

# Topic

## The Kyoto Protocol Enters into Force



H.E. Ms. Wangari Maathai, Deputy Environment Minister of Kenya, giving a keynote speech at the Commemorative Event to Mark the Entry into Force of the Kyoto Protocol

To pass the irreplaceable Earth on to following generations, the Kyoto Protocol entered into force on February 16th, 2005. This date can be considered as the starting point for all peoples around the world to address the issue of global warming. We present an outline of the Kyoto Protocol, Commemorative Event to Mark the Entry into Force of the Kyoto Protocol, and of our corporate activities for the prevention of global warming. Global warming demands the awareness of every individual as a personal issue at work or home, and actions accordingly through firsthand efforts. How about reflecting upon the Earth with affection and thinking of the next generation - our children?

### The Kyoto Protocol

In recent years, extreme weather events considered to be consistent with global warming have occurred bringing a great deal of damage to numerous places around the world. The global mean surface temperature has risen by about 0.6 °C over the 20th century. The decline in snow covered areas and sea ice areas, occurrences of more frequent, persistent, and intense El Nino events have been observed. As a result, some data shows that the damage caused by extreme weather events has become 10-fold greater over the last 50 years. If global warming progresses the way it is, it is likely to greatly affect a vast range of areas from natural ecosystems of flora and fauna, to the socioeconomic system, to energy. Specifically, Table 1 shows some potential impacts of global warming on climate and ecosystems ("Third Assessment Report" published by IPCC<sup>1</sup>).

\*1: The IPCC (Intergovernmental Panel on Climate Change) is an intergovernmental organization that assesses the risk of human-induced climate change and gives advice to governments. The organization has been established cooperatively by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP).

Table 1 Impacts of Global Warming on Climate and Ecosystems

Globally averaged surface temperature	By 2100, it will rise by up to 5.8 °C above 1990's level.
Increase in sea level	By 2100, it will increase by up to 88 cm above 1990's level.
Extreme weather events	Increase in the frequency of heavy precipitation and summer droughts, intensification of tropical cyclones, etc.
Ecosystems	Collapse of onshore and freshwater ecosystems, impacts on coral reefs, etc.
Human society	Increased incidence of death in older age groups by heat wave, expansion of infectious disease epidemics.

In consideration of these phenomena, the UNFCCC (the United Nations Framework Convention on Climate Change) was adopted in 1992 for the purpose of achieving stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. The Kyoto Protocol is the protocol based on this convention and was adopted at the UNFCCC/COP3 (the Third Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change) held in Kyoto in 1997. The official name for the Protocol is the "Kyoto Protocol to the United Nations Framework Convention on Climate Change".

Table 2 shows the outline of the Kyoto Protocol

Table 2 Outline of the Kyoto Protocol

Targeted greenhouse gases	Carbon dioxide (CO <sub>2</sub> ), methane (CH <sub>4</sub> ), nitrous oxide (N <sub>2</sub> O), hydro fluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF <sub>6</sub> )
Base year	1990 (1995 can be selected as the base year for hydro fluorocarbons, perfluorocarbons and sulfur hexafluoride)
Target reduction ratio of greenhouse gas emission	Reduction in the overall emissions of greenhouse gases by at least 5 per cent below 1990 levels in 5 years from 2008 to 2012 (the 1st commitment period). Reduction ratio: 6 % for Japan, 8 % for EU, etc.
Period for the target achievement	5 years from 2008 to 2012 (the 1st commitment period)
Kyoto Mechanism	This system allows a developed country to count the amount of reduction achieved in international trades or projects in addition to its domestic reduction. The Kyoto Mechanism consists of the emission trading system (emission right), joint implementation, and clean development mechanism (CDM)

Historically, developing countries have deferred their voluntary participation. The United States, which produces the largest amount of carbon dioxide in the world, has denied the acceptance. The Russian Federation has deferred its decision for the acceptance. Consequently, there has been a fear that the Protocol would not take effect, but the Protocol was ratified by the Russian Federation in 2004 and has since definitely entered into force. In Japan, the Diet approved the Protocol on May 31st, 2002, and deposited the instrument of acceptance with the United Nations on June 4th, 2004.

