

# Japan's Strategy Against Global Warming

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The Third Session of the Conference of the Parties (COP3) to the United Nations Framework Convention on Climate Change (UNFCCC) was held in Kyoto from December 1 to 10, 1997. A total of 161 countries, developed and developing, took part and adopted the Kyoto Protocol to the United Nations Framework Convention on Climate Change (the Kyoto Protocol). This article is intended to explain the significance of the Kyoto Protocol for the prevention of global warming and Japan's strategy to counter this problem.

## Significance of the Kyoto Protocol

Global warming is a serious problem that vitally concerns mankind's existence and chances of survival in the future. To find a basic solution, mankind must unite its strength and act together for a century. The present UNFCCC, which took effect in 1994, states that developed countries, recognizing that the return to earlier levels of emissions of anthropogenic greenhouse gases by 2000 would contribute to stabilization of the concentration of such gases, should adopt policies and measures to mitigate climatic change. Thus, it stipulates what must be done by 2000 only, and not beyond. Therefore, Japan, as the country chairing COP3, and all other countries endeavored to forge an international consensus on meaningful, realistic and equitable measures to prevent global warming. As a result, the countries taking part in the Kyoto conference adopted the Kyoto Protocol, transcending the differences in their positions. Mankind took a worthwhile first stride in the quest to prevent global warming.

The Kyoto Protocol merits high ratings in the following respects:

—Firstly, the Kyoto Protocol is significant in the battle to prevent

global warming. Under this protocol, not only developed countries but also developing nations are to step up their efforts to cut greenhouse gas emissions. The developed countries as a group are pledged to cut total emissions of six greenhouse gases by between 2008 and 2012 by 5% from the level in the base year 1990, with a net change in greenhouse gas emissions from sources and removal by sinks resulting from afforestation and reforestation, etc., taken into account. (The six greenhouse gases are carbon dioxide, nitrous oxide, hydrofluorocarbons (HFC), perfluorocarbons (PFC) and sulfur hexafluoride (SF<sub>6</sub>) and methane.) The Kyoto Protocol also urges developing nations to step up their efforts to combat global warming through such systems as a clean development mechanism (a system under which developing countries contribute to cutting greenhouse gas emissions without curbing their sustainable development).

—Secondly, the Kyoto Protocol pays sufficient heed to equity among the developed countries. It considers each country's efforts to date to cut greenhouse gas emissions, such as by improving energy efficiency and takes the bubble formulated by the European Union into account. The numerical targets for developed countries have been given differentials ranging from +10% to -8%. The targets for Japan, the United States and the EU, as well as the EU member countries, are -6%, -7% and -8%, respectively.

—Thirdly, the numerical targets are the maximum attainable targets for each country.

Regarding implementation of the measures contained in the Kyoto Protocol, the countries concerned have to elaborate such international frameworks as emissions trading (a system set up under the Kyoto Protocol by which a developed country can acquire from or transfer to another developed country a part of the

assigned emission reduction amount), joint implementation (a system under which developed countries may acquire from or transfer to any other developed countries emission-reduction units from projects that provide an additional reduction in emissions), and a clean development mechanism.

## Japan's strategy

Japan's energy utilization efficiency belongs at top international level. Therefore, it is no easy thing for Japan to cut its emissions of greenhouse gases—such as carbon dioxide, generated by fossil fuel combustion—in response to the Kyoto Protocol. However, global warming is an urgent problem that must be addressed immediately from the viewpoint of prevention. The Japanese Government is therefore coming to grips with global environmental problems as one of its top priority tasks. With this awareness, the government has set up a Global Warming Prevention Headquarters chaired by the prime minister and comprising those Cabinet members concerned. This headquarters, acting in concert with the Joint Conference of Relevant Advisory Councils on Domestic Measures to Combat Global Warming ("the Joint Conference"), is expected to plan and implement practical and effective measures to combat global warming. Before COP3, the Joint Conference compiled a report on ways to curb emissions of three greenhouse gases: carbon dioxide, methane and nitrous oxide. The Global Warming Prevention Headquarters has decided to take action to counter global warming on the basis of the report by the Joint Conference, giving priority to the following seven areas:

(1) *Implementation of measures to curb carbon dioxide emissions, such as energy-saving measures*

—Strengthening measures to accelerate the energy-saving policy,



Photo: Kyodo News Service

Serious endeavors to save our planet: 161 countries gathered in December 1997 in Kyoto for COP3

## MITI's policies

Carbon dioxide constitutes the greater part of greenhouse gases, and over 90% of carbon dioxide emissions in Japan originates in energy consumption. Therefore, Japan must make a well-balanced approach to three tasks—preventing global warming, ensuring economic growth and securing its energy supply. MITI intends to radically bolster overall measures to prevent global warming on both supply of and demand for energy. To be specific, MITI will give priority to the following measures based on the above decisions by the Global Warming Prevention Headquarters. In the fiscal 1998 budget, MITI will request appropriations totaling about ¥301 billion for the development of countermeasures against global warming, up about ¥41 billion over the preceding fiscal year, and steadily implement the

above measures.

