

# Global Future Council on Japan (2019–2020) Summary Report

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This report summarizes the discussions on sustainability for the planet, human society and Japan that took place in the Global Future Council on Japan from October 2019 to September 2020.

The discussions were stimulating and productive, with council members sharing their diverse views and opinions based on their knowledge, experience and perspectives. However, there were differing views and opinions among the members, which made it difficult at times to consolidate them in this report. In such cases, the Co-Chairs used their discretion. Therefore, we would like to add that not all members agree with the entire content of this report.

The Co-Chairs hope that this report will be read widely, both in Japan and abroad, and stimulate discussion on how Japan can further contribute to global sustainability while, at the same time, enhancing the sustainability of its own society.

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Global Future Council on Japan 2019-2020

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# How COVID-19 questions us in the Super Year 2020

In 2020, which was supposed to be the Super Year of Sustainability, humanity is grappling with a new coronavirus. We cannot dismiss it as a coincidence.

The rise of new zoonotic diseases stems from an expansion of human activity that is testing the limits of the planet. The coronavirus pandemic has revealed the merits and demerits of globalization, the dysfunction and conflicts of interest in international cooperation, and the seriousness of the disparities and inequalities in the domestic as well as international contexts that lie behind it. The ravages of coronavirus are a sharp reminder of the danger to the sustainability of our planet and human society in terms of both cause and effect.

The crisis of the global environment is steadily approaching us like a time bomb, even in the midst of the coronavirus pandemic. Unless we can find a way to overcome it, new and more serious threats will continue to assail us even after the pandemic.

Sustainability is not something that should be put on the back burner under the excuse of the pandemic; rather, it is a priority for all of humanity that must be addressed with the greatest urgency. Nations, local governments, businesses and other actors must share scientific knowledge and work together for the common good, consistent with global environmental sustainability and in pursuit of a just and stable human society.

Around the world, awareness of sustainability issues is being shared across political systems and positions, and discussions such as Green Recovery and the Great Reset are taking place. This trend is likely to accelerate in the future.

For Japan, the global environmental crisis is no stranger. This year's floods in Japan are symbolic of it, as we see flood victims struggling with both the fear of COVID-19 infection and extreme heat during their reconstruction work. If Japan's society is to thrive, it must ensure the sustainability of the planet and human society, which is a fundamental premise.

Meanwhile, Japan has long been unable to overcome its domestic structural problems. Over the past three decades, its economy and industry have lagged behind the world's growth (economic sluggishness). During this period, as evidenced by the increase in relative poverty rate and the decline in the international ranking on the gender gap, even the diversity and inclusiveness of societies seem to have regressed (sense of blockage). Finally, with the rapidly declining and ageing population, there will be an enormous strain on society and the economy (shrinkage of society). We in Japan must tackle both the global environmental problems and the triple burden of sluggishness, blockage and shrinkage at the same time.

We believe that the solutions to these two dimensions of problems are not contradictory, but synergistic. The world is in the process of transforming its social and economic systems to be more sustainable. By becoming a leader in this global systemic transformation, Japan can gain momentum for new economic growth, increase the diversity and inclusiveness of its society, break the stagnation and solve the problems associated with shrinkage. We must therefore design and realize our society and economy in this direction.

Will we take on the serious challenges at home and abroad head-on, or will we continue to suffer the triple burdens and fall behind the rest of the world? Japan faces a crossroads, perhaps its final choice.

We, the Global Future Council on Japan, started out with the idea that we should examine Japan's situation – sometimes avoiding change by engaging in inward-looking and short-sighted discussions, and drifting without a clear vision of the future – and search for clues to a prosperous and sustainable path forward for both the world and Japan through systemic changes.

# Sustainability of the world and Japan (problem awareness)

We must recognize and address not only climate change, but also the crisis of the overall global environmental system.

## 2.1 The looming crisis to the sustainability of human society

We are living in the most serious crisis and transitional century in the 10,000-year history of human civilization. This is not a matter of worldview, but a scientific and objective recognition of the reality of the destruction of the global environment by human activities.

Humanity was able to develop societies and civilizations across the world with a significant increase in population due to food security through agriculture and the expansion of social activities first made possible by the stable environment of the Holocene, the interglacial epoch of the last 12,000 years.

However, after the Industrial Revolution, especially since the 1950s, the great acceleration of population growth and economic activity created a huge environmental burden that has destroyed the Holocene global environment and made it unstable, leading to such phenomena as global warming and loss of biodiversity. A new geological age in which humans dominate the global environment, the Anthropocene, is said to have arrived.

The global environment is a dynamic system with complex interconnected processes such as global warming, biodiversity and atmospheric, water, nitrogen and phosphorus cycles. Its degradation will accelerate as its resilience is lost beyond the tipping point, and then the Earth will irreversibly shift to another state. Signs of this are already evident in many places, and we are approaching the cliff of the crisis.

In the Arctic, for example, where unusually high temperatures of nearly 40°C were recorded this year, rapid warming has been accelerating the melting of sea ice, ice sheets and permafrost, and vast areas of its boreal forest have been burning. The melting of heat-reflecting ice reveals the surface of the water and ground, which absorbs vast amounts of solar energy; the melting of permafrost releases massive amounts of greenhouse gases (GHG); and the burning of huge boreal forests means black carbon emissions as solar heat-sinks as well as the loss of carbon dioxide sinks.

Elsewhere, nearly 20% of the Amazon rainforest has been destroyed due to intense development and it is feared that, with about 10% more development, it will cross the tipping point and start becoming a savannah. This cycle of accelerated global warming and destruction of ecosystems has been occurring in many parts of the world.

In Japan, too, the effects of global environmental degradation are becoming more pronounced. Heavy rainfall, powerful typhoons, extreme heat and other extreme weather events are striking it every year, claiming many lives and severely damaging the economy and our way of life.

When we think about the sustainability of the world, we must recognize and address not only climate change, but also the crisis of the overall global environmental system.

## 2.2 The need for socio-economic system transformation

“ Averting the crisis will require fundamental changes in our socio-economic systems to drastically reduce the environmental burden.

