

**Results of the Fiscal 2003 Follow-up
to the Keidanren Voluntary Action Plan on the Environment**
—Section on Global Warming Measures—

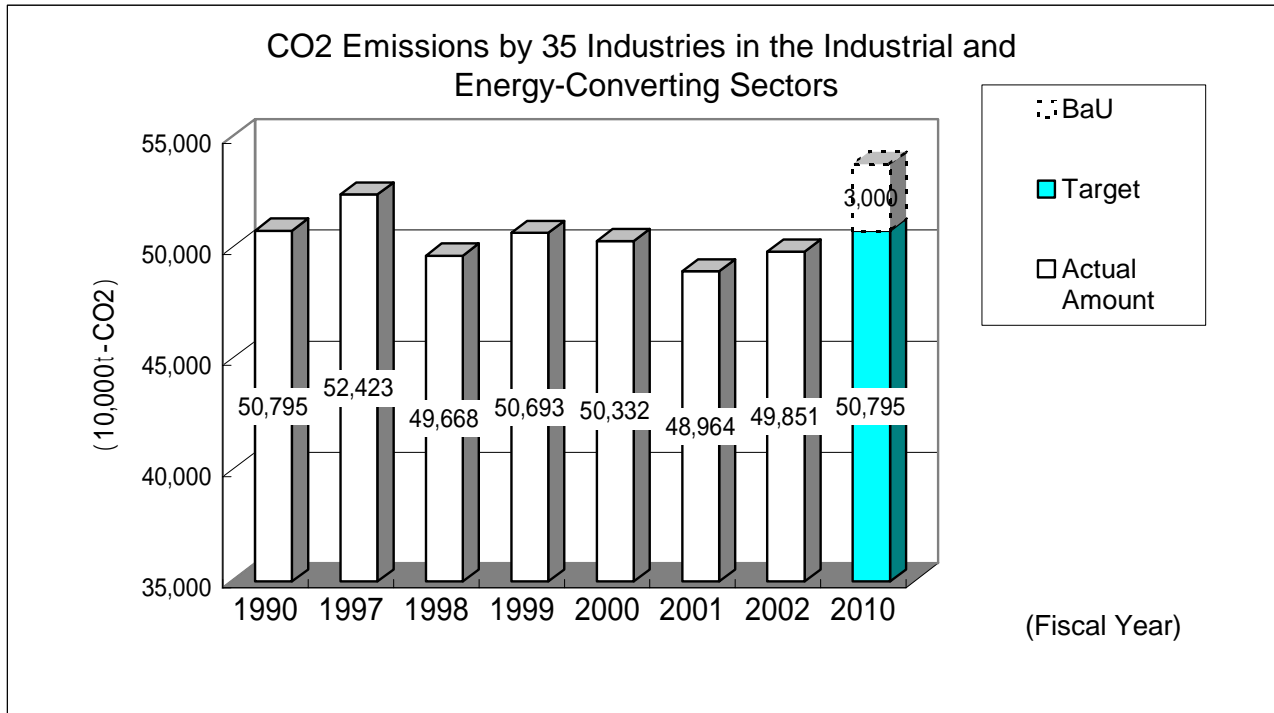
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Keidanren (Japan Business Federation)

1. CO₂ emissions in fiscal 2002 by industry as a whole (comprising the industrial and energy-conversion sectors)

- Keidanren has declared “to endeavor to reduce CO₂ emissions from the industrial and energy-converting sectors in fiscal 2010 to below the levels of fiscal 1990,” and industries and companies are striving to achieve this target.
- A total of 35 industries¹ participated in the fiscal 2003 Follow-up, with one new industry (Japan Lime Association).
- These 35 industries emitted 507.95 million t-CO₂ in fiscal 1990², equivalent to around 45.3% of the 1.1221 billion t-CO₂ emitted by Japan as a whole during that year. Moreover, the emissions of the 35 industries represented approximately 82.6% of the total amount of CO₂ emitted by the country’s industrial and energy-converting sectors in fiscal 1990 (615.3 million t-CO₂³).
- Results of the fiscal 2003 Follow-up indicate that CO₂ emissions in fiscal 2002 were 498.51 million t-CO₂, a 1.8% increase compared to fiscal 2001 and a 1.9% decrease compared to fiscal 1990.