### *Revision of the energy-saving law*

Energy consumption in Japan has been tending upward since 1990. This trend is particularly conspicuous in the household sector and the transportation sector. To stop this trend, the government intends to urge various sectors to intensify efforts to save energy by revising the energy-saving law. Measures to be introduced under the revised law have several salient features. The first is the adoption of the 'top runner' system. Under this system, standards for the energy efficiency of motor vehicles and electrical appliances such as household electrical appliances and office automation equipment, will be the energy efficiency of the best model in each product category.

including a radical revision of the Law Concerning the Rational Use of Energy.

—Strengthening measures to encourage the development and propagation of energy-saving machinery, equipment and technologies.

—Urging voluntary energy-saving efforts by local governments, industry, as well as the national government itself.

—Inducing energy saving and reduction of carbon dioxide emissions by indirect approaches, such as the improvement and expansion of infrastructure.

—Encouraging energy suppliers to take measures to cut carbon dioxide emissions.

—Implementing measures to prevent carbon dioxide emissions from

industrial processes.

(2) *Implementation of measures to cut methane and nitrous oxide emissions*

(3) *Implementation of measures to curb emissions of HFC, PFC and SF6*

—Collecting, recycling or destroying the three gases, with full recognition of industry's realities.

—Development of substitutes and technologies.

(4) *Implementation of projects to absorb greenhouse gases, such as afforestation*

(5) *Promotion of scientific and technical research to develop innovative technologies*

(6) *Promotion of international cooperation*

(7) *Encouraging and supporting voluntary endeavors by private citizens to change their lifestyles*

Secondly, measures to save energy at factories and offices will be reinforced. In the case of factories which consume large amounts of energy, the revised law will urge them to take a long-term approach to energy saving. At the same time, for factories and offices using small amounts of energy, it will introduce new measures such as urging them to attend education and training programs on energy-saving methods and practices.

### ***Encouragement of voluntary efforts by industry***

The Japan Federation of Economic Organizations (Keidanren) in 1997 announced industry's voluntary action program to curb energy consumption and carbon dioxide emissions. Further, the Industrial Structure Council and the Advisory Committee for Energy, both advisory bodies to the MITI minister, began to jointly monitor the Keidanren Action Program in response to a report by the Joint Conference, which states that a follow-up by public organizations is necessary to ensure steady implementation of voluntary efforts by the industries concerned. They monitor the progress of efforts to attain the targets set under the action program by 22 staple industries such as steel, chemicals, cement and paper, as well as the motor industry.

### ***Stimulation of development and use of energy-saving machinery and equipment and technologies***

MITI intends to encourage the development of leading-edge energy-saving technologies for industry, households and transportation and the use of machinery and equipment that embody such technologies. To this end, MITI will make appropriations in the budget and take measures based on the Law on Extraordinary Measures Concerning Promotion of Activities Related to the Rational Use of Energy and Recycled Resources. For example, it will encourage the development and use of high-performance industrial furnaces, the development of high-efficiency lighting equipment and high-efficiency liquid crystal displays,

the use of "clean-energy vehicles" such as hybrid vehicles, and the development of motor vehicles equipped with advanced fuel cells.

### ***Encouraging the development and use of non-fossil forms of energy***

MITI will step up efforts to boost the energy supply along with the efforts to save energy. It will promote nuclear power plants while taking every measure to ensure the safety of nuclear power and obtain broader public support. It will also stimulate the development and use of such new forms of energy as photovoltaic cells by making budget appropriations and taking measures based on the Law Concerning Promotion of the Use of New Energy.

### ***Revising the long-term energy supply and demand outlook***

From an overall viewpoint concerning the prevention of global warming, the growth of the national economy and stabilization of the energy supply-demand situation, the Advisory Committee for Energy has begun work

to revise the government's long-term energy supply and demand outlook by taking into account the intensified measures on both supply of and demand for energy. On the basis of the results, the government may revise the "Goal for Oil-alternative Energy Supply," which will serve as the guideline for its substitute energy policy.

