should be established and shared among participating members. At the same time, each industry needs to provide	Planned to be addressed in accordance with the "Industry-Specific Reports" of the follow-up survey results. The possibility of establishing a uniform assessment method will continue to be examined.

	information on its activities.	
5. Survey Method	Boundary adjustments have been pointed out as necessary to eliminate overlaps between participating industries, but some industries, including those with fields that are not covered by the follow-up survey, still have not checked whether or not they need to make adjustments. All industries should be urged to check their boundaries.	Each industry will check the matters pointed out, and results are planned to be included in the "Industry-Specific Reports" of the follow-up survey results.
	Although it has been pointed out that in principle the scope of follow-ups should be limited to companies actually participating in surveys, four industries still include estimated figures for non-participating companies.	Each industry will make efforts to follow the principle, and the scope of companies covered by each industry is planned to be stated in the "Industry-Specific Reports" of the follow-up survey results.
	Further improvements are necessary in the international comparison of energy efficiency to ensure credibility and objectivity. For example, international comparison data compiled by third parties such as independent research institutions should be provided.	Planned to be addressed in accordance with the "Industry-Specific Reports" of the follow-up survey results. Principal examples are in Attachment 3 (p. 21).

Reference: The Formulation of the Keidanren Voluntary Action Plan on the Environment: History and Aims

1. History

A step ahead of the Earth Summit in 1992, Nippon Keidanren (then known as Keidanren) formulated the Keidanren Global Environment Charter in 1991. Guided by a basic philosophy that the addressing of environmental problems is essential to corporate existence and activity, it proclaimed a course of voluntary and active efforts directed at environmental conservation.

In order to link the philosophy of the Global Environment Charter to concrete action, in 1996 the Keidanren Appeal on the Environment was announced. With respect to measures to counter global warming, Nippon Keidanren then announced the formulation of a voluntary action plan to promote practical and effective efforts by the business community.

This led to the formulation of the Keidanren Voluntary Action Plan on the Environment (renamed the Voluntary Action Plan on the Environment in fiscal 2002) in the following year, 1997. Today, 57 industrial organizations and companies are participating in the plan, through which they are actively addressing not only global warming but also the problem of waste. With respect to measures to counter global warming, the uniform goal is the "reduction of CO_2 emissions from participating industries in the industrial and energy-conversion sectors in fiscal 2010 to below the levels of fiscal 1990."

2. Goals

The causes of long-term environmental problems that occur globally, such as global warming, are to be found in business activities of all kinds and in many aspects of our daily lives. In consequence, they cannot be addressed by restricting activities uniformly, and it is also difficult to deal with them adequately through conventional means such as regulations and the levying of taxes and charges. In view of this, in place of the conventional regulatory measures that have been effective in the past, such as the anti-pollution measures of the 1970s, today it is to voluntary efforts that we must look to have an impact on problems occurring on a global scale. The rationale underlying voluntary efforts is that they constitute the most effective countermeasures, because business people themselves, who have the best grasp of the actual situation in each industry, can take technical trends and other factors affecting management judgments comprehensively into consideration, and draft and implement the most cost-effective measures. In addition, Nippon Keidanren conducts a follow-up every year of the state of progress of the Voluntary Action Plan on the Environment, and releases its finding publicly through the Internet and other means.

Therefore, the Voluntary Action Plan on the Environment comprises four steps that are repeated each year: (1) the setting of targets; (2) the implementation of efforts to attain those targets; (3) the regular follow-up of the state of progress of those efforts; and (4)

the public disclosure of the follow-up results through the Internet and other means. This mechanism spurs continuous improvements, and is able to prevent the non-achievement of targets.

The Japanese government's Kyoto Protocol Target Achievement Plan positioned the Keidanren Voluntary Action Plan on the Environment as the plan that will play a central role in the industrial and energy-converting sectors' efforts toward the achievement of targets. It praised the Voluntary Action Plan stating that the merits of voluntary approaches is that they do not involve procedural costs and each entity can develop its own outstanding measures through original and innovative efforts. The hope that companies will take further advantage of these merits in their own voluntary action plans was also expressed.

