Report Indicating Demonstrable Progress toward Achieving the Commitment

1. Domestic Measures to Achieve the Kyoto Protocol Commitment

(1) Background

October 1990 Action Program to Arrest Global Warming decided at the Council of Ministers for Global Environmental Conservation

(June 1992: Adoption of the United Nations Framework Convention on Climate Change (UNFCCC))

(December 1997: Adoption of the Kyoto Protocol)

December 1997 Global Warming Prevention Headquarters established in the Cabinet (Members: entire Cabinet)

June 1998 Outline for Promotion of Efforts to Prevent Global Warming decided by the Global Warming Prevention Headquarters

October 1998 Enactment of the Law Concerning the Promotion of Measures to Cope with Global Warming

(November 2001: Marrakesh Accords)

March 2002 New Outline for Promotion of Efforts to Prevent Global Warming decided by the Global Warming Prevention Headquarters

June 2002 Revision of the Law Concerning the Promotion of Measures to Cope with Global Warming, conclusion of the Kyoto Protocol

(February 2005: Kyoto Protocol issued)

April 2005 Kyoto Protocol Target Achievement Plan decided by the Cabinet

(January 2008: Start of first commitment period)

The Government of Japan is promoting its domestic countermeasures in response to international trends related to the UNFCCC and Kyoto Protocol.

Following the adoption of the Kyoto Protocol in 1997, the Government of Japan established the Global Warming Prevention Headquarters in the Cabinet and arranged a framework for promoting countermeasures in 1998. Moreover, we formulated the Outline for Promotion of Efforts to Prevent Global Warming, enacted the Law Concerning the Promotion of Measures to Cope with Global Warming, and prepared the fundamental framework for countermeasures.

Following the Marrakesh Accords of 2001, the Government of Japan revised the Outline for Promotion of Efforts to Prevent Global Warming in 2002 and, in addition to the stipulation of necessary countermeasures and measures for the achievement of the six percent reduction commitment, manifested a plan to conduct evaluations and reviews of the countermeasures and policies in 2004 and 2007. Furthermore, we revised the Law Concerning the Promotion of Measures to Cope with Global Warming necessary for the conclusion of the Kyoto Protocol and concluded the Protocol.

In 2004, the Government of Japan evaluated and reviewed the Outline, following the entering into effect of the Kyoto Protocol in February 2005, and made Cabinet decision on the Kyoto Protocol Target Achievement Plan in April 2005, which included additional countermeasures and policies deemed necessary.

Regarding the Target Achievement Plan, the Government of Japan will comprehensively evaluate the progress of countermeasures and policies as well as the emission status, etc. in fiscal 2007, the previous year of the first commitment period. The additional countermeasures and policies deemed necessary for the first commitment period will be implemented starting from fiscal 2008.

(2) Contents of the Countermeasures

The Government of Japan is promoting the countermeasures with the aim of both the steady achievement of the 6 percent reduction commitment under the Kyoto Protocol and further long-term and continuous reduction of greenhouse gas emissions on a global scale.

Countermeasures for the reduction of greenhouse gas emissions and sink measures for the achievement of the six percent reduction commitment are included in the countermeasures found in Attachment 1. Moreover, the Government of Japan has set policies which national and local public organizations will implement for the promotion of such countermeasures as well as indicating the expected amount of reductions in greenhouse emissions for each of those countermeasures. In addition, we have also incorporated fundamental policies such as countermeasures and policies related to the Kyoto Mechanism, cross-sectoral policies such as the development of national campaigns, and the promotion of technological developments.

Through this, steps toward the achievement of the six percent reduction commitment are being made clear.

More details are contained in Chapter 3 of Japan's Fourth National Communication (Japan's NC4) under the United Nations Framework Convention on Climate Change (UNFCCC).

2. Prospects and Trends in the Greenhouse Gas Emissions

(1) Trends

Total greenhouse gas emissions in Japan in fiscal 2003 was 1,339 million t-CO_2, an increase of 8.3 percent compared to emissions in the base year under the Kyoto Protocol.

