

Hitachi's Contribution to the Global Environment



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INTRODUCTION

IN 1972, Dennis Meadows, who then taught at Massachusetts Institute of Technology, was part of a team that published a report entitled “The Limits to Growth,” which was the result of research commissioned by the Club of Rome, a private organization formed by eminent businessmen, politicians, and scientists from around the world. This report warned that the global physical limits of resource consumption and environmental pollution would lead to the stagnation of economic growth. Since then, the efforts of the human race have resulted in certain level of reductions in resource consumption and environmental pollution. For example, Tokyo’s photochemical smog levels have decreased, and salmon have returned to the upper reaches of the Rhine.

The third president of Hitachi, Ltd., Kenichiro Komai, participated in the Club of Rome as a representative of Japanese industry from immediately after its foundation. The strong awareness within the Hitachi Group of the need to protect the global environment has been consistent since that time.

When we view Earth as a whole, we see that the absolute measures of resource consumption and environmental pollution continue to rise exponentially. For example, in the 25-year period from 1975 to 2000, the annual consumption of oil increased by approximately 30%, the annual volume of wood pulp

produced increased by approximately 70%, and power generation capacity roughly doubled. The amount of CO₂ emitted during that period increased by approximately 34%. “The Limits to Growth” stated that the driving forces behind these exponential increases were the growth of the population and the expansion of industrial capital (industrial production), both of which are forecast to continue at even higher rates over the next 30 to 50 years. In addition, when we look at individual regions, we see that environmental pollution in emerging and developing nations such as China poses a serious health threat.

In the face of these trends, the human race must not simply curb resource consumption and environmental pollution — it must achieve a peak and then a decline in both. The magnitude of this challenge has never before been seen, neither socially nor technologically.

PEAK IN CO₂ EMISSIONS

The challenge of achieving such a peak can be most difficult in the area of global warming. The rapid expansion in the use of fossil fuels since the Industrial Revolution led to continuously increasing levels of CO₂ emissions. A proposal to “halve global greenhouse gas emissions by 2050” as a worldwide target for curbing global warming was debated at the G8 Summit in Heiligendamm in 2007. It was based on a report prepared by the Intergovernmental Panel on Climate



Hitachi Mine, Ibaraki Prefecture (About 1960)

Change (IPCC). As pointed out by Japanese Prime Minister Yasuo Fukuda in his speech to the Davos meeting at the end of January this year, the achievement of this goal in such a timeframe presupposes that there will be a peak in CO₂ emissions within ten years. Research institutions around the world are attempting to draw up scenarios for reaching this peak as quickly as possible, but the fact that they have not yet reached a consensus makes clear the magnitude of the challenge we face.

Meanwhile, debate on the framework for a post-Kyoto Protocol agreement began in earnest in 2008, and discussion of the problem of global warming was an important part of the agenda for the G8 Summit held at Toyako in Hokkaido in July. We will closely watch the debates relating to target setting at the global level and consider ways that the Hitachi Group companies can contribute to solving the problem.

PROTECTING THE GLOBAL ENVIRONMENT BY DEVELOPING INNOVATIVE TECHNOLOGIES

Hitachi, Ltd. was founded in 1910 as an electrical repair shop attached to the Hitachi Mine of the Kuhara Mining Company. We will celebrate the centenary of our foundation in 2010, and the beginnings of our efforts to protect the environment can be found in the solution we developed to curb smoke pollution at the Hitachi Mine around Hitachi's foundation. At the time, the smoke generated by copper refining blighted the agricultural crops in the area. The founder of the Hitachi Mine, Fusanosuke Kuhara, proposed building a tall smokestack and scientifically demonstrated that such a smokestack would effectively redirect the exhaust smoke by using balloons to observe wind flows



Ceremony for the Signing of the Agreement Concerning the Model Project of Energy Saving and Utilization of Waste Heat/pressure through Electrical Systems in Yunnan Province, China (September 2007)

at various altitudes. As a result, the Hitachi Mine built a 155.7-m tall smokestack on a hill (the top was 328 m above sea level), which dramatically reduced smoke pollution. The efforts of the parent company to build such a tall smokestack to benefit the community have been passed down in Hitachi's corporate credo of "contributing to society through the development of superior, original technology and products."

To address the various environmental problems we face — global warming, atmospheric pollution, water pollution, etc. — it is essential to develop advanced technologies. The global warming problem in particular requires acceleration in the development of innovative technologies that will enable us to meet the challenge of reaching a peak in the emissions of greenhouse gases as soon as possible.

Hitachi is actively applying management resources to the development of innovative technologies, with the aim of becoming a technological leader in the world's efforts to protect the environment.