The global environmental crisis stems from today's socio-economic systems, which create a huge environmental burden. Every day, our society and economy continue to destroy nature, which is the foundation of our society and economy, extracting and using vast amounts of natural resources, emitting huge amounts of greenhouse gases, and disposing of plastics, pesticides, nitrogen and phosphorus (chemical fertilizers), turning forests into farmland and cities, and overhunting sea and land organisms.

Averting the crisis will require fundamental changes in our socio-economic systems to drastically reduce the environmental burden. Moreover, such efforts must be made in a way that eliminates poverty, inequality and injustice without sacrificing people's wealth and well-being. The crisis is imminent and the time left is limited.

The systems that put the greatest pressure on the global environment, such as energy, food,

the resource cycle (which needs to transition to a circular economy) and cities, are the highest priority for change. For such transitions to succeed, we also have to change our social infrastructure and elements such as science and technology, finance, political processes and people's attitudes and behaviours at the same time.

Around the world, as understanding of the global environmental crisis and efforts to solve it advance, a variety of systemic change initiatives are being undertaken, including renewable energy mainstreaming, a review of food production and consumption, and the conception and experimentation of sustainable urban models and circular economies. On the other hand, there are deep-rooted obstacles to these efforts, such as a lack of understanding, resistance from the existing regime, and the difficulty of coordinating across borders and sectors; and the progress of these efforts varies greatly from country to country, region to region, industry to industry, and company to company.

## 2.3 How to ensure the sustainability of Japanese society

The future of Japanese society is inextricably linked to these global environmental crises and to the sustainability of human society. As mentioned in Chapter 1, global environmental protection and solutions to domestic and economic problems should not be viewed as a trade-off between the two, but rather as issues that can be solved together.

For example, moving away from fossil fuels through renewable energy sources will improve the balance of payments, (which will worsen due to a declining and ageing population), provide an infrastructure of distributed power sources that is more resilient to disasters, and reduce the security risks associated with energy procurement. It will also encourage the development of renewable-energy-related technology and industry, which is a growing market, and enhance opportunities for business and improved energy and cost competitiveness in the global decarbonized supply chain.

Conversely, delays in decarbonization will create a range of problems, including increased international condemnation, stagnation of related industries and technology, and exclusion from the international supply chain.

Transforming the food system and transitioning to a circular economy is also a great opportunity for Japan – which is dependent on other countries for much of its food and resource supply – to reduce procurement risks, improve its balance of payments

and develop related technologies and innovations. If Japan fails to make this transition, it could have trouble importing food and procuring resources in the near future.

Japan's population problem is also closely related to the global environment. Reproduction of human beings, a living species, cannot be unrelated to the environment. The degradation of the global environment and the resulting food and water shortages and social instability could be severe stresses that have an adverse effect on the birth rate. Moreover, if the environmental crisis causes a major wave of migrants and refugees across Asia, it will have an impact on Japan as well. Conversely, successful systemic change could avoid these risks and make society more inclusive, which would help mitigate population decline. Also, if cities can be made more compact, they can be made both less environmentally burdensome and more senior-friendly.

Thus, there is no trade-off between the sustainability of the Earth, human society and Japanese society; rather, they are on the same path. For the sake of Japan's prosperous future, we must work to transform the systems to make the Earth more sustainable.

In the next chapter, we discuss the systemic change that Japan must make, the factors that hinder it, and the ways to break through it.

3

# Japan's systemic transformation: The structure of obstacles and how to break through them

The following issues are associated with the socio-economic system transformations that Japan should address and the social factors that support these transformations.

## 3.1 Major system transformations

The four priority areas for system transformation (as mentioned in the previous chapter) are important not only for the Earth and the sustainability of the world, but also for the sustainability of Japanese society and for solving domestic problems. Although the discussions in the Council focused on the energy system, other systems have various impediments to their

transformation that also need to be overcome.

As for the energy system, Hiroko Kuniya, a member of the Global Future Council on Japan, submitted a case study paper on “Japan’s Global Warming Countermeasures and Energy Conversion” (see Appendix).

### Energy system

The energy system (e.g. power generation, industry, households, transport etc.) emits most of the greenhouse gases (mainly carbon dioxide) that cause climate change. Recent scientific findings, as represented by the IPCC report, show that the Paris Agreement’s 2°C target puts the climate crisis at high risk of escalation in the latter half of the century and that we must achieve the target of at least 1.5°C, i.e. decarbonization by 2050. More and more nations, local governments, businesses and other entities are trying to comply with this 1.5°C target.

Japan’s current energy policy is based on the 2°C target, not the 1.5°C target. The plan for the 2°C target has been criticized for relying on the planned restart of nuclear power plants, which would be difficult. The government’s policy to continue coal-fired power generation to make up for the shutdown of nuclear power plants after

the Great East Japan Earthquake has also been criticized around the world.

For Japan, which relies on other countries for fossil fuel supply, a switch to renewable energy would have many benefits, including an improved balance of payments, reduction of geopolitical risks, improved disaster resilience from decentralized power sources, and local economic stimulation in renewable energy locations. On the other hand, delays in decarbonization and conversion to renewable energy will have a number of negative effects, including the decline of related industries and technology, as well as a dropout from the decarbonizing global supply chains. It is imperative for Japan to break free from dependency on coal and other fossil fuels, and promote decarbonization and transition to renewable energy.

In response, Japan has adopted energy conversion policies such as the feed-in tariff (FIT) system to increase investment in renewable energy, liberalization of the electricity retail market, and separation between generation and transmission of electricity. In response to international criticism, the government has recently announced the decommissioning of old-style coal-fired power plants.

However, these policies have not been swift enough and, above all, policy-makers have been hesitant to shift the basic policy to the

1.5°C target, which would set a concrete path to decarbonization. Nevertheless, progressive companies, organizations and local governments are beginning to move towards decarbonization by 2050.

A great deal of knowledge and experience is accumulating around the world on the direction and methods of the energy transition. The benefits of decarbonization to Japan are evident, and the country should set the 1.5°C target and steadily eliminate the impediments to accelerating the system transformation.