This resulted from a substantial increase in emissions of carbon dioxide energy sources, which comprises 90 percent of the total emission (an increase of 11.3% compared to the total emissions from the base year). This increase can be drawn back to the impact of special factors by a temporary major decline in the

operating rate of nuclear power plants. (When presuming that the nuclear power plants operated at the scheduled rate, it has been estimated that the carbon dioxide emissions would have been roughly 60 million tons, about 4.9 percent less from the total emissions in the base year under the Kyoto Protocol.) Looking at it broken down by sectors, the industrial sector, which comprises roughly 40 percent of carbon dioxide emissions, and the transport sector (cargo vehicles and public transportation), which comprises roughly 10 percent, have stopped at a relatively flat level. Conversely, emissions for the commercial and other sector that comprise 20 percent, the residential sector which makes up approximately 10 percent, and the transport sector (private automobiles) at about 10 percent are increasing substantially.

More details can be found in Chapters 2 and 4 of Japan's NC4.

Trends in Greenhouse Gas Emissions

(Million t-CO_2)

	Kyoto Protocol base year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Carbon dioxide (CO_2) emission	1,122.3	1,122.3	1,131.4	1,148.9	1,138.7	1,198.2	1,213.1	1,234.8	1,242.0	1,195.2	1,228.4	1,239.0	1,213.6	1,247.8	1,259.4
Methane (CH4)	24.8	24.8	24.6	24.5	24.4	24.0	23.4	22.9	22.1	21.5	21.1	20.7	20.2	19.5	19.3
Nitrous oxide (N2O)	40.2	40.2	39.7	39.9	39.6	40.5	40.6	41.5	41.9	40.6	35.1	37.5	34.6	34.7	34.6
Hydro-fluoro-carbons (HFCs)	20.2						20.2	19.9	19.8	19.3	19.8	18.5	15.8	12.9	12.3
Per-fluoro-carbons (PFCs)	12.6						12.6	15.3	16.9	16.6	14.9	13.7	11.5	9.8	9.0
Sulphur hexa-fluoride (SF6)	16.9						16.9	17.5	14.8	13.4	9.1	6.8	5.7	5.3	4.5
Total	1,237.0	1,187.2	1,195.7	1,213.3	1,202.8	1,262.7	1,326.8	1,351.8	1,357.5	1,306.6	1,328.4	1,336.2	1,301.4	1,330.0	1,339.1

(2) Future Prospects

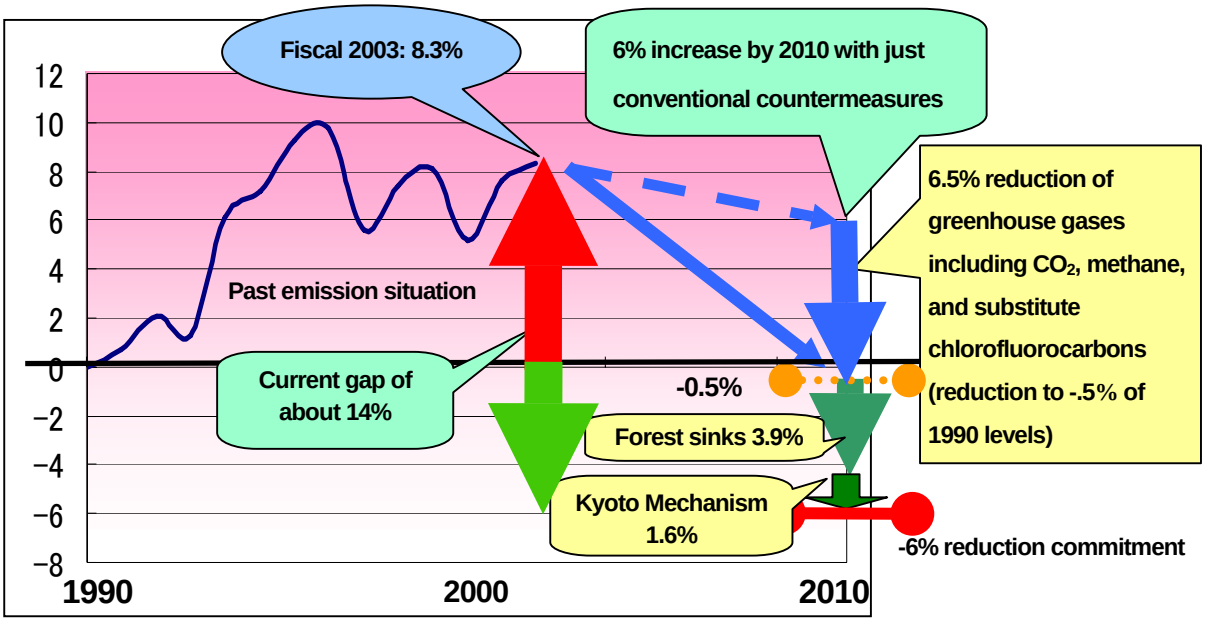
In the event that the current countermeasures based on the Outline for Promotion of Efforts to Prevent Global Warming in 2002 are implemented, it is projected that by fiscal 2010 the total amount of emissions will reach approximately 1,311 million t-CO_2 which is a prospected 6 percent increase relative to the base year.