INITIATIVES IN GLOBAL WARMING PREVENTION, ECOSYSTEM CONSERVATION, AND RESOURCE RECYCLING

At present, the combat of global warming is the greatest global environmental challenge. In addition, thinking back to "The Limits to Growth" shows us that it is necessary to take a broader view of the two constraints of resource consumption and environmental pollution. Hitachi will make maximum use of the personnel and technological resources we have accumulated through continuous previous initiatives to not just combat global warming but also contribute to society through products and businesses that promote conservation of the ecosystem and recycling



View within "Hitachi Inspire Life" Exhibition, Featuring the Environment Protection Seminar, in London (February 2008)

of resources.

Hitachi is united in these initiatives and promotes them globally. An example of a global initiative is the model project of energy saving and utilization of waste heat/pressure through electrical systems in Yunnan Province, China. This project involves the delivery of Hitachi inverter units to reduce energy consumption dramatically. It is a typical example of a "Collaborative Creation Project" on a global scale in which collaboration with local government organizations and agencies is an effective approach. In addition, such projects in China have huge potential for future energy savings and CO₂ emission reductions, enabling us to make substantial contributions to developing nations and to global society as a whole.

INTEGRATED PROMOTION OF ENVIRONMENTAL BUSINESS, ENVIRONMENTAL MANAGEMENT, AND ENVIRONMENTAL COMMUNICATION

Books such as "Green to Gold," written by Daniel C. Esty, a professor at Yale University, have presented various environmental management strategies. Esty discussed the need for and a method of combining the field of "environmental business," in which the achievement of growth potential is a major theme, and the field of "environmental management," in which the thoroughness of risk management is a major theme,

to form an integrated strategy.

Within Hitachi, we are working to integrate environmental business and environmental management on the basis of the concept of "emission neutral," which was put forth in March 2006. "Emission neutral" means the achievement of an equal balance between the volume of "direct environmental impact," which includes the energy used for manufacturing activities and the emissions of greenhouse gases, and the reduced volume of "societal environmental impact," which includes the power consumed by products during their lifetimes and the energy used in recycling end-of-life products. Hitachi aims to become "emission neutral" by fiscal 2015.

Communication relating to environmental management actions is also important, so we will ensure there are plenty of opportunities for discussion with our stakeholders to gain their understanding of a combination of initiatives related to environmental business and environmental management, under the theme of "building a sustainable society together."

PROMOTION OF "ENVIRONMENTAL VISION 2025"

On December 20 last year, Hitachi announced its long-term plan, "Environmental Vision 2025," relating to environmental management. Within "Environmental Vision 2025," we will strengthen measures to combat

global warming and set two specific targets.

(1) Contribute to suppressing CO₂ emissions worldwide by 100 million tons by fiscal 2025 through Hitachi products.

(2) Ensure that all products produced by Hitachi are “Eco-Products” by fiscal 2025.

The first target also means a further increase of reductions in the “social environmental impact” by the use of Hitachi products after we have become “emission neutral” in fiscal 2015. One hundred million tons of CO₂ emissions are equivalent to approximately 7% of total CO₂ emissions in Japan (2005).

“Eco-Products” are products with superior environmental performance, and we are confident that we can achieve our target of “contributing to suppressing CO₂ emissions by 100 million tons” by considerably expanding the range of such products. We are devoting specific management resources to that end.

Supporting the achievement of these targets is in the mind of every person working in Hitachi and in a daily activity. We have inherited the initiatives taken by the entire Hitachi Group in global environment conservation over the past 100 years and are working towards nurturing the human resources that will create new ideas and activities during the next 100 years, under the theme of “Inspire the Next.”

CONCLUSIONS

Hitachi's global environment strategy is focused on three main areas: prevention of global warming, recycling of resources, and conservation of the ecosystem. Its implementation requires a wide range of initiatives covering everything from materials, parts, and components to products, systems, services, and solutions. The Hitachi Group will contribute to conservation of the global environment by developing advanced technologies, and we will unceasingly work to ensure that we can offer innovative technologies to society.

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ABOUT THE AUTHOR

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Joined Hitachi, Ltd. in 1970; appointed Deputy General Manager of the Corporate Planning & Development Office and Hitachi Research Institute in 1997; then appointed General Manager of the Corporate Planning & Development Office in the same year; appointed Executive General Manager of the Business Solution Systems Division in 2001; appointed COO and CTO of the Information & Telecommunication Systems in 2002; appointed Vice President and Executive Officer, General Manager of Legal and Communications in 2003; appointed Senior Vice President and Executive Officer in 2004; appointed Representative Executive Officer, Executive Vice President and Executive Officer in 2006; appointed President of Hitachi Research Institute in 2007; has been Chief Environmental Strategy Officer since December 2007, and an Adviser to Hitachi, Ltd. since April 2007.