In this context, we recommend the following actions:

- The necessity and roadmap of decarbonization is clear, and the first step for Japan is to share the 1.5°C target (i.e. decarbonization by 2050) with the public as the national principle and to create specific strategies to achieve it.
- Japan can/should accelerate decarbonization process by the best use of already available technologies. At the same time, it is important to continue research and development of new technologies.
- In the electric power sector, there should be thorough and accelerated market reforms, measures to promote renewable energy (especially offshore wind) and drastic reductions in CO<sub>2</sub> emissions from thermal power (if coal-fired power is not to be abolished, then a realistic path to its decarbonization should be presented).

- In the industrial sector (materials industry etc.), in addition to energy conversion, curb GHG emissions through resource recycling (recycling of steel = shift from blast furnaces to electric furnaces etc.). Industrial structure has to shift from the high environmental impact model to the low environmental impact and high value-added model.
- In the transport sector, accelerate the shift from gasoline to electric and hydrogen-powered vehicles, expand the use of public transport and bicycles, and promote the introduction of car-sharing and mobility as a service (MaaS).
- Introduce full-scale carbon pricing (e.g. a substantially high-rate carbon tax) that is both economically efficient and environmentally friendly through market mechanisms to promote an energy transition.

## Other system transformation: food, production and consumption (resource cycle), cities

In Japan, the issues of global warming and energy systems are relatively well recognized by the government, businesses and the public, and various discussions and practices are taking place. On the other hand, other global environmental crises (biodiversity, oceans, fresh water etc.) and system transformation (food, resource cycle, cities) have not been sufficiently recognized or discussed widely, and lag behind in international discussions.

Food systems place the greatest burden on the global environment, including the destruction of forest ecosystems, massive pollution from chemical fertilizers (nitrogen and phosphorus), pesticides and antibiotics, depletion of biological resources due to overfishing, and GHG emissions from food production. At the same time, agriculture and fisheries are being severely damaged by global warming and ecological disturbances in many parts of the world, causing uncertainty about future food supplies. Transforming food systems into a sustainable form is of critical importance for the sustainability of the planet and human society.

Linear production and consumption systems extract, use and dispose of large amounts of resources, creating risks from the massive destruction of nature and the depletion and uneven distribution of resources. We need to make a major shift to a circular economic system (circular economy) to dramatically reduce the burden on the global environment and the risk of resource depletion.

Urban areas are home to more than half of the world's population and will continue to swell even more in the future, having a huge environmental impact on daily life (homes and facilities), movement (transport) and production (offices and factories). Urban systems need to be transformed to reduce their environmental impact by emphasizing public transport systems, making buildings greener and more efficient in waste management and, at the same time, restoring green spaces and water flows so that people can live comfortably regardless of their age and income.

These systems have significant implications for the future of Japanese society. Since Japan relies on

imports for more than 60% of foods and most of underground resources, the sustainability of related systems is literally a matter of life and death. In addition, Japan's rapidly declining and ageing population will inevitably lead to restructuring of national land-use and urban space, which will require compact cities and ecosystem restoration in urban spaces.

Solutions for both sustainability and domestic problems are in the same vector and can be executed simultaneously. This will require the participation of all stakeholders in these system transformation efforts, and a shared understanding of the issues and deeper discussions.

In this context, we recommend the following actions:

- We in Japan need to share the understanding that the global environmental issue is a crisis of the entire Earth system consisting not only of climate change, but also of biodiversity, oceans, fresh water etc., and that the stability of the Earth system as a whole must be maintained.
- We need to work on the transformation of socio-economic systems that have a major environmental impact, among which are not

only energy, but also food, production and consumption, and cities. To achieve this, we need to create a platform to discuss and implement the transformations involving a wide range of stakeholders.

- As the first step, the key actors, such as governments and corporations, need to take the lead on this attempt through policy, risk disclosure or dialogue with the public and shareholders, and play a role in spotlighting the discussion in Japan.

## 3.2 The social foundation to support the system transformation

To promote the above-mentioned systemic changes in a sustainable and forceful manner, it is necessary for society to change in terms of technology, financial and capital markets, people's

consciousness and behaviour, and political processes, which are critical to realizing the systemic transformation.

### Technologies and social arrangements

The use of technology is essential for any system transformation. In particular, information and communication technologies can have a significant impact on all aspects of society, from science and technology development, to policy decisions, to people's behavioural choices. However, new technologies can help to create a sustainable and prosperous society only if there are social transformations to leverage them, such as appropriate coordination of conflicting interests, policies, investments, relevant industries and social acceptance.

hindered not only resolution of the sustainability issues, but also economic growth, industrial upgrading and resolution of other domestic issues.

Japan has an excellent accumulation of science and technology and capabilities to further develop the country. At the same time, elsewhere in the world, vast amounts of science and technology are being developed every day. The key to socio-economic transformation through the use of science and technology is the creation of an environment and a transition to a society that can leverage them.

There is a high expectation in the Japanese government and industry that science and technology, especially information and communications technologies, can solve social and economic problems, as can be seen in the Society 5.0 initiative. However, Japan lags behind the rest of the developed world in the use of digital technology, and there is deep-rooted resistance to making use of science and technology to enable the social transition, as seen in the resistance to the sharing economy and the digitalization of various administrative processes (e.g. alteration of practices relying on stamps and paper). This resistance has

In addition to science and technology, social arrangements such as regulations, incentives, market systems, behavioural science, business models and market design are effective and necessary for system transformation (hereafter, referred as the "social technology").

These social technologies have already been developed and put into practice around the world to promote system change, including regulations on emissions and development, carbon pricing, various business models of the sharing economy, levy and deposit systems, and market designs and

nudge methods. Japan can accelerate the systemic change by further utilizing this accumulated knowledge and experience.

However, reluctance to use social technology to solve social problems is often due to social and

economic structures that are averse to change, due to considerations of vested interests and stereotypes. As with science and technology, the key to making the most of these social technologies is to create an environment and make social reforms that allow them to be used for systemic change.