3. Evaluation of the Contribution of Various Countermeasures on Achievement of the Commitment

Based on the prospect that emissions will increase by 6 percent by fiscal 2010, the additional emission reduction equivalent to approximately 12 percent (approximately 148 million t-CO_2) and other achievements must be sought on top of the conventionally implemented countermeasures and policies for Japan to achieve its six percent reduction commitment under the Kyoto Protocol. To this end, in April 2005 the Government of Japan made a Cabinet decision on the Kyoto Protocol Target Achievement Plan which includes countermeasures and measures necessary for additional emission reduction, etc.

The future prospect drawn in this Plan has shown that the abovementioned approximately 12 percent reduction will be achieved with the following breakdown: 6.5 percent with emissions reduction (energy-originated carbon dioxide: 4.8 percent; non-energy-originated carbon dioxide, methane, nitrous monoxide: total of 0.4 percent; the three fluorinated gases: 1.3 percent), 3.9 percent with forest sinks, and 1.6 percent with the Kyoto Mechanism.

More details can be found in Chapter 4 of Japan's NC4.



Future Outlook and Results by Category of Greenhouse Gas Emission

	Base year	Achievement in fiscal 2003		With measures in fiscal 2010		With additional measures in fiscal 2010	
	Million t-CO_2	Million t-CO_2	Ratio to base year total emissions	Million t-CO_2	Million t-CO_2	Million t-CO_2	Ratio to base year total emissions
Energy-originated CO_2	1,048	1,188	11.3%	1,115	5.4%	1,056	0.6%
Industrial sector		478	0.2%	450	-2.1%	435	-3.3%
Commercial and residential sector		366	7.5%	333	4.9%	302	2.3%
(Commercial and other sector)	144	196	4.2%	178	2.8%	165	1.7%
(Residential sector)	129	170	3.3%	155	2.1%	137	0.6%
Transport sector		260	3.5%	259	3.4%	250	2.7%
Energy industries sector		86	0.3%	73	-0.8%	69	-1.1%
Non-energy-originated CO_2, CH_4, N_2O	139	125	-1.1%	130	-0.8%	124	-1.2%
Non-energy-originated CO_2	74	71	-0.2%	74	0.0%	70	-0.3%
CH_4	25	19	-0.5%	20	-0.3%	20	-0.4%
N_2O	40	35	-0.4%	35	-0.4%	34	-0.5%
Three fluorinated gases	50	26	-1.9%	67	1.4%	51	0.1%
HFC	20	12	-0.6%	46	2.1%	34	1.1%
PFC	13	9	-0.3%	9	-0.3%	9	-0.3%
SF_6	17	5	-0.9%	12	-0.4%	8	-0.7%
Greenhouse gas emissions	1,237	1,339	8.3%	1,311	6.0%	1,231	-0.5%

Source of Greenhouse Gas Removal -3.9%

Utilization of the Kyoto Mechanism -1.6%

Total -6.0%

4. Measures pursuant to Articles 10 and 11 of the Kyoto Protocol

(1) Creation of National Inventory of Greenhouse Gas Emissions and Removals

Every year, the Government of Japan creates the Inventory and submits to the head offices of the Framework Convention on Climate Change, as well as announces domestically. Moreover, improvements are devised for the techniques for creating the Inventory based on the results of the examination by the head offices of the Framework Convention on Climate Change.