The progress of the voluntary action plans is reviewed annually by the relevant government councils, and reports are also made to joint meetings of the councils concerned with domestic measures to address global warming.

3. Future Policy

Nippon Keidanren will continue to require the participating industries to ensure the steady implementation of the plan's countermeasures, and to devote its full energies to the achievement of its overall uniform goals. It will also maintain its efforts to ensure a continuous improvement in transparency and credibility on the basis of the reports of the Evaluation Committee for the Voluntary Action Plan on the Environment.

For their part, companies will expedite their voluntary efforts, not only undertaking measures relating to their own business activities, but also contributing to problem-resolution both within Japan as a whole and globally.

[Addendum: Measures on Waste]

When the Keidanren Voluntary Action Plan on the Environment was formulated in 1997, waste-related measures were included as another core component. Targets were laid down for individual industries, and measures undertaken on a voluntary basis were promoted. In 1999, Keidanren laid down a uniform target for the entire industrial sector of 15 million tons (25% of the amount in fiscal 1990) as the quantity of final disposal of industrial waste in fiscal 2010. Follow-up surveys of the state of progress towards achieving that target are conducted annually.

Reference: Basic Thinking on the Problem of Global Warming

1. Industry Measures to Address Global Warming

(1) Measures to address global warming should principally be through voluntary efforts

At present, 57 industrial organizations and companies participate in the Keidanren Voluntary Action Plan on the Environment, engaging in vigorous efforts to address global warming. Among these, 34 industries in the industrial and energy-conversion sectors have laid down a uniform target of reducing CO_2 emissions in fiscal 2010 to below their fiscal 1990 levels. Industrial output increased in fiscal 2003 as a result of the economic recovery in Japan, but in spite of this the volume of CO_2 emissions declined by 0.6% relative to their fiscal 1990 level. This was because of steady progress in increasing CO_2 emissions intensity and energy consumption intensity and in the shift to less carbon-intensive forms of energy. Voluntary efforts should continue to form the core of industry measures to address global warming.

(2) Mechanisms to enhance transparency and credibility

Each year Nippon Keidanren implements detailed follow-up surveys of the state of progress being made in voluntary action plans in individual industries, and releases its findings widely through the Internet and other media. In addition, the relevant government councils conduct annual reviews of the progress being made in each industry, and the results of those are reported to joint meetings of the councils concerned with domestic measures to address global warming.

The Evaluation Committee for the Voluntary Action Plan on the Environment was established in July 2002 for the purpose of ensuring that the industrial community continues its efforts within the framework of the Voluntary Action Plan over the medium and long term, while enhancing its transparency and credibility. Since the fiscal 2003 follow-up, the content of the plan has been improved on the basis of the committee's reports.

(3) The contribution of technological development

The development of technologies constitutes the key to countering global warming over the long term, and industry will therefore continue to contribute by means of technological development. Since the oil crises the Japanese industrial sector has already achieved energy savings of more than 20%, which is very high relative to savings made by other countries. Therefore, to cut CO_2 emissions still further it is essential not only to fully mobilize existing technologies, including in the field of nuclear power, but also to undertake innovative technological development. To ensure the compatibility of economic activity and the environment, it is incumbent upon the government to give technologies to counter global warming a pivotal status in Japan's national technology-development strategy, and to provide assistance over the medium to long term to stimulate private-sector technology development.

(4) Promotion of nuclear energy

Promoting the use of nuclear power generation, which emits no CO_2, is the most important issue for addressing global warming. Efforts to promote the use of nuclear energy must be pursued, backed by the devotion of maximum efforts by industry, the national government and local governments, to ensure its safety, and by the publication of more information so as to gain the understanding of the public.

2. Measures by the Transportation, Offices and Households Sector to Address Global Warming

The sectoral breakdown in the Ministry of the Environment's preliminary report for CO_2 emissions in fiscal 2003 shows that the CO_2 emissions of the energy-conversion and industrial sectors have remained relatively static from fiscal 1990, but those in the offices and households sector have risen by 33% and nearly 20% respectively relative to fiscal 1990; in fiscal 2003 they accounted for approximately 50% of all emissions in Japan.