In this context, we recommend the following actions:

- Changing policies and social systems drastically to maximize the use of new and existing scientific and social technologies
- Mobilizing investment and human resources to develop new scientific and social technologies that can help solve sustainability issues
- Not persisting only with locally made

technologies, but instead promoting extensive cooperation with overseas partners in developing and implementing technologies

- Mitigating the friction of socio-economic transformations by carefully addressing those who are anxious as their interests are undermined by changes caused by technologies

## Financial and capital markets and corporate governance

“ Assessment and reporting on natural capital, whose attempt has just begun in Japan and the world, should be enhanced so that its reflection in the decision-making of all economic entities can promote a wider systemic change.

Financial and capital markets play a major role in solving sustainability issues through their economic resource allocation function and control over corporate governance. In recent years, pressures from the capital markets have been changing corporate behaviour with respect to sustainability. This change, at whose epicentre are the ultimate beneficiaries of investments (primarily individuals) and their fiduciaries (institutions with fiduciary responsibilities such as pensions and insurance), is driven by the institutionalized and globalized capital markets. In addition, the role of people in the financial industry leading such a trend is important.

In Japan, the capital markets are increasingly oriented towards sustainability, as can be seen in the introduction of ESG investments by institutional investors, including pension funds, and in strengthening corporate disclosures (e.g. the Climate-Related Financial Information Disclosure Task Force, or TCFD). Banks and other lenders, under pressure from the capital market, are also moving to environmental consciousness (e.g. suspending new loans to coal-fired power plants).

However, it is not certain that Japan's financial and capital markets will go beyond simply responding to pressures from abroad and proactively drive companies and industries towards sustainability. In Japan, despite gradual improvements, there are long-standing problems in the governance of corporations and investment, including cross-shareholdings, lax fiduciary responsibilities of corporate executives and institutional investors, and informal but effective corporate control by the employee community under the lifetime employment system. With respect to governance of the issue of sustainability, uncertainty remains about whether corporate executives and institutional investors can meet their fiduciary responsibilities and accountability to the ultimate beneficiaries (e.g. pensioners and shareholders) as well as to society, and whether financial and capital markets can control this effectively.

Moreover, the governance structure of Japanese companies, industries and investments is tied not only to the financial and capital markets, but also to other social structures, such as employment practices, labour markets, politics and government.

As the public is the biggest beneficiary of investment in Japanese companies, further structural reform of corporate governance must be achieved to simultaneously strengthen efforts to ensure sustainability and solve domestic issues through higher investment returns.

Another important way to promote sustainable corporate management is to evaluate and report on the relationship between corporate activities with the global environment (environmental impact and environmental risks) and reflect them in the decision-making of companies and stakeholders (shareholders, investors, customers, business partners, etc.). In this regard, the Climate-Related Financial Information Disclosure Task Force (TCFD) is working on the climate change aspect, and more than 300 Japanese companies have already agreed. However, global sustainability depends on the stability of the entire Earth system, and it is necessary to evaluate and report on the broader interaction between corporate activities and the Earth.

In response to this, the idea of “natural capital” comprehensively captures the environmental impact of human activities and, in addition to national-level evaluation methods, information disclosure using the Natural Capital Protocol has been proposed at the corporate level. However, assessment and reporting on natural capital, whose attempt has just begun in Japan and the world, should be enhanced so that its reflection in the decision-making of all economic entities can promote a wider systemic change.

In this context, we recommend the following actions:

- Strengthening the disclosure system for assessing not only climate change (e.g. TCFD), but also the overall environmental impact and risks (especially the Natural Capital perspective) associated with companies and investments; and cooperating with science to ensure the objectivity and rationality of such disclosure

- Developing and introducing know-how, systems and infrastructure to monetize environmental impacts and risks, and incorporating them into corporate valuations
- Transforming the entire corporate, industry and investment governance structure, including enhanced regulation, to strengthen fiduciary responsibility and accountability of fiduciaries and corporate management to the ultimate beneficiaries of investments and corporations

## People

Fundamental and broad systemic change cannot be achieved without people's support and behavioural change. People constitute society in many ways such as voters, consumers, investment beneficiaries, business persons and workers, and their attitudes in various situations – like voting, purchasing, investing and working – will determine the success or failure of the system change.

While awareness of global environmental issues is increasing among Japanese people, we have to say they have not become strong supporters of sustainability issues, which results in Japan's sluggish approach to sustainability compared with other developed countries.

For people in the Anthropocene – the most critical and difficult phase of human history – to rightly recognize and act against the circumstances, they need a new view of the world, and a new sense of values that redefines the relationship between humans and nature, and between themselves and society or other people. To enable it, the role of the humanities, arts, religion and the social sciences that stimulate and direct people's cultural and inner activities will be important. Japan has a responsibility to present to human society the universality of its unique cultural accumulation that can contribute to human sustainability by overcoming its language barrier and insularism.

In this context, we recommend the following actions:

- Providing information: To substantially increase the quality and quantity of information on the sustainability crisis for the planet, humanity and Japan and related global trends, and to foster a sense of urgency and understanding among people. Quality means providing more scientific and comprehensive information on global environmental issues and their impact on the human sustainability. Quantity is to enlighten people through all channels – politics, media, academia and education – by constantly referring to it and discussing it from such a perspective.
- In the fields of humanities, arts, religion etc., to actively discuss and present a view of the world and sense of values based on the reality of people living in an era of serious global environmental crisis.
- Leadership and providing visions: Leaders of society should present a comprehensive and

concrete vision of a sustainable future and the path to achieve it, and build consensus through national debate and political processes.

- Offering wide variety of options for participation: Preparing a wide range of options in various fields that allow people to participate more easily in the realization of a sustainable society. Such options are needed in politics, consumption, investment and occupation selection. For example, political parties with sustainability as a central part of their policies, an assortment of goods and services with a lower environmental impact, and companies and occupations that are consistent with a sustainability orientation. The options should not be superficial, but rather substantive and easy to choose on the basis of sufficient and accurate information, accessibility and affordability.