Specifically, following efforts are made to improve the credibility of the Inventory. As part of quality assurance (QA) efforts the Committee for the Greenhouse Gas Emissions Estimation Methods, a review committee comprised of experts, conducts an evaluation and review. As part of quality control (QC) efforts the latest scientific knowledge is

incorporated, the correctness of the calculations is checked, and the document is stored for safekeeping.

For these initiatives, the Greenhouse Gas Inventory Office (GIO) has been established in the National Institute for Environmental Studies (NIES) to consistently collect information and evidences and to serve as Japan's base for the creation of the Inventory. In addition, the personnel of the GIO aim to contribute to improving the credibility of the international inventory by taking part in an examination of the inventories from various other countries.

Regarding the inventory of emissions and removals related to Land-Use, Land-Use Change, and Forestry sector the amounts for fiscal 1996 onward have not been estimated on account of undeveloped data maintenance. The emissions and removals estimates for fiscal 1996 are projected to be reported in 2006.

More details can be found in Chapter 2 of Japan's NC4.

(2) Creation and Implementation of the plan related to Domestic Measures

The Government of Japan has been promoting global warming countermeasures through establishing the Action Program to Arrest Global Warming in October 1990, the Outline for Promotion of Efforts to Prevent Global Warming in June 1998 following the adoption of Kyoto Protocol (December 1997) and revising the Outline for Promotion of Efforts to Prevent Global Warming in March 2002 following the enactment of the Marrakesh Agreements (November 2001).

More details can be found in Chapter 3 of Japan's Fourth National Communication under the UNFCCC.

(3) Financial Resources and Technology Transfers

In August 2003, the Cabinet adopted Japan's Official Development Assistance Charter (the ODA Charter), which spells out the philosophy and principles of Japan's official development assistance. The ODA Charter identifies addressing global issues, including environmental problems, as one of the priority issues of ODA and states as a principle of ODA implementation that "environmental conservation and development should be pursued in tandem."

Japan's Medium-term Policy on ODA announced in February 2005 also makes addressing global issues, including environmental problems, a priority issue. In this way the Government of Japan is trying to realize sustainable development on a global scale by supporting the ownership of developing countries.

On the basis of the above, Japan's environment cooperation follow the Environmental Conservation Initiative for Sustainable Development (EcoISD) announced in August 2002 at the World Summit on Sustainable Development (WSSD). In particular concerning the global-warming issue, which threatens sustainable development on a worldwide scale, the Government of Japan announced the Kyoto Initiative on aid for anti-global warming programs in developing countries during the Third Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP3) held in Kyoto in December 1997. Under the initiative, the Government of

Japan provides active support for anti-global warming programs and projects.

Based on the Kyoto Initiative, about 13,000 people have already been fostered during the seven years from fiscal 1998 to 2004 through training courses. Furthermore, the yen loans with the concessional terms related to global warming countermeasures were provided in 83 cases from December 1997 to March 2005, amounting to approximately 1.09 trillion yen.

More details can be found in Chapter 6 of Japan's NC4.

(4) Research and Systematic Observation

More details can be found in Chapter 7 of Japan's NC4.

a. Research

Under the "Global Warming Research Initiative" which has been organized by the Council for Science and Technology Policy (CSTP), Japan has been promoting climate change research in modeling and projection, impact and risk-assessment and response policies, together with technology developments in greenhouse gas fixation and sequestration, and in anthropogenic Greenhouse gas emissions reduction. Particularly, outcomes from high-resolution climate projection models under a project utilizing the Earth Simulator, one of the highest performance supercomputer in the world are expected to contribute to the Fourth Assessment Report (AR4) of the Intergovernmental Panel on Climate Change (IPCC). Part of computed results has been provided for regional adaptation studies in developing countries.