## The Commemorative Event to Mark the Entry into Force of the Kyoto Protocol

The Kyoto Protocol was adopted at the UNFCCC/COP3 held in Kyoto in 1997, and entered into force on February 16th, 2005. Through these phases, the international undertaking against global warming took a significant step further. In commemoration of this advance, the Commemorative Event to Mark the Entry into Force of the Kyoto Protocol was held at the Kyoto International Conference Hall, where the UNFCCC/COP3 was held, on the same date.

## Topic The Kyoto Protocol Enters into Force



Figure 1 Panel Discussion

The Commemorative Event began with the opening address at 7:30 p.m. in the full 1st-floor Main Hall. Mr. Takano, Senior Vice-Minister of the Ministry of the Environment delivered the opening address. Mr. Yamada, Governor of Kyoto Prefecture, and Mr. Masumoto, Mayor of Kyoto City, delivered the welcoming address. H.E. Mr. Gonzalez Garcia, Chairperson of the COP10, delivered an address on behalf of the guests. After H.E. Ms. Wangari Maathai, Deputy Environment Minister of Kenya, gave a keynote speech, a panel discussion was held entitled "Kyoto Protocol's Entering into Force and its Significance".

Mr. Atsushi Horiba, Chairman, President and CEO, HORIBA, Ltd, participated in the panel discussion as a panelist together with ambassadors and representative celebrities from different countries. He disseminated comments to the world from the standpoint of a manufacturer, stating that efforts and cooperation by citizens, particularly education about the environment, are really important, and mentioned the issue of competitiveness among businesses stating that we should establish conditions where fair businesses are realizable (Figure 1).

From the panel discussion audience, severe and earnest opinions were brought up, such as the following: 1) The fact that the United States has not signed the Protocol means that the country which consumes the largest amount of energy in the world hasn't agreed to it, which dilutes the effect of the Protocol. The panelists should bring into question more seriously the rejection of ratification by the United States, shouldn't they?, 2) We addressed the issue of waste. How can we raise awareness of waste among the general citizens?

Finally, through a Relay of Messages from around the World including Mr. Junichiro Koizumi, Japanese Prime Minister(at that time), events in different countries and celebrations for the Protocol's entry into force were introduced, and the commitment to address global warming in cooperation with other countries was declared. The Commemorative Event ended and closed successfully at 11:00 p.m.

## On Our Activities for CO<sub>2</sub> Reduction

On April 28th, 2005, Japan's Cabinet approved the Kyoto Protocol Target Attainment Plan and presented a policy toward the attainment of targets determined in the Kyoto Protocol. On the other hand, Kyoto Prefecture and City promulgated the Enforcement Regulations of Global Warming Prevention Ordinance. These ordinance aims, for the time being, to reduce greenhouse gas emissions in the city by 10 % below 1990 levels by 2010, and to promote measures for global warming generally and systematically, by specifying the obligations of the city, citizens, companies, travelers, etc., defining the basic points for taking measures against global warming. In addition to the disclosure of the progress of enforced measures, the city is to review and evolve the ordinance in accordance with the social situation every three years, and is to use the PDCA<sup>2</sup> cycle method.

HORIBA has been addressing global warming, mainly through the efficient use of electricity and urban gas, which are the main energies for production activities. HORIBA received the ISO environmental standard approval in 1997, and has been addressing CO<sub>2</sub> emissions factor reduction through corporate activities for environmental management such as turning off lights not in use, controlling room temperatures, or using inverters at electrical facilities. Now, HORIBA is addressing the conversion of electricity and

GHP (Gas Heat Pump) urban gas for all the air-conditioning facilities at its existing factories (Figure 2). It is extremely tough to reduce the total amount to the 1990 level because of plans to expand business quantities. However, HORIBA will do its best to further concentrate its technologies to attain the reduction of the assigned target in coordination with administrative bodies such as Kyoto Prefecture or Kyoto City.

\*2: The PDCA Cycle method is a management method which promotes consecutive improvements in operations by implementing the four stages of Plan-Do-Check-Act in order, and developing the final stage of Act into the next Plan.

