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Every business should and could be environmentally motivated: Japan's lessons to combat pollution

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Who am I ?

- ✓ B.A in Economics at Keio Univ. M.E& Ph.D. at Tokyo Univ.
  Doctor course(DEA) at Institut d'Urbanisme de Paris.
- ✓ A long experience in the national environmental administration, at the Ministry of the Environment (vice-minister 2009-2011, director in charge of the negotiations associated with the Kyoto Protocol 1995-98)
- ✓ Local experience at Kitakyushu City government as director of a division in charge of the industrial waste management.
- ✓ Foreign experience in Paris (OECD and French Ministry of the Env.)and Hawaii (EWC).
- ✓ Concerns: Integration of the environmental interests to the society.

Environmental-economic policies
Ecologically-conscious house building, urban planning
Eco-revitalization of pollution-caused damaged areas

Back ground: Necessity of the Eco-business

World population growth up to 9 or 10 billion

Our resources will become more and more scarce.

The earth will become more polluted.

All human activities including ordinary businesses such as *ships* should be more environmentally efficient.

An outline: How can a business be environmentally motivated?

Difficulties

Economic obstacles

Reality of the economy–environment nexus

How to proceed with an eco-business

1. Difficulties to overcome

- Uncertainty associated with the scientific evidences on causes and mechanism
- Lack of or insufficient technology to mitigate the causes
- *Huge economic costs*
- Necessity to be equitable

An example of the difficulties

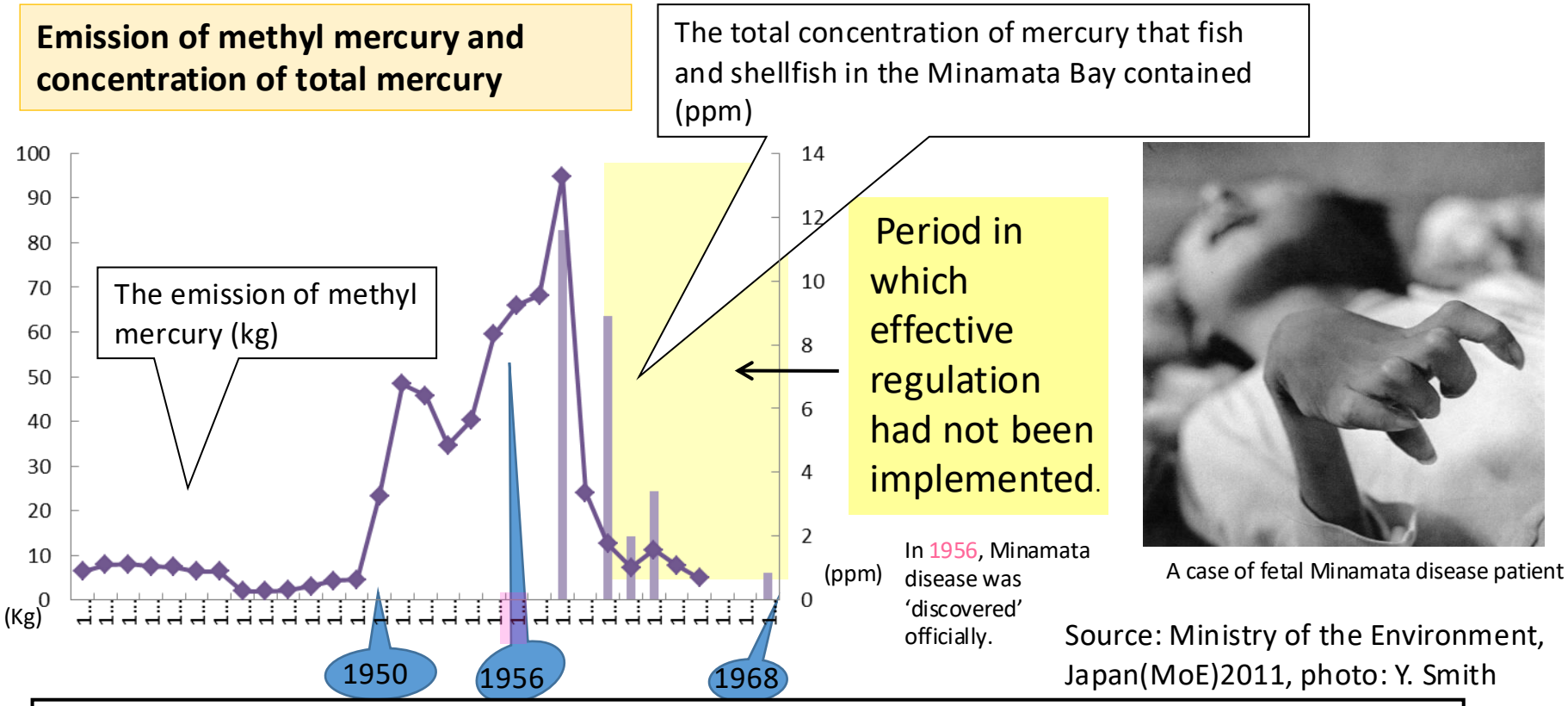
DC motor running an electric fan costs several thousands yen more, yet it consumes 70% less electricity than traditional fans.