# 4

# Leadership for systemic transformation: Potential of the multistakeholder coalition

As we have seen above, the systemic transformations to address the global environmental crisis and make the world and Japan sustainable require fundamental and board-level changes in the socio-economic system and people’s mindsets. To achieve this, not only governments, but also a diverse range

of stakeholders, including businesses, the media, academia and consumers – who share an awareness of the crisis – need to rise to achieve the critical tipping point for socio-economic transformation. This chapter discusses the potential of the multistakeholder coalition as an important key to this.

## 4.1 Constraints of the framework of national governments and the emergence of multistakeholder coalitions

“ If a wide range of actors pioneering initiatives in various areas of society emerge and work together across the border, they can be a major force for promoting Japan’s socio-economic system transformation

Various attempts at international cooperation, which is essential to solve the global environmental crisis, have been made, mainly by national governments. At the Earth Summit in 1992, two major international agreements on the global environment – the Convention on Climate Change with 197 signatory countries to date and the Convention on Biological Diversity with 193 countries – were adopted. The Kyoto Protocol was adopted in 1997. However, despite such efforts, we cannot yet expect a fundamental solution either to climate change or biodiversity loss.

Moves to break through this situation emerged in 2010s. Driven by scientific insight on the global environmental crisis and realizing the impact on their own businesses and livelihoods, progressive leaders from business, academia, civic

organizations and local governments have begun to seek and implement solutions through cross-sectoral collaboration and cooperation, issue by issue. It was the birth of the “multistakeholder coalition” (MSHC). Inspired by this, a number of governments have joined in with an intention to take the lead.

We expect that MSHCs will be the key to driving systemic change towards sustainability, especially in Japan. If a wide range of actors pioneering initiatives in various areas of society emerge and work together across the border, they can be a major force for promoting Japan’s socio-economic system transformation, demonstrating effective leadership in the world, and ensuring the sustainability of the earth, human society and Japanese society at the same time.

## 4.2 Trends of the multistakeholder coalition

MSHCs have developed around the world with the participation of diverse stakeholders in various fields of system transformation, including energy, food, circular economy and cities. These MSHCs are expanding their functions and influences as driver or catalyst of the systemic changes by gaining broader support with self-regulating rules and standards

that do not have any legally binding power like the treaty and by encouraging people to change their behaviour. If a company does not participate in such MSHCs, it would be a risk factor.

MSHCs activities in each of the four major system transformations are as follows:

## Energy system

Among active international MSHCs in this field are the RE100, the 3% Club, the E-mobility Coalition, the Energy Efficiency Building Coalition and the Energy Efficiency Accelerator Coalition. Reasons to organize MSHCs include: “It is difficult to influence the policy-making alone, but doable when the industry as a whole is united”; “Rewarding in the long run”; “Downstream companies in the supply chain demand 100% RE”; and “Consumer demand”.

More companies are participating in carbon disclosure projects promoting disclosure of carbon emissions. In addition to self-regulation by industry associations, there are many cases seeking more stringent governmental regulations. In Japan, the Japan Carbon Initiative (JCI), a voluntary coalition of companies and organizations, has been influencing policy-making and public opinion.

## Food system

Among MSHCs in this area are the Food and Land Use Coalition, the Palm Oil Roundtable, and the Cocoa Forests Initiative, all of which work to reduce the environmental impact of food commodities through the value chain, from producers to manufacturers and brands. Many of them have made policy recommendations on land use and commodity trading and sought their enforcement, which have had a real impact. The food system is an important link between businesses and consumers with respect to natural capital, and it is also the area where consumer outreach is most effective.

For consumers to make choices that help solve global environmental problems, they need to be provided with information such as: “Is this product made by reckless deforestation?”, “How much of carbon emissions come from the food commodity supply?” or “Is this fish overfished?”. The activities of MSHCs and various certification systems (e.g. seafood, coffee, cacao) are playing a major role in transforming the food system by connecting producers and consumers through information.

## Urban system

The C40 and ICLEI are coalitions formed by cities advocating sustainability, and the Zero Waste City Declaration, the Biodiversity City Declaration and the Resilient City Declaration have attracted the support of many cities. These initiatives are

designed to avoid the short-term cycle of politics and address long-term environmental goals by means such as agreement on a medium- to long-term plan between citizens and local government.

## Resource circulation system (circular economy)

Leading MSHCs in this area include various plastics coalitions, the E-waste Coalition, the Ocean Alliance and the Fashion Pact, which are becoming the driving force behind policy changes and regulatory enhancement that promote the

resource circulation. Here, the voice of consumers – the destination of the value chain – plays a major role. This is particularly evident in the plastics and fashion sectors.

## Financial and capital markets

In addition to the above four areas, the role of MSHCs in the financial and investment sector is also noteworthy. A major shift in capital and financial markets is taking place thanks to dialogue and collaboration between a wide range of stakeholders involved in the market – non-governmental organizations (NGOs), ultimate-beneficiaries, institutional investors, financial institutions and regulators.

In a globalized market, these developments spread rapidly. They are leading not only to ESG consciousness of each market participant, but also to a structural shift of the integration of environmental impact and natural capital assessments into the market system (e.g. corporate disclosures, sustainable investment benchmarks, and incorporation into capital adequacy regulations).

## 4.3 Multistakeholder coalitions as a mechanism to manage the global environment (Global Commons)

The global environment and its component natural systems are part of the foundation of human society and constitute the Global Commons, i.e. the common property to be protected and used in a sustainable and fair manner by all of humanity in a coordinated manner. MSHC as a new style of the leadership complements the traditional interstate framework. This is because such a new form of leadership and governance, in which businesses, NGOs, and central and local government leaders think and act across the boundaries, are well suited to system transformation efforts that involve fundamental and far-reaching changes.

Among other things, corporations, as the most important actors in systemic change, are expected to play a role that goes beyond serving shareholders, as the theme of the World Economic Forum Annual Meeting 2020, “Stakeholder Capitalism for a Cohesive and Sustainable World” signifies. There is also a significant role for NGOs that embody the interests of civil society.

This leadership through MSHCs has three characteristics.

First, the process is extremely open. Leaders from diverse industries and sectors, as well as government, the private sector and civil society, work across their domains to seek, agree to and implement solutions. The only qualification for participation is commitment and ability to implement.