The industrial sector is endeavoring to reduce emissions from offices and distribution activities, and through the supply of energy-saving products, information and services it is also making vigorous efforts to cut emissions in the offices and households sector.

Nevertheless, the prerequisite for finding the solution to the problem of global warming is for every citizen to take voluntary action on their own initiative. It is incumbent upon the government to supply appropriate information in order to give a strong stimulus to people's attitudes towards voluntary behavior, and to quickly implement activities that will bring about those voluntary actions on the part of individual citizens. For that purpose the government administration must first take initiatives and set an example.

3. Domestic Systems

(1) The advantages of voluntary efforts are undermined by basing plans on formal agreements or making them obligatory

Countries such as the United Kingdom have been introducing a system of concluding agreements between the government and industries and companies to address the prevention of global warming, and it has been argued that Japan should do likewise. However, experience shows that there would be a strong risk that agreements in Japan would be highly inflexible and restrictive in character and would be unilateral. If global warming countermeasures were to be codified in agreements of that kind, the advantage of flexibility inherent in the current voluntary efforts would risk being lost, and therefore it is a step that should not be adopted without adequate consideration.

It is also argued that the formulation of action plans should be made compulsory. However, the most effective way of taking steps in the industrial sector to restrain emissions of greenhouse gases is for business people themselves, who are in the best

position to grasp the true situation in each industry, to formulate and implement action plans voluntarily. Making this process compulsory would be undesirable, since it would markedly undermine the benefits of voluntary efforts.

(2) Domestic emissions trading premised on compulsory emission limits is inappropriate

The building of a system for domestic emissions trading premised on the allocation of compulsory emission limits has the strong character of a controlled economy and thus has no place in a market economy, and it would be difficult to ensure fairness in the apportionment of the limits. For reasons such as these, such a move would be inappropriate. Also, in Japan's case in particular the level of energy-saving in companies is high, and therefore there is not expected to be scope for unused emission credits to be released into the domestic market.

(3) Emphatic opposition to the introduction of environmental taxes

The introduction of environmental taxes (including a carbon tax and carbon-energy tax) has been mooted as a means of restraining CO_2 emissions. However, global warming is a problem that is closely linked with people's daily lives and with economic activity, and therefore the voluntary participation and cooperation of the people as a whole is a prerequisite for addressing it. The introduction of environmental taxes would not provide a route towards resolving the problem.

There can be no expectation that the environmental taxes currently being proposed by the Ministry of the Environment and others would have the effect of curbing CO_2 emissions. What is more, they would dampen the present full-fledged economic recovery and would hamper industrial activity. New taxes and tax increases would undermine the international competitiveness of manufacturing industry, cause the hollowing-out of domestic industry, and have a serious impact on employment. Additionally, there is the risk that the shift of manufacturing overseas from a country that has achieved the world's highest level of energy efficiency would have the effect of ultimately increasing the volume of emissions of greenhouse gases globally.

In addition, fossil fuels are already subject to a variety of energy taxes such as the petroleum and coal tax introduced in October 2003. The introduction of a new tax would impose multiple taxes on manufacturing industry and thereby place a more excessive burden on it.

The vitality of the companies conducting the technological development that constitutes the key to resolving the problem of global warming must not be diminished, and it is impermissible to alter the lifestyles of the people of the country through ill-considered tax increases. Instead of introducing environmental taxes, progress must be made with the study of genuinely effective measures to address global warming.

4. Global Strategies

(1) The international framework from 2013

The problem of global warming is global in scale, and thus it is essential to create a framework for reducing greenhouse gases in which all countries and regions participate. All countries, including the United States, the world's largest source of emissions, and the developing countries, whose emissions are projected to increase substantially as they undergo population growth and economic development, must study a realistic and flexible framework for the period from 2013: one that ensures the compatibility and coexistence of the environment and economic activity.

(2) Positive use of the Kyoto Mechanism

The Kyoto Mechanism is an effective option through which to achieve the targets of the Kyoto Protocol while seeking harmony between the environment and economic activity. For this it is essential to put international rules firmly into place at an early date. For the mechanism to be effective it is vital to have the voluntary participation of the private sector, and for that it will be necessary to build a framework that facilitates that participation, including simpler procedures and more clearly defined rights to credits obtained.