The high costs associated with good environmental performance tend to hinder the development of eco-friendly businesses because of people's mind-set that 'it costs nothing to use the environment'.

2. Consider the economy–environment nexus

(1) A former heavy polluter, Chisso Co. Case
--the polluter that caused Minamata Disease

Emission of methyl mercury and concentration of total mercury



Period in which effective regulation had not been implemented.

In 1956, Minamata disease was 'discovered' officially.

A case of fetal Minamata disease patient

Source: Ministry of the Environment, Japan(MoE)2011, photo: Y. Smith

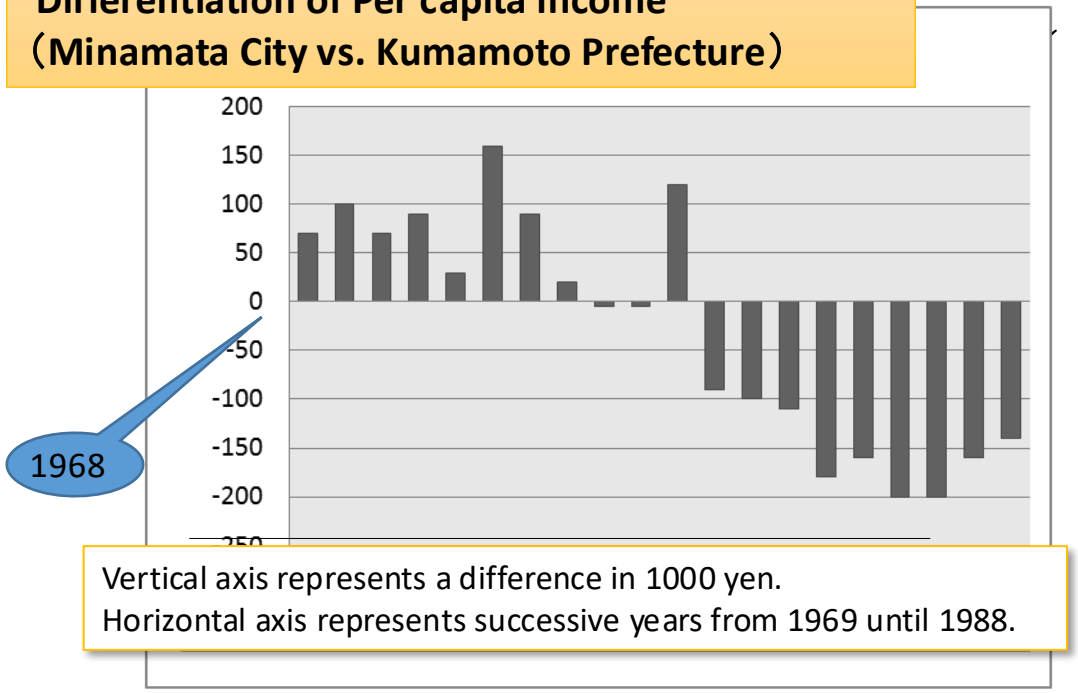
Minamata Disease was caused by water contamination from waste containing organic mercury by a chemical firm, Chisso, which, at the time, was one of the leading corporations in Japan.

Chisso Co. case (2)

- ✓ Chisso has been paying an enormous amount of money in compensation. How much?