{CO₂ Emissions⁴ by Industry As a Whole (Industrial and Energy-Converting Sectors)}

Fiscal year	1990	1997	1998	1999	2000	2001	2002	2010 (goal)	2010 (BAU) ⁵
CO ₂ emissions (million t-CO ₂)	507.95	524.23 (+3.2% cf. 1990)	496.68 (-2.2% cf. 1990)	506.93 (-0.2% cf. 1990)	503.32 (-0.9% cf. 1990)	489.64 (-3.6% cf. 1990)	498.51 (-1.9% cf. 1990)	Below the level of 1990	537.95 (approx. +5.9% cf. 1990)



2. Trends by Industry

- Of the 35 industries in the industrial and energy-converting sectors that participated in the current compilation, 20 reported declines in CO₂ emissions compared to fiscal 1990, while 14 reported declines compared to fiscal 2001. Of the 12 industries that defined their goals in terms of reductions of CO₂ emissions, 8 reported reductions compared to fiscal 1990 and 5 reported reductions compared to fiscal 2001 (see Attachment 1-1)⁶.
- 6 of the 6 industries that defined their goals in terms of reduction of energy consumption reported reductions compared to fiscal 1990; 4 industries reported reductions compared to fiscal 2001 (see Attachment 1-2)⁶.
- Of the 22 industries that defined their goals in terms of either CO₂ emissions intensity or energy consumption intensity, 15 reported improvements in their indices compared to fiscal 1990; and 8 of these industries also showed improvements in these indices compared to fiscal 2001 (see Attachment 1-3).

3. Efforts by industries in the transportation, offices and household sectors to reduce CO₂ emissions

- To date 23 industrial associations and companies from the transportation, offices and household sectors have participated in the Keidanren Voluntary Action Plan, formulating voluntary action plans and endeavoring to take steps to deal with global warming.⁷ (See Attachment 2).

4. Evaluations and Future Policies

(1) Evaluation of efforts by industry as a whole

- CO₂ emissions in fiscal 2002 were 1.9% lower than in fiscal 1990. And average CO₂ emissions in 6 years from fiscal 1997 to fiscal 2002 were 503.22 million t-CO₂, 0.9% lower than in fiscal 1990.
- An analysis of the reasons why CO₂ emissions in fiscal 2002 fell 1.9% on fiscal 1990 levels is provided in the table below. It reveals that efforts by industries and companies to reduce emissions of CO₂ had greater effect than increased production activity in participating industries.
- At the same time, analysis of the reasons for the increase since fiscal 2001 reveals that increased production activity in participating industries associated with economic recovery, and a worsening in the CO₂ coefficient associated with the shut down of some nuclear power plants had a greater combined effect than measures by industries and companies to reduce emissions.

	Cf. fiscal 1990	Cf. fiscal 2001
Change in CO ₂ coefficient	- 0.4%	+ 0.6%
Change in production	+ 3.9%	+ 3.1%
Change in CO ₂ emissions per production	- 5.4%	- 1.9%

CO₂/MJ for fuel use; CO₂/kWh for electricity consumption

(2) Future Policies

- Compared to fiscal 2001, fiscal 2002 saw a reduction of 1.9% on fiscal 1990 levels as a result of the efforts of participating industries, despite an increase in production associated with the slow recovery of the economy. Voluntary

initiatives by industry have shown good effect since fiscal 1990, in the form of improvements in the indices of CO₂ emissions intensity and energy consumption intensity, and steady progress in the shift to less carbon intensive forms of energy.