Besides, guidelines for the implementation of the Kyoto Protocol and methods for assessing the removal of greenhouse gases by forests will be established.

b. Systematic Observation

The Government of Japan is comprehensively promoting the systematic observation under the Earth Observation Implementation Policy to be revised annually and the Comprehensive Monitoring Program for Global Warming included in the Global Warming Research Initiative basing on the Earth Observation Promotion Strategy (proposed by the Council for Science and Technology Policy in December 2004).

Baring in mind the contribution to the establishment of the Global Earth Observation System of Systems (GEOSS) based on the 10-Year Implementation Plan, the Government of Japan is participating and cooperating in the Global Climate Observing System (GCOS), the Global Environmental Monitoring System (GEMS) and other international observation and monitoring programs, and conducts wide-ranging observations and monitoring based on an appropriate sharing of international tasks. The Government of Japan is also working to promote the Asia-Pacific Network for Global Change Research (APN) and facilitate implementation of observation and monitoring throughout the Asia- Pacific region.

(5) Education, Training, and Promotion of Improved Awareness

Opportunities to learn about the global warming issue, as well as the energy issues closely involved with it, are provided for households, schools, and society at large. Japan promotes improved awareness through advertising in the mass media, distribution of pamphlets, and holding of symposiums. Also, Japan is committed to increasing the support for environmental NGOs, which promise to play roles as leaders or advisors for national campaign.

The Government of Japan will actively provide and share, in as visible a manner as possible, knowledge about the increasingly serious global warming issue, the specific actions for which enormous efforts are needed in order to achieve the six percent reduction commitment, and information about what each individual must do, as well as carry out public relations and dissemination activities on these topics in order to improve the awareness of households and businesses and rouse them to take action.

For example since April 2005, the Government of Japan has launched the national campaign 'Team Minus 6%' which aims to encourage all citizens to work as one to prevent global warming. With respect to countermeasures concerning reduction of greenhouse gas emissions, it has ever since urged people to take six specific warming prevention actions including setting heaters and air conditioners to appropriate temperatures.

As a part of these efforts, for example, 'Team Minus 6%' is promoting the summer and winter business dress styles of COOL BIZ and WARM BIZ which encourage people in offices to wear clothes that enable them to set the air conditioner to 28 degrees Celsius in the summer and set the heating to 20 degrees Celsius in the winter and work comfortably and efficiently at those room temperatures. Through the COOL BIZ initiative of 2005, since the air-conditioner temperatures were set higher than in average years, preliminary calculations showed a reduction of about 460,000 t-CO_2 of carbon dioxide (equivalent to the one month emissions of about 1 million households).

More details can be found in Chapter 8 of Japan's NC4.

(Attachment 1)List of the countermeasures included in the Kyoto Protocol Target Achievement Plan related to the reduction and removals of greenhouse gas emissions

[Energy-originated Carbon Dioxide]

1. Form CO_2-saving regional and urban structures and socioeconomic systems
   a. CO_2-saving urban design
      ○Promotion of the Area Energy Network
      ○Promotion of global warming countermeasures for tenanted buildings, etc. at the regional level
   b. Design of CO_2-saving transportation systems
      ○Promotion of the use of public transportation
      ○Promotion of environmentally-friendly use of automobiles (improvement of environmental friendliness of automobile transport businesses, etc. by promoting spread of eco-drive)
      ○Promotion of environmentally-friendly use of automobiles (support for the introduction of anti-idling automobiles)
      ○Adjustment of demand of automobile traffic
      ○Promotion of Intelligent Transport Systems (ITS)
      ○Reduction of road constructions
      ○Development of traffic safety facilities
      ○Promotion of traffic alternatives using information and communications such as teleworking
      ○Realization of Environmentally Sustainable Transport (EST)
   c. Building of CO_2-saving distribution systems
      ○Comprehensive measures to improve the environmental friendliness of marine transport
      ○Modal shift to railway freight
      ○Improvement of efficiency of trucking
      ○Reduction of land transport distance of international freight
   d. Promotion of integrated introduction of new energy and energy interchange
      ○Building of a network of dispersed new energy sources
      ○Promotion of the use of biomass (building of biomass towns)
      ○Effective use of unused energy sources
      ○Energy conservation through cooperation among multiple businesses