  Total: Almost 40 billion U.S. dollars (until May 2011)
  (pollution prevention would have cost 90% less)

Differentiation of Per capita income
（Minamata City vs. Kumamoto Prefecture）



Vertical axis represents a difference in 1000 yen.
Horizontal axis represents successive years from 1969 until 1988.

Minamata, which was once one of the most developed industrialized towns, became a less attractive town as a result.

Source: MoE 1992

(2) Eco-conscious corporations

- ✓ HONDA and Panasonic have industrialized various environmentally-friendly products:
  - low emission vehicles
  - energy saving home electrical appliances

HONDA
Hybrid Car - Insight

- ✓ HITACHI and Sharp have developed environmentally-protective installations:
  - Flue-gas de-nitrification facilities (catalyzers)
  - Photo-voltaic power generators

Solar Panels

- ✓ Environmental services including eco-tourism are expanding.

(3) Macro Economics ①

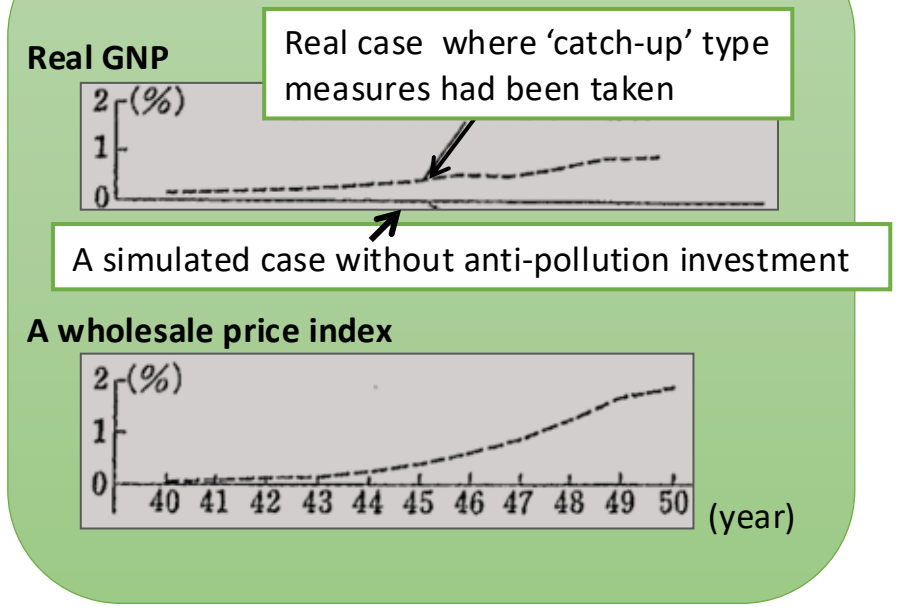
In 1975, the amount of anti-pollution investment represented 18% of total Industrial investment (8.5%; in terms of GDP)

Did this enormous non-productive capital spending impose any negative impacts on the national economy?

➡ **No!**

- ✓ A person's income consists of the expenditure paid by others.
- ✓ Negative effects caused by an increase in price level were more than offset by this expenditure that drove economic expansion.

Economic impact of anti-pollution investment by private sectors



Source: MoE 1978

Japanese fiscal year 45 corresponds to 1970.