- While calling upon participating industries to remain committed to efforts to achieve their individual goals, Keidanren will work toward achieving the common goal set for all industries, namely “to endeavor to reduce CO₂ emissions from the industrial and energy-converting sectors in fiscal 2010 to below the level of fiscal 1990.”
- At the same time, in order to enable industry to continue its efforts to reduce emissions over the medium-to-long terms within the framework of voluntary action plans while it will continue such efforts to assure reliability hereafter, Keidanren established a Evaluation Committee for Voluntary Action Plan on Environment in July 2002 (See Attachment 3). In the fiscal 2002 Follow-up, the Committee evaluated methods of collection, calculation, and publication of data. The findings were presented in a report, dated March 2003. In the Follow-up this financial year, in light of the points made by the Committee, the boundaries of the Follow-up were adjusted and variations in emissions analyzed. Keidanren will continue to improve the quality of the Follow-up on an ongoing basis.
- The industry will also continue to contribute not only to reducing CO₂ emissions from the industrial sector but also to reducing emissions from the transportation, offices and household sector, through the long-term key to combating global warming – technological development and improvements in the efficiency of both distribution and energy use in commercial buildings.

¹ The following are the 35 industries in the industrial and energy-conversion sectors: Flat Glass Association of Japan; Japan Federation of Housing Organizations; Communications and Information network Association of Japan, Japan Electronics and Information Technology Industries Association, Japan Electrical Manufacturers' Association, Japan Business Machine and Information System Industries Association; Japan Sugar Refiners' Association; Flour Millers Association; Japan Coal Energy Center; Petroleum Association of Japan; Limestone Association of Japan; Cement Association of Japan; The Japan Soft Drinks Association; Federation of Electric Power Companies; Japan Aluminum Association; Japan Sanitary Equipment Industry Association; Japan Chemical Industry Association; Japan Gas Association; Japan Federation of Construction Contractors, Japan Civil Engineering Contractor's Association, Inc. and Building Contractors Society; Japan Mining Industry Association; Japan Machine Tool Builder's Association; The Japan Rubber

Manufacturers Association; Japan Society of Industrial Machinery Manufacturers; Japan Industrial Vehicles Association; Japan Automobile Manufacturers Association; Japan Auto-body Industries Association, Inc. ; Japan Auto Parts Industries Association; Japan Brass Makers Association; Japan Paper Association; 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; Japan Iron and Steel Federation; Japan Association of Rolling Stock Industries; Japan Electric Wire and Cable Makers' Association; Japan Dairy Industry Association; Japan Bearing Industrial Association; Brewers Association of Japan.

² When electric power input per unit output is used to calculate emissions for industry as a whole, Keidanren uses the following data 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; FY1997: 3.26; FY1998: 3.16; FY1999: 3.34; FY2000: 3.38; FY2001: 3.38; FY2002: 3.62; FY2010: 2.99; FY2010 (BAU): 3.62 (t-CO₂/10⁴kWh)}.

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 sector, industrial sector, and from industrial processes, as contained in the statistics on total CO₂ emissions for Japan, which are announced by Ministry of the Environment.

⁴ Industries review actual and forecasted figures on CO₂ 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 CO₂ emissions in FY2010, assuming that the Voluntary Action Plan as of FY2003 is not executed from FY2003 on.

⁶ The goals of the Japan Gas Association, which defines its targets in terms of CO₂ emissions and CO₂ emissions intensity, and of The Japan Rubber Manufacturers Association, which defines its targets in terms of CO₂ emissions and energy consumption intensity, and of the Japan Electric Wire and Cable Makers' Association, the Japan machine Tool Builders' Association, that 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 residential sector comprise the following: Bankers Association; Japan LP Gas Association; The Marine & Fire Insurance

Association of Japan, Inc.; Japan Chain Store Association; Japan Department Stores Association; Japan Hotel Association; Japan Foreign Trade Council, Inc.; Japan Association of Refrigerated Warehouses; The Real Estate Companies Association in Japan, and the 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; Japan Shipowners' Association; Japan Federation of Coastal Shipping Associations; Japan Non-Government Railways Association; and Japan Freight Railway Company, Kyushu Railway Company, Shikoku Railway Company, Central Japan Railway Company, West Japan Railway Company, East Japan Railway Company, and Hokkaido Railway Company.