



Prosper Portland  
Clean Tech B2B Buyers & Suppliers International Networking Event's Keynote Speech

**Tackling the Global Warming issue in Japan: Its Strengths and Weaknesses**  
**[Full manuscript]**

**Presented by Dr. Hikaru Kobayashi**

Good Evening. My name is Hikaru Kobayashi. I am currently the chairperson of the Environmental Council of Setagaya Ward. It is with great honor to have the opportunity to share my keynote speech with you today.

Today, I will provide an overview of Japan's global warming policy, the efforts of industries and local governments, and its strengths and weaknesses. I hope the information I provide here will contribute to the fruitful developments and collaborations of international environmental business between Japan, the U.S., Canada, and other countries across the Pacific Ocean, as well as cooperation among citizens.

Up until 2011, I oversaw global warming countermeasures for a considerable period at the Ministry of the Environment, the central government of Japan, where I also served as Administrative Vice Minister. However, I am currently teaching and conducting research at the University of Tokyo and at other institutions. For today's presentation, please note that the views expressed here are my own and not the official government position.

First of all, let me give you an overview of Japan's global warming policy.

The Japanese Diet enacted the "Act on Promotion of Global Warming Countermeasures" (hereinafter, referred to as "the Act") in 1998, and since then it has been revised several times to strengthen its contents.

Unlike in the U.S., in Japan, the government—in addition to lawmakers—can submit a bill and ask the Diet to deliberate on it. I was one of the administrative officials in charge of drafting the Act. It stipulates the basics of global warming countermeasures; in other words, it specifies matters that are commonly related to various measures. Since global warming countermeasures are related to an extremely wide range of fields, each measure will be implemented according to the provisions of the Act as well as the provisions of separate laws in each field.

The Act requires the government to establish a national plan, such as the target for Greenhouse Gas (GHGs) emissions reduction for the entire country. The current plan, established in May



2016, targets an 80% reduction by 2050, but will soon be revised to be a 100% reduction by 2050. In addition to the target, the plan also contains detailed directions on how to proceed with various policies and measures in each field.

In addition to national-level plans, the Act stipulates that entities emitting various gases must calculate their emission amount and report it to the government; furthermore, it clearly defines how to calculate each emission. The calculation rules are not only technical but also institutional. For example, one of the provisions states that you can purchase GHGs emission credits (a kind of certificate that indicates the level of emissions) from others who have reduced them, and subtract the amount from your own emissions.

The Act also provides international emissions trading by using so-called Kyoto Credits. That is, the amount of emissions reduced in other industrialized countries or the amount of reductions obtained from developing countries through the Clean Development Mechanism (CDM) can be resold within Japan or used to the country's overall reduction calculation. In Japan, however, as I will explain later, there is no national regulation on domestic emissions trading.

The Act also includes provisions on detailed plans by entities, such as GHG reduction plans by central governments' offices and projects, by local governments in their areas of jurisdiction, and by large corporations. Each entity is required to establish its own plan and implement measures.

The Act also has provisions on policies for the management of forests that absorb CO<sub>2</sub>.

Next, I will explain the mechanism of measures for each significant field that emits GHGs.

Emissions in Japan are calculated based on the so-called SCOPE2 approach. This approach requires that CO<sub>2</sub> emitted from power plants be distributed proportionally to factories, offices, and homes based upon their respective usage.

In Japan, factories account for the largest amount of emissions at 35% of the total. In terms of percentage, emissions from factories are larger in Japan than in the U.S., but the levels are decreasing year by year. A significant proportion of the emissions are from factories using fossil fuels for heat and energy. The use of coal in the steel industry, for example, will have to be greatly reduced in the future. The Act on the Rational Use of Energy (so-called the Energy Conservation Act) requires large factories to reduce energy consumption per unit of manufactured goods by at least 1% per year over the medium to long term.

The second-largest emitter is the transportation sector including automobiles. This accounts for 19% of the total, but in recent years, the amount of emissions has been decreasing considerably. Compared to the U.S., the share of transportation is small. Japan is a compact country (about the same size as the East Coast of the U.S.) and has an extremely well-developed railroad system.