Macro Economics②

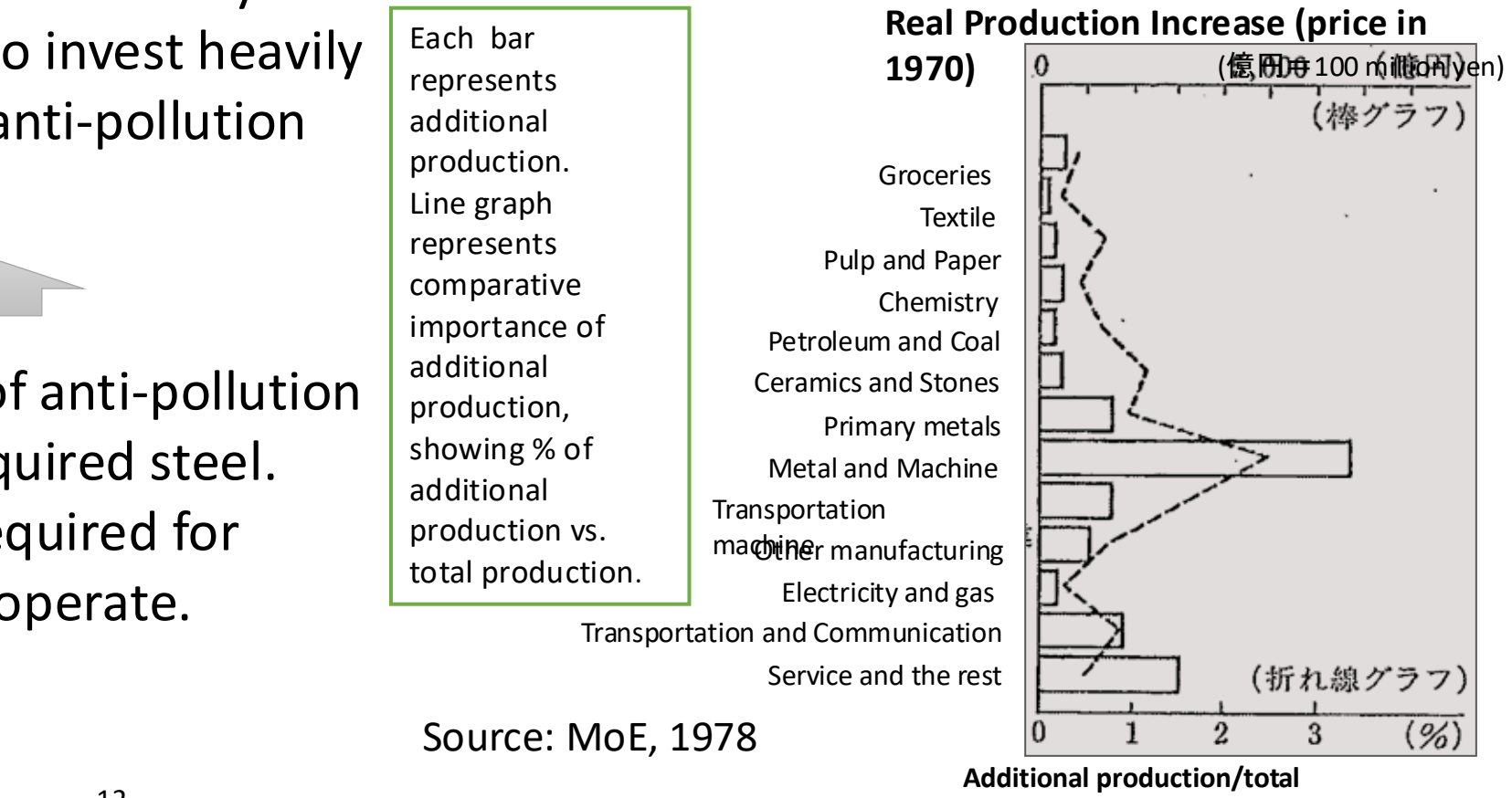
Even heavily polluting sectors (electric power generation, steel production, etc.) profited from the increase in production, despite the fact that they had been obliged to invest heavily under severe anti-pollution regulations.

Construction of anti-pollution equipment required steel. Electricity is required for companies to operate.

Net increase of production by sectors; additional production by anti-pollution investment (measured by an I-O analysis)

Each bar represents additional production. Line graph represents comparative importance of additional production, showing % of additional production vs. total production.

Real Production Increase (price in 1970)