Second, a clear sense of the problem is shared among the participating leaders, i.e. the

recognition that humanity is transgressing the planetary boundaries and that major economic systems must be transformed to remain in the safe zone. The global environmental crisis is broad, not just limited to climate change, and the systemic changes needed to solve it are also diverse.

Third, scientific knowledge, including the social sciences, is the foundation to be shared. Natural and social science research underpins the common understanding that systemic change is not only necessary, but also possible and desirable for humanity. (The New Climate Economy Report, Food and Land-use Coalition Report, and others provide a common framework and terminology.)

The reasons for the expectations for MSHCs are:

1. Initiatives that are difficult for one company to undertake alone are possible through horizontal (within the industry) and vertical (along the value chain) collaboration.
2. It can mobilize not only the private sector, but also policy-makers.
3. Collaboration between public- and private-sector leaders will stimulate a wide range of people like consumers, investors and others, thereby increasing the momentum of the entire society.
4. They can mobilize the funds and other resources needed to achieve their goals.

## 4.4 A breakthrough for Japan and the world

Without urgently solving the global environmental crisis, there is no hope for sustainable human prosperity. All the necessary pieces for it are available. First, we know the problem, about which the message of science is clear and easily explained. Second, there is a common understanding that the prescription for solving the problem is to transform major socio-economic systems, with scientifically supported recommendations on how to do so. Despite various constraints and different degrees of difficulty of implementation in each region or country, the direction is clear. It only remains to take action.

In Japan, as we discussed in Chapter 3, insufficient crisis awareness, lack of leadership and inadequate

information and options for consumers and investors are hindering the system change, even in the energy system that is discussed most. In response, advanced companies, organizations and municipalities concerned about lack of progress are taking action through participation in JCI, TCFD, RE100 and other initiatives, and are beginning to have an impact on promoting the transition.

Consumer behaviour is the key to food system transformation, and MSHCs are effective in strengthening the appeal to consumers throughout the value chain. In Europe and the US, there is a growing awareness of the need to avoid foods with a high environmental impact; in Japan, this is

“ Such leadership can be demonstrated by a single consumer or investor, even if they are not in the leading position of businesses or government.

still not widely recognized. With scientific evidence showing that a diet with low environmental impact is good for health (EAT-Lancet Commission report), the Japanese diet, based on plants and fish, should be more widely recognized and recommended as a model for the rest of the world. Even though beef consumption per capita is not high in Japan, there is a need to increase awareness of its environmental impact as “no meat days” are being implemented here and there worldwide. At this juncture, it is important to provide the public with knowledge, information and choices; through MSHCs, companies can tap into the potential needs of consumers by providing more information about the environmental impact of products and sustainability-certified products, while consumers can demand more from companies.

In Japan, MSHCs are most active in the field of circular economy. Following the world trend, Japan's efforts to increase resource circulation at the level of product design and material selection are spreading to plastics, home appliances and fashion areas. With regard to plastic reduction, it is noteworthy that Japanese companies from the beverage and chemical industries have joined the international MSHCs.

Japan is still a waste-prone country, from plastics to food. However, more companies and citizens are working to reduce plastic waste in the continued 3R (reuse, reduce, recycle) movement. In 2019, with the aim to solve the marine plastic waste problem, the Clean Ocean Materials Alliance (CLOMA) was established as a domestic platform to strengthen cooperation among companies from various industries and to develop and promote the use of alternative materials, such as biodegradable plastics and paper, and the number of participating companies is increasing.

In September 2020, a ground-breaking partnership was announced by Kao Corporation and Lion Corporation. While efforts to reduce the amount of packaging and plastics used in the toiletries market have been made in Japan, it has been difficult to recycle the film containers for refill products because they are made of composite materials and their materials and designs vary by manufacturer. To overcome these constraints, Kao and Lion, fierce competitors, have agreed to work on quality design of recyclable materials and containers that can be used by different companies, and to create a separation and collection system of film

containers through cooperation among consumers, governments and distribution channels, at the same time embarking on changing social consciousness together with consumers and other stakeholders.

This agreement is an example of a business partnership to tackle a fundamental problem in plastics recycling that has not been easy worldwide. It is remarkable as the attempt to make use of MSHCs most effectively, as it would change the entire value chain altering industry practices, mobilizing policies and promoting consumer understanding through collaboration between leading companies in the sector.

Although Japan's socio-economic system transformation is not yet sufficient, it is beginning to reflect global trends as well as the needs of downstream companies and people. If the activities of MSHCs aiming at system change in Japan expand and are linked to the movement of international MSHCs, the momentum can be greatly enhanced. It is also important for Japan to actively participate in and lead international discussions on system change before the relevant global standards are decided upon.

So far, national treaties and the United Nations alone have not been able to sufficiently achieve the conservation of the global environment as the Global Commons. In this context, the activities of MSHCs shows the potential of a framework to conserve and manage the Global Commons through collaboration of cross-sectoral leaders. In every country, industry and sector, there are resistant forces that cling to the existing order. How many courageous leaders emerge to confront it and create a coalition beyond their boundaries will determine the future of humanity.

Even in our country, which is struggling with sluggishness, blockage and shrinkage, MSHCs are beginning to influence national policies by providing aspiring entrepreneurs, consumers and citizens with the space to demonstrate leadership for sustainability. Such leadership can be demonstrated by a single consumer or investor, even if they are not in the leading position of businesses or government. The future of the planet and humanity is dependent on the determination for each of us to do what we should do with conviction, to involve the people around us, and to raise our voices.

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# Appendix

## Case Study: Japan's global warming countermeasures and energy conversion

By **Hiroko Kuniya**, Executive Director, Sustainable Development Goals (SDGs) Project, Asahi Shimbun

It is now universally acknowledged that the biggest and most urgent challenge for building a sustainable society is to achieve a decarbonized society, and the urgent message from the IPCC's 1.5°C Special Report, released in October 2018, has accelerated the movement to further address global warming to date, and greenhouse gas (GHG) emissions. A growing number of countries and regions are raising their effective gas reduction targets, and aim to achieve zero emissions by 2050, and as many carbon reductions as possible by 2030 as part of the process, which has become a major trend in the world.