However, the replacement of automobiles with more fuel-efficiency is just as important in Japan as it is in the U.S. In Japan, fuel efficiency standards for automobiles have been established as they have in Western countries. These standards are based on the Road Transport Vehicle Act, and cars that do not comply with these standards cannot be sold. Since automobiles are an international commodity, the strictness of the standards is almost the same as in Europe and the U.S. However, there are still no regulations on vehicle types, such as a ban on the sale of vehicles that do not run 100% on electricity.

The third category is office buildings and stores, which account for 17% of emissions. In order to prevent the unnecessary use of energy in buildings, standards for thermal insulation have been established under the Building Energy Conservation Law. These standards are gradually becoming stricter, but are still lax compared to European countries.

The fourth-largest source of emissions is general households, which account for 15% of the total. This has been decreasing in recent years, as people have become more energy conscious and the environmental performance of home appliances has improved. The insulation standards for ordinary homes are not as strict as in Europe. Furthermore, these standards are not prerequisites for building a home, they are only standards that are expected to be observed. One effective policy in reducing CO<sub>2</sub> emissions from Japanese households is setting standards for the amount of electricity consumed for each home appliance, such as refrigerators and air conditioners; and, these standards are becoming stricter in the long term. These standards are determined based on the aforementioned Energy Conservation Law, and home appliance manufacturers have to follow them.

Finally, about 8% of the emissions are consumed by the power generation sector itself. In Japan, the CO<sub>2</sub> emitted by the power plants is divided among the consumers of electricity according to the amount of electricity they use. The problem is that the CO<sub>2</sub> emitted by power plants has not decreased much. Since the accident at the Fukushima Daiichi Nuclear Power Plant in 2011, safety regulations for nuclear power plants have been tightened, and most of the nuclear power plants are not in operation at the moment, as many of them are undergoing construction to comply with the tightened regulations. As a result, thermal power generation is increasing. Although natural gas has compensated for the decline in nuclear power to some degree, coal-fired power generation has increased considerably. As a result, the amount of CO<sub>2</sub> emitted per kWh of electricity has hardly decreased at all. If this were to be significantly reduced, we could greatly reduce CO<sub>2</sub> emissions from office buildings and households as I mentioned earlier, but unfortunately, this is not the case.

To reduce CO<sub>2</sub> emissions from power plants, Japan has established the Feed-In Tariff (FIT) system like many other countries. This system requires power distributors to purchase electricity from renewable energy sources at a high price for a long period of time. The funds to pay the higher price are borne by all electricity consumers in proportion to the amount of electricity they



use. However, even with this system, the amount of electricity from renewable sources remains only at 18.5% as of 2019, which is low compared to Germany and the UK. Recently, retail sales of electricity have been liberalized, so that even companies that sell cheap electricity but produce a lot of CO<sub>2</sub> can do business. In order to prevent this from happening, there is a regulation requiring that a certain percentage of electricity sold by individual companies must come from renewable energy sources, and this minimum percentage is supposed to be increased over time.

In addition to the measures to reduce GHG emissions, Japan has recently started to implement policies and projects to enhance its resilience to weather-related disasters. This is due to the fact that Japan is one of the most natural disaster-prone countries in the world. With recent climate change, the amount of flood damage has become extremely high. For example, the total insurance payout for damage caused by typhoons (No.21 & No.24) in 2018 was 1.37 trillion yen, and typhoons (No.15 & No.19) in 2019, the total payout was 1.48 trillion yen. Insurance premiums for disasters have also become more expensive for consumers as a result of these enormous payouts.

In November 2020, Prime Minister Suga declared in his policy speech to the Diet that Japan will decarbonize by 2050. Since this target is much stricter than the one Japan has already set and registered with the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC), the government is now assessing how to strengthen its policies to achieve this goal.

These are the high-level global warming measures in Japan. Next, I would like to discuss the activities of Japanese industries and local governments.

Basically, most industries support the aforementioned declaration by Prime Minister Suga, and many industry groups and organizations have issued statements to the effect that they will make efforts to achieve the declaration. Some of individual companies are even more enthusiastic. There are 50 companies that have endorsed the RE100 policy of using 100% renewable electricity for their business by 2050. Globally, there are 288 companies, so Japan has probably the second largest number of companies, after the U.S, committing to this initiative in the world. In addition, 341 Japanese companies have signed on to the Task Force on Climate-related Financial Disclosures (TCFD), which is a commitment to proactively disclose information such as CO<sub>2</sub> emissions from corporate business activities. Since there are 557 companies worldwide, Japan has the world's largest number of endorsers. So, many individual companies are very enthusiastic. I believe the reason for these actions is to attract investment from throughout the world and to increase awareness, acceptance, and sales of their products throughout the world as well.