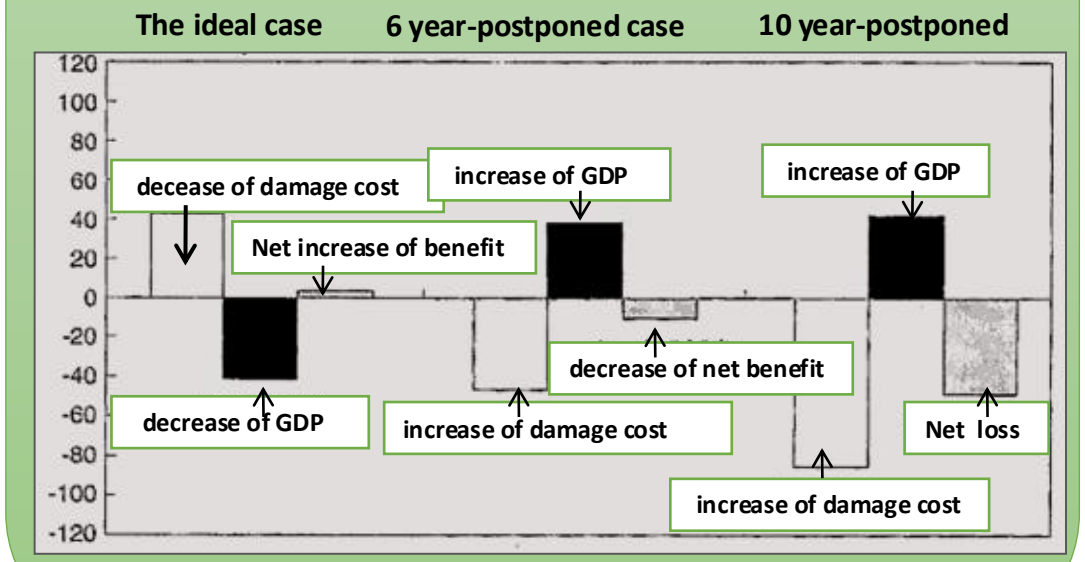


Source: MoE, 1978

Macro Economics ③

- ✓ A historical back-cast simulation suggests that more preventive policy would have maximized economic performance (such as growth rate of GDP), compared with the observed real growth rate.
- ✓ 'Catch-up' type solution was not the best answer at all.

Changes in damage cost and GDP in accordance with the timing of commencement of measures against pollution; a back-cast simulation (comparison with real case)



Source: Dr. Tsuneyuki MORITA, National Institute of Environmental Studies, 1997

Japan's lessons: Basics of eco-business

- Eco-neglecting corporations suffered significant losses in markets, which destroyed regional economies.
- Eco-conscious corporations created new products, and gained substantial ground in Japan's national market.
- Even under stringent environmental policies, the macro economy has expanded more rapidly than under no environmental policies (via back-cast simulation*)*. (However, preventive policies are more economically rewarding.)

Environmental protection produced businesses.
Thus, there was no conflict regarding the eco-eco nexus!

Micro to Macro

Japan's experience illustrates that 'environmental protection is also a business.

If we reduce the amount of 'money for the environment', we aggravate the financial crisis and the global environment.

If we make use of the money for the environment, the macro economy and the environment will be able to recover.

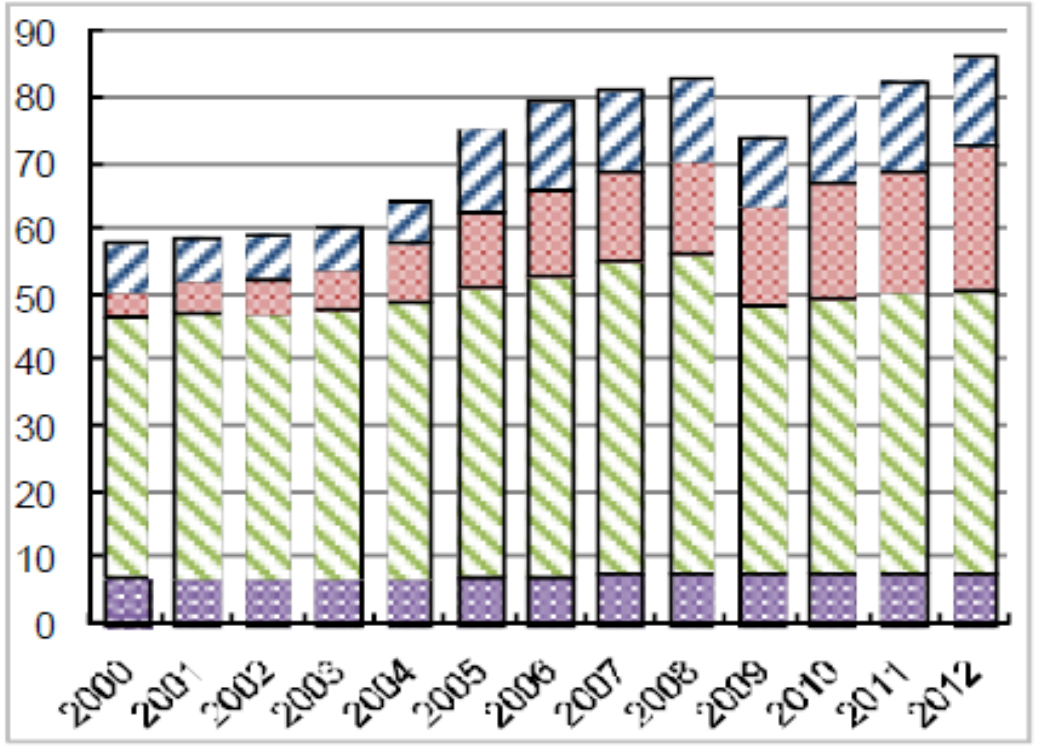
How can we sell goods with a high market price but a low social cost?