However, there has been no movement to review global warming countermeasures in Japan. Under the Paris Agreement, national reduction targets (NDCs) are to be submitted every five years with more advanced ones but, in March 2020, the Japanese government submitted its proposal to the United Nations with the target of a 26% reduction by 2030 unchanged. Japan has been criticized as a country with 18 coal-fired plants under construction or in the planning stages, at a time when investment in coal projects in the financial world has entered a new phase in response to global warming and the phase-out of coal-fired plants is becoming a global trend. Against this backdrop, it has been pointed out that the submission of the unchanged NDC will cement Japan's reputation as a country that is reluctant to decarbonize.

The most important issue in achieving a decarbonized society is how to shift from dependence on fossil fuels in the energy sector and, in particular, how to expand the use of

renewable energy in the electricity sector. However, Japan has been slow to make this transition, and the low share of renewable energy in the country's electricity mix poses a reputational risk for Japan and Japanese companies. The recognition that ensuring global environmental sustainability is the key to social and economic system sustainability is spreading rapidly as the scientific findings of the climate crisis and other factors become clearer. For this reason, social and economic systems need to be reviewed from the perspective of global environmental sustainability; and the world, led by the European Union, has begun to reform its social and economic systems with the recognition that various initiatives for global environmental sustainability will lead to the revival and activation of the economy. In the pursuit of a post-coronavirus society, the EU's "green recovery" policy, for example, appears to be accelerating this trend.

Japan's policies, on the other hand, have been fundamentally unable to break away from the old idea of preserving the global environment in harmony with the economy and striking a balance between economic growth and environmental costs, and there has been little concrete movement to review and reform the existing economic system from the perspective of ensuring global environmental sustainability.

How did Japan get to this point? This article focuses on Japan's carbon reduction plan in response to the Paris Agreement and the position of the electric power industry, especially coal-fired power generation, which accounts for 40% of Japan's total carbon dioxide emissions.

### Energy policy after the Great East Japan Earthquake

Following the Great East Japan Earthquake, 54 nuclear power plants, which accounted for more than 30% of the power supply, were gradually shut down and, by 2012, all of them had been shut down. The shortfall in power generation was compensated for by thermal power generation from LNG, coal and other sources. In addition to the restarting of old units and expansion of turbines, a number of new coal-fired power plants have been approved for construction, as coal-fired power plants are considered to have an economic and supply stability advantage. The project has

begun procedures for construction. The Fourth Basic Energy Plan (April 2014), the first basic energy plan since the earthquake, sets forth the basic perspective of energy policy as a stable supply of electricity on the premise of safety, a low-cost supply by improving economic efficiency, and at the same time adapting to the environment, or S+3E.

Since then, this has become the basis of energy policy. Coal-fired power plants were positioned alongside nuclear power plants as "base load

power sources". The Energy Mix 2030 Targets (long-term energy supply and demand outlook) formulated the following year based on the Fourth Basic Energy Plan (long-term energy supply and demand outlook) greatly increased the percentage of coal-fired power generation from 11% to 26% compared to the 2030 target formulated in 2010, before the earthquake.

From then until now, coal has been "an important baseload power source fuel with excellent stability of supply and economic efficiency in the current situation, as its geopolitical risk is the lowest among fossil fuels and its unit cost per calorie is also the lowest among fossil fuels, despite its large greenhouse gas emissions" (March 2020, "New International Resource Strategy, Ministry of Economy, Trade and Industry"). In FY2018, coal-fired thermal power plants accounted for 32% of the total power generation by power source.

The Fourth Basic Energy Plan states that renewable energy will be actively promoted, but there are many issues to be addressed for its introduction, such as stable supply and cost, and the Energy Mix 2030 Targets set a target of 7.0% for solar power and 1.7% for wind power, with a target of 22%-24% for renewable energy, including hydro. In the Basic Energy Plan before the earthquake, the target for renewable energy was about 20%. In the pre-disaster Basic Energy Plan, the target for renewable energy was about 20%, and while this has been increased by 10%-20%, it is a modest target considering the policy of aggressively promoting renewable energy. In the aftermath of the earthquake, power generation will focus on cost containment, and thermal power generation using fossil fuels such as coal and LNG will play a major role, resulting in large amounts of carbon dioxide emissions.

## The Draft Commitment and the Global Warming Prevention Plan

In July 2015, the government submitted a "draft commitment" to the United Nations to achieve a 26.0% reduction in GHG emissions by FY2030 compared to FY2013 levels, in preparation for the Paris Agreement. This reduction figure was set as a "feasible reduction target" to be consistent with the Fourth Basic Energy Plan and the Energy Mix 2030 Targets. In May 2004, the government decided on the Global Warming Prevention Plan, which stated that it would work to achieve the 2030 target set in the draft pledge and, over the long term, aim for an 80% reduction by 2050 while balancing global warming countermeasures and economic growth.

With regard to the industrial sector's efforts, the report states that the industry has been proactively

formulating reduction plans and achieving high levels of success in reducing emissions, and that the industry will continue to focus on voluntary efforts by the companies to implement these measures. With regard to the electric power industry's efforts to reduce carbon emissions, the report states that voluntary efforts, such as the achievement of voluntary targets for the electric power industry set in line with the national energy mix targets, will play a central role in the measures.

The government will ensure the effectiveness of these efforts through policy measures such as the Energy Conservation Law and the Upgrading Law in order to promote the achievement of the goals, and will evaluate progress annually to ensure that the goals are achieved.

## The Fifth Basic Energy Plan and maintaining the energy mix

The Basic Energy Plan, which is legally required to be reviewed at least every three years and revised as necessary, was finalized in July 2018 as the Fifth Basic Energy Plan. The plan includes language about renewable energy that aims to make it a main source of power by 2050, in response to the gradual expansion of renewable energy overseas and in Japan's footprint, despite the challenges it faces, such as high generation costs and grid restrictions.