2. Measures by facility and entity
   a. Efforts in the industrial sector (manufacturers, etc.)
      ○Steady implementation and follow-up of the *Keidanren* Voluntary Action Plan on the Environment
      ○Thorough management of energy according to the Energy Conservation Law (industrial sector)
   b. Efforts by transport businesses
      ○Promotion of environmentally-friendly use of automobiles (improvement of environmental friendliness of automobile transport businesses, etc. by promoting spread of eco-drive) [as previously mentioned]
      ○Promotion of environmentally-friendly use of automobiles (support for the introduction of anti-idling automobiles) [as previously mentioned]
      ○Comprehensive measures to improve the environmental friendliness of marine transport [as previously mentioned]
      ○Modal shift to railway freight [as previously mentioned]
      ○Improvement of efficiency of trucking [as previously mentioned]
      ○Reduction of land transport distance of international freight [as previously mentioned]
   c. CO_2-saving in business facilities such as offices and stores, etc.
      ○Thorough management of energy according to the Energy Conservation Law (commercial and other sector)

○Improvement of the energy conservation capability of buildings
○Spread of Building Energy Management System (BEMS)

d. CO_2-saving in households
○Improvement of the energy conservation capability of houses
○Model efforts for CO_2–saving in houses undertaken with the cooperation of housing manufacturers, consumers, etc.
○Spread of Home Energy Management System (HEMS)

e. CO_2-saving in the energy supply sector
○Reduce unit CO2 emissions in the electric field by promoting nuclear power, etc.
○Promotion of measures for new energy soureces (expand use of heat from biomass, photovoltaic power generation, etc.)
○Promotion of introduction of co-generation and fuel cells, etc.

3. Measures by equipment

a. Industrial sector
○Promotion of the introduction of high-performance industrial furnaces
○Spread high-performance boilers
○Promotion of the introduction of next-generation coke ovens
○Spread fuel-efficient construction machinery in the construction field

b. Transport sector
○Improvement of automobile fuel efficiency according to top-runner standards
○Spread and promotion of clean energy automobiles
○Limitation of the maximum speed for large trucks on highways
○Introduction of sulphur-free fuel and cars that can run on sulphur-free fuel
○Improvement of energy consumption efficiency in railway
○Improvement of energy consumption efficiency in aviation

c. Commercial and other sector, and residential sector
○Improvement of efficiency of equipment that meets top-runner standards
○Promotion of the replacement with energy conserving equipment
○Provision of energy information to consumers by energy supply businesses, etc.
○Model efforts undertaken in collaboration with household appliance manufacturers, distributors and consumers, etc. to spread energy-conserving household appliances
○Spread efficient water heaters
○Spread efficient air conditioners for commercial use
○Spread energy-conserving refrigerators and freezers for commercial use
○Spread efficiency lighting (LED lights)
○Reduction in standby power consumption

[Non-energy-originated Carbon Dioxide]

○Expanded use of blended cement
○Promotion of measures to reduce carbon dioxide emissions deriving from waste incineration

[Methane and Nitrous Oxide]

1. Methane
○Reduction in amount of final disposal of waste , etc.

2. Nitrous oxide
○Installation of equipment to decompose nitrous oxide in the adipic acid manufacturing process
○Upgrading combustion in sewage sludge incineration facilities
○Upgrading combustion in general waste disposal facilities, etc.

[Three fluorinated Gases]

○Promotion of planned efforts made by industry

○Promotion of development, etc. of substitute materials and use of substitute products

○Recovery of HFC charged as refrigerant in equipment in accordance with laws, etc.

[Greenhouse Gas Sink]

1. Forest sink measures

○Promotion of measures for greenhouse gas sinks by promoting forest and forestry measures (10-year policy on forest sinks to prevent global warming)

- Development of sound forests
- Promotion of appropriate management and protect forest reserves, etc.
- Promotion of forest-building, etc. with the participation of the people
- Use of wood and wood biomass

2. Promotion of Urban Greening, etc.