If we can succeed in realizing this

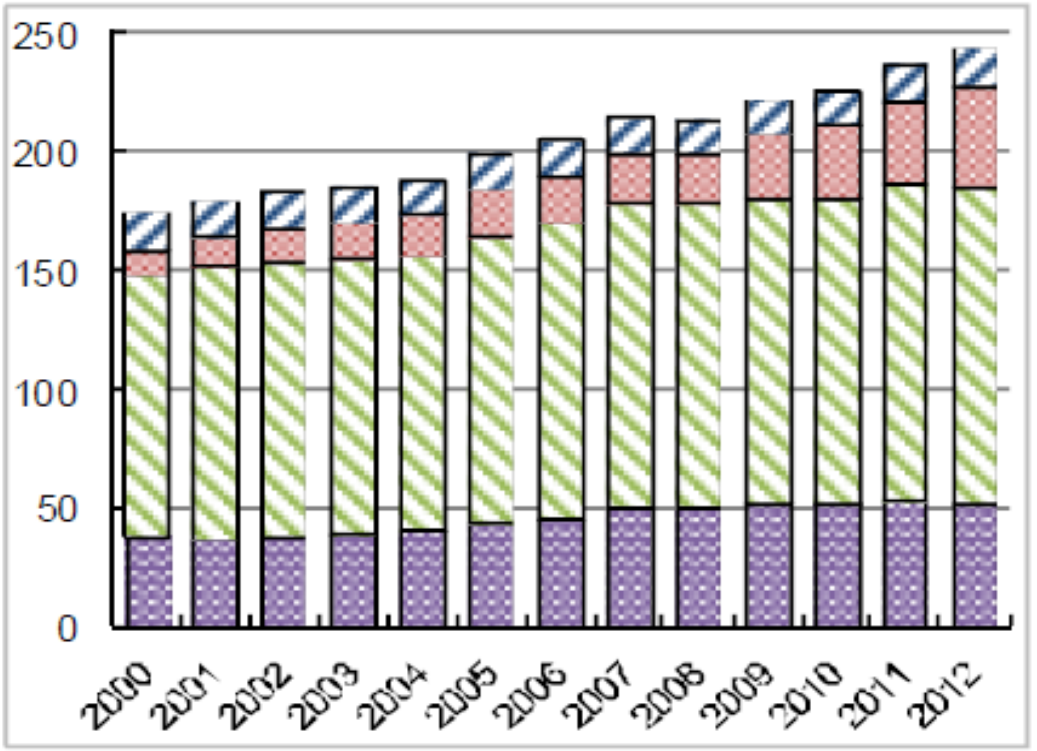
Green Growth

Progress of Eco-business in Japan

Sales of eco-business
(1,000 billion JPY = US$ 10 billion)



Number of employees
(10,000)