An increasing number of local governments are issuing decarbonization and climate crisis declarations. Including Setagaya Ward, 289 municipalities have already declared their intention



to decarbonize by 2050. These municipalities account for more than 100 million people, which is 80% of the population of Japan.

As mentioned above, the goal of decarbonization by 2050 is gaining acceptance in society. In a 2016 public opinion poll asking respondents whether they were concerned with climate change, 87% of them indicated “yes”, that they were concerned about climate change, while only 13% said “no.” I believe that the number of Japanese who deny climate change is much lower than in the U.S.

Finally, I would like to explain the strengths and weaknesses of Japan's global warming countermeasures. When the two sides of the Pacific Ocean join hands in environmental business, it would be great if Japan could make good use of its strengths to make up for its weaknesses. However, the strengths and weaknesses mentioned here are mostly from my own observations, so there is much room for discussion. Please take another opportunity to listen to the opinions of other Japanese experts.

First, as for strengths, in general, Japan has a high level of environmental technology. For example, Japan was the first country to commercialize hybrid passenger cars, and it was also the first country to start mass production of solar power panels. There are not many commercial solar power plants due to the lack of flat land, but in terms of household use, Japan is probably the world's best. The same is true for the commercialization of lithium-ion batteries and the development of white LEDs for lighting. The number of fuel cells in use is also the largest in the world. There are 300,000 fuel cells in use in homes.

In addition, a large portion of Japanese people live and work in a narrow, densely populated area of land that extends between the Tokyo and Osaka regions. This enables the government to focus its infrastructure resources in this populated region where it can be maximized. Thus, as anyone who has traveled to Japan can attest, Japan’s transportation network is highly efficient.

Another advantage is the strong social cohesion. If there is a consensus on goals and actions to be taken, people from all walks of life in the nation will not have much resistance to act and cooperate according to that consensus.

However, there are many weaknesses as well. Social implementation of technology is slow, and it will take twice as long to do the same thing as it does in Europe. As a result, the total amount of GHG emissions in Japan has not decreased much since 1990. In the past few years, we have finally begun seeing a decreasing trend.

I’ve identified five weaknesses behind this not-so-great performance:



First, as I have already mentioned, in Japanese society, safety comes first, and few people are willing to take risks. People tend to avoid being criticized by others, so it takes a lot of time to start anything new.

Secondly, about half of Japan's CO2 emissions come from burning fossil fuels for heat and using coal for manufacturing, such as for steel making, and as long as this dependence on energy-consuming industries continues, it will be difficult to reduce emissions.

The third weakness is the presence of coal-fired power plants. About half of the remaining emissions come from the production of electricity, but coal-fired power plants have been substituting for nuclear power plants (which are now mostly idle) because coal-fired power plants are cheaper. And this is why CO2 emissions are not decreasing much.

The fourth is that the policies are not stringent enough. Japan does not have emission quotas for every plant like in Europe and some states in the U.S. And both carbon taxes and energy levies are low, unlike major European countries. In addition, other regulatory measures are not necessarily regulations for environmental purposes; many of them are diverted from regulations that were originally set for other purposes, and in my view, there is still a lack of political will.

The fifth weakness is that Japan's policies focus on supplying clean energy at low prices, and on supplying products and equipment with an excellent energy-saving performance at low prices. The government avoids policies that would force the demand side to use clean energy, products, and equipment that would result in higher prices. If the price becomes too high, business will suffer. They are overly focused on maintaining the economy by offering good products at low prices. Thus, they tend to postpone reducing their environmental footprint.

These are the five weaknesses that I've identified. It is my hope that the wisdom and experience of international cooperation can compensate for these weaknesses. With that, I would like to conclude my keynote speech. I hope that today's event will be a success, and you will bring further prosperity to the environment and to business.

-----  
Copyright © 2021 Prosper Portland & Dr. Hikaru Kobayashi. All Rights Reserved. Reproducing all or any part of the contents is prohibited without the author's permission. The original manuscript is in Japanese, and the English translation is prepared by Prosper Portland. If there is any discrepancy between the original and translation, the Japanese version shall prevail.