### ***Raising public awareness***

MITI will propose a "Smart Life" in order to rid energy-saving efforts of their dark image of forbearance and frugality, show them as positive and attractive, and encourage people to change their lifestyles to more energy-efficient ones. To this end, MITI will radically bolster its public relations activities.

### ***Stimulating the development of revolutionary forms of energy and environment protection technologies***

To find a fundamental solution to the global warming problem, Japan must step up efforts to develop revolutionary forms of energy and environment



Japan's stance at COP3: major cuts in energy consumption are necessary, while stabilizing energy supply and demand is another issue

Photo: Kyodo News Services

### Background to the 6% commitment

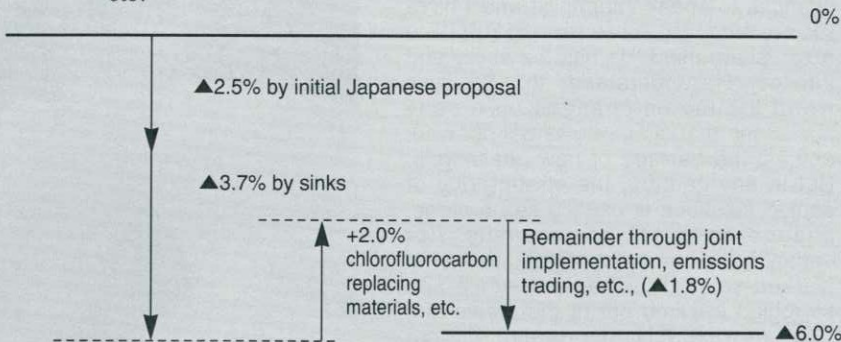
▲2.5% Japan's initial proposal

CO<sub>2</sub> from energy consumption plus-minus 0%  
CO<sub>2</sub>, not from energy consumption, methane and  
nitrous oxide ▲0.5%  
Innovations ▲2.0%

▲3.7% sinks

+2.0% HFC, PFC, SF<sub>6</sub>

▲1.8% Remainder: making use of joint implementation, emissions trading,  
etc.



Note 1: Regarding sinks, the Kyoto Protocol permits use of net changes of green house gases removed by activities limited to afforestation, reforestation and deforestation to meet the commitment during the first commitment period. According to these provisions, removals by sinks is figured to be 0.3% for Japan. The Government of Japan will propose in future negotiations that not only afforestation, reforestation and deforestation but also other activities related to sinks, the total reduction of which accounts for -3.7% for Japan, be used to meet the commitment.

Note 2: Because HFC, and PFC have mostly been used since the beginning of the 1990s as substitutes for ozone-depleting CFC and HCFC, which are controlled under the Montreal Protocol, an increase in demand for them is unavoidable. Their emissions will increase by about 4% to 5% without measures to limit their use. Japan will do its utmost to restrict the increase in their emission to about 2% by taking technically and economically possible measures such as leakage prevention, efficient use, collection and reuse, and destruction of these gases, while taking the realities of each industry into account.

conservation technologies using a medium- and a long- range approach. MITI will develop, for example, technologies to fix and use carbon dioxide or sequester it in the ocean, and also develop highly efficient solar cells.

### Implementation of measures to combat greenhouse gases other than carbon dioxide not originating in energy consumption

In order to limit emissions of three gases (HFC, PFC, SF<sub>6</sub>), MITI will

intensify efforts to collect and reuse or destroy such gases in a way compatible with industrial activities. It will study concrete measures to make efficient use of such gases, collect them and destroy them in each stage of production, distribution and consumption, purpose by purpose, and lay down guidelines for each area. The government will ask industry to formulate and submit action programs based on the guidelines, and the councils concerned with the action programs will monitor the efforts made by industry to implement the action programs. Moreover, MITI will develop substitute chemicals for gases used as refrigerants, as semiconductor etching gas, etc.

### International cooperation

In order to combat global warming, concerted efforts by the entire world, cooperation between developed countries and developing nations, are indispensable. MITI is studying ways to immediately implement emissions trading between developed countries, joint implementation and the clean development mechanism as set forth in the Kyoto Protocol. In addition, as said in the ministerial statement issued by the 23 member countries of the OECD/IEA and the EU at COP3, the Climate Technology Initiative (CTI) should be enhanced and reinforced. By structuring a network covering developing countries and the private sector through the CTI, MITI

will actively make contributions from a long-range viewpoint so that the effort to develop technologies to counter climate change and propagate them may progress efficiently.