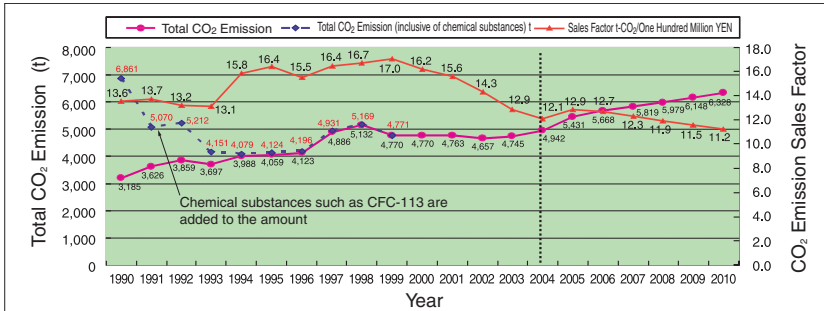


Figure 2 HORIBA: Changes and Estimates of CO<sub>2</sub> Emissions

- \* The chemical substances include such as the specific fluorocarbon (CFC-113). The Kyoto Protocol does not specify them as greenhouse gases.
- \* The Sales Factor is the result obtained by dividing the CO<sub>2</sub> emission (tonnes) by sales (units of a hundred million YEN), so it shows the CO<sub>2</sub> emissions that occurred to achieve sales of one hundred million YEN.

Summary of Comments at the Commemorative Event's Panel Discussion by Mr. Horiba, Chairman, President and CEO of HORIBA, Ltd.

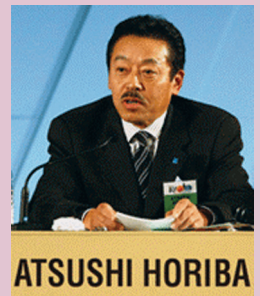
HORIBA develops and produces measuring instruments here in Kyoto. Our instruments even play an important role in the consecutive monitoring project of carbon dioxide gas in the atmosphere in Minami-Torishima. We can see, through this project, that the CO<sub>2</sub> has been rising by 50 ppm over the last 14 or 15 years. In fact, we are aware that rapid changes of this kind are arising globally, and have an impending sense of crisis regarding global warming.

After we began to specialize in emission measurement devices, what became controversial worldwide around 1970 among other things was the issue of the public environmental hazards. Nowadays, vehicles equipped with dramatically innovative technologies are emerging, which produce cleaner emissions than the atmosphere they emit into. I am convinced that behind the success in developing an engine of this kind were the concerted will and effort of both the auto manufacturers and the consumers.

With the entry into force of the Kyoto Protocol today, not only industries but also general citizens should deepen further their consideration as interested parties. Actually, the CO<sub>2</sub> emission by Japan's industries has been unchanged since the fiscal 1990, whereas the emission by categories such as offices, households, or transport, has increased by 20-30%. This implies that the CO<sub>2</sub> emission reduction would not be possible without efforts by the citizens. Then, I understand that education for children is important, so keep on teaching them, from childhood, the actual state of ecosystems. This might be a little of a long way round but teaching it to them and giving them the opportunity to think about it is really important, because the children of today will face bigger issues when they grow up.

From a standpoint of a businessperson, I care about industrial competitiveness. There remain issues such as the fact that, on one hand, a very big developed country has not ratified the Protocol, and on the other, we should think of maintaining an order for fair businesses. I understand that it is really important to promote the mechanism determined in the Kyoto Protocol, and the CDM<sup>\*3</sup> is a very good idea too. Setting clear figures is important, but sole manipulation of figures is insufficient. Obviously the approach should be taken of having every person involved (which would help define the direction for them to go).

I am extremely delighted to have participated today in this event on the very favorable starting day for the future of the Earth. Thank you.



ATSUSHI HORIBA

\*3 CDM is an abbreviation for the Clean Development Mechanism defined in the Kyoto Protocol. The CDM enables developed countries, on which some target figures to limit greenhouse gas emissions are imposed, to count, as credits, the reduced emissions (or increased absorption) resulting from implementing projects for emission reduction (or increased absorption) in developing countries without targets in collaboration with them.

<Author: Masayoshi Kobayashi, Manager of the Quality, Environmental & Safety Management Center>