A: **Pollution control**

B: **Measures against global warming**

C **Waste management**

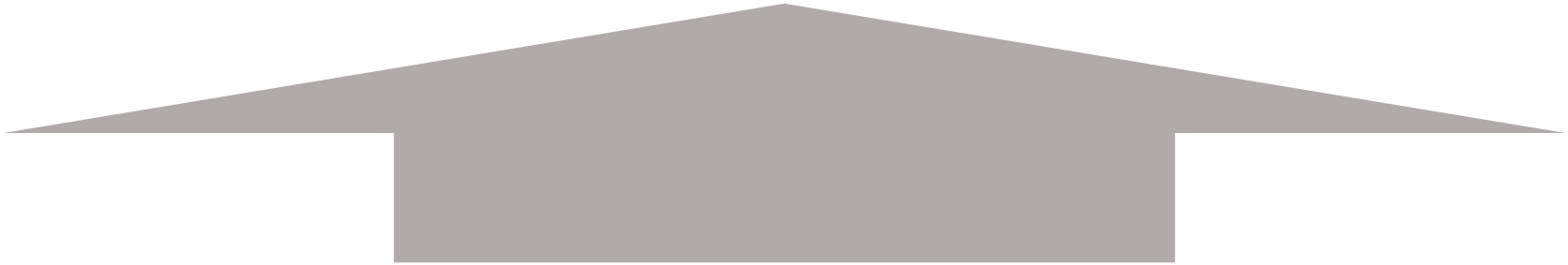
D **Nature conservation**

3. What is ‘Green Innovation’?

New ideas relating to:

- ✓ How to produce goods and services with less environmental impact?
- ✓ How to design products that cause less damage to the environment over their lifecycle (including manufacture, use and disposal)?
- ✓ How to sell such goods and services?
- ✓ How to find clients who appreciate this ‘added value’?

‘Collaboration’ is the key ！



Volume of energy consumption × **Carbon content of energy supply** = **CO_2 emissions**

This simple equation suggests that the collaboration of both sides could produce synergetic reduction.

Target areas for innovative collaboration

Collaboration in the context of urban areas

Waste heat produced by incineration plants can be used by surrounding residential areas and neighboring factories.

Transit oriented development (TOD) supports not only easy transport links for residents but also public transportation systems.

Collaboration in the context of time

Smart grid coordinates supply and demand of electricity and heat with least wasted energy.

Collaboration in the context of value chain

SCOPE 3 management of CO_2 emissions.

Many businesspeople have discussed the ‘knack’ of creating new environmental businesses in the center of Tokyo, e.g., at the ‘Kobayashi gym’.

Directions to overcome the difficulties

- More economically feasible supply of environmental goods and services
- *Empowerment of the demand side to encourage purchases of more environmental goods*
- *Good market to pave the way for the success of the eco-business*

And good policies are also needed to help these efforts to be successful

Regarding policy measures to enhance eco-businesses, the Government has introduced a small carbon tax on all fossil fuels corresponding to their carbon contents. Fewer environmental goods and services tend to be less competitive, and some selected environmentally friendly goods and services become more attractive after receiving financial support from the carbon tax revenue.

Private activities are vital!

More detailed idea to be successful, based upon many experiences

- *Multi-beneficial*
- *Creating multi-agents commitments*
- *Co-evolution with the clients and the society*

Please refer to my recent book entitled「環境でこそ儲ける」(東洋経済新報社）＝“It is the Environment that Produces Profit”.

Multi-benefits

- ✓ After the 2011 earthquake and tsunami and the introduction of the FIT system, Japanese people attached greater importance to the PV system because of its benefits in terms of security, household economy and environmental advantages.

Multi agents' commitments

- ✓ There are a number of Toyota Prius owner associations around the nation, including 'Prius Mania' and the '1000 Miles Club'. They are earnest supporters of the Toyota company, and share technical information (among members and with the company) on how to obtain the maximum benefits from the Prius' high specs.

Co-evolution of supply and demand

- ✓ The Tokyu Railway Company, one of the most influential private railway companies in Japan, has conducted numerous activities to maintain and improve the property value of residents living near their railways. For example, the company has provided general support services to nearby households, called the ‘concierge for houses and lives’, implemented at several selected railway stations. Such efforts have earned the company the support of residents. TOD (transport-oriented development) is an innovative business model created by Japanese businessman Ichizo Kobayashi; this model has been successfully replicated and thus further developed.

- ✓ Both rail and shipping are environmentally friendly transportation modes. This shows promise for the future considering current environment issues, but only if both supply and demand sides continue in their efforts to maintain and improve both modes.

Thank you very much for your kind attention!