However, the framework of the plan remains unchanged, arguing that efforts to achieve the 2030 target are still on the way. At the opening of the first meeting of the Basic Policy Subcommittee

of the Ministry of Economy, Trade and Industry's Advisory Committee for Natural Resources and Energy, which is reviewing the Fifth Plan, the Minister of Economy, Trade and Industry stated, "Only three years have passed since the Fourth Energy Plan, and efforts to reach that target are still halfway there, so we are not at a stage where we can change the framework of the plan." With regard to the energy mix, the government has decided not to change the targets as well, saying that it will do its utmost to ensure the realization of the targets it has set for itself.

However, renewable energy has been increasing rapidly, particularly solar power, since the FIT

(feed-in tariff) system was applied to large-scale solar power generation in 2012. Before the disaster, renewable energy, other than hydropower, accounted for only 1.1% of the total, but by 2016 it had grown to 6.9% and 10.4% in 2018, with renewable energy, including hydropower, reaching nearly 18% in 2018. There was no change in the framework of the energy plan and the energy mix was left unchanged, despite the fact that the situation was changing significantly from 2015, when the energy mix targets were set. In addition,

given the triennial review, it is clear that the NDCs are required to be resubmitted during the period of this Fifth Plan, but this is not on the horizon for consideration.

Amid new developments in global warming countermeasures around the world, the Basic Energy Plan has greatly constrained global warming countermeasures in Japan, and there seems to be strong resistance to changing the direction of the Basic Energy Plan.

## Long-term growth strategy of the Paris Agreement

Following the formulation and submission of the long-term strategy established by the Paris Agreement, in June 2007, the government decided on and submitted to the United Nations the “Long-term Strategy for Growth Based on the Paris Agreement” for the year 2050. The strategy “aims to achieve a decarbonized society by 2050 as soon as possible in the second half of the century” and states that the government will go one step further than before, while tackling the 80% reduction in 2050 that it had previously set out.

The direction of the policy follows the Fifth Basic Energy Plan, which argues that the long-term future is more complex and uncertain, and that the government will pursue every possible option in a multifaceted, multilinear scenario to advance the challenge of energy conversion and decarbonization. In addition, the report emphasizes that various challenges to decarbonization will be solved through discontinuous innovation that is not an extension of conventional methods. For example, it says that by 2050, the government will phase out inefficient coal-fired thermal power generation and reduce dependence on it as much as possible, while at the same time working to reduce carbon dioxide emissions through innovations such as CCS/CCU and carbon recycling, consistent with the long-term goals of the Paris Agreement. However, despite the goal of decarbonization, the plan does not consider the phase-out of coal-fired power generation itself, and assumes the long-term continuation of high-efficiency coal-fired power generation in the name of “all-around”.

In addition, much of the discussion of innovation is devoted to technological innovation, and there are only minor references to innovation in economic and social systems in this “strategy”. Carbon pricing, which is being introduced in many countries as a major incentive for decarbonization, is also mentioned only as “requiring specialized and technical discussions”.

The problem with this “long-term strategy” is that it is a strategy that does not provide a concrete road map to a decarbonized society, with phrases such as “all-around” and “all options”. It emphasizes that the solution to the problem also depends on “discontinuous innovation”, making it even more difficult to see the path forward. The report also fails to give a sense of the scale of each source of energy in 2050, and it is unclear how the growing number of renewable energy sources will be disseminated and increased toward the year 2050.

The “long-term strategy” mentions a “virtuous cycle of environment and growth” in which economic growth is linked to the goal of a decarbonized society, suggesting a change from the traditional idea of balancing economic growth and environmental costs. However, in order to increase the predictability of investment, expand investment in decarbonization fields, and lead to economic growth, a concrete path towards a decarbonized society in the limited time remaining must be drawn up. This is essential for a long-term strategy.

## Leave the National Reduction Target (NDC) unchanged

On 30 March this year, the government submitted its NDC to the United Nations, leaving the 26% reduction for 2030 unchanged from that submitted for 15 years. This deferral means that the “Basic Energy Plan” and the “Energy Mix”, which are the basis of the reduction plan, are not scheduled to be revised until after 2009, and it can be said that the government did not make a policy decision to review the reduction plan prior to its consideration. Here we can read a picture of global warming

measures as subordinate to energy policy.

In response to this deferral submission, the Japan Climate Initiative (JCI), formed in 2018 by companies, local governments and others keen to combat global warming, turned a deaf ear to growing calls for stronger targets, and international institutional investor groups called on Prime Minister Abe to raise the reduction target, and the ministry’s own It has criticized the decision

not to raise the rate due to closed discussions. The Japan Climate Leaders Partnership (JCLP), a group of companies working together on the need to initiate proactive action to achieve a

decarbonized society, said it was “concerned that this could give the impression to foreign counterparts and investors that climate risks in Japan will increase.”

## Policy on the closure of inefficient thermal power plants

On 3 July of this year, the Ministry of Economy, Trade and Industry (METI) announced its plan to shut down 90% of inefficient coal-fired power plants by 2030. The government has so far “tackled the fading out of inefficient coal” in its Fifth Energy Plan and “worked to reduce carbon dioxide emissions from thermal power generation consistent with the long-term goals of the Paris Agreement” in its Long-Term Growth Strategy for the Paris Agreement. To this end, the government will promote the fade-out of inefficient coal-fired power generation and other measures,” and in order to give concrete form to this policy, the government has announced that it will begin to consider steps to proceed with the closure of inefficient coal-fired power plants. If this policy is achieved, power generation from coal-fired plants is expected to be reduced by about 30% in 2030 compared to 2018.

According to the current energy mix plan, the ratio of coal-fired thermal power generation in 2030 is set at 26%, but there are estimates that the ratio of coal-fired thermal power generation will be closer to 40% if plans for new coal-fired thermal power generation by electric power companies continue to be pursued, and thus the government is believed to have taken concrete steps to reduce coal-fired thermal power generation in order to achieve the energy mix. At the same time, however, the discontinuation of inefficient coal-fired thermal power plants is a reaffirmation of the existing policy of continuing to operate highly efficient coal-fired thermal power plants even after 2030, and it is widely viewed by many as not a change in the energy policy of the country to date.

The report also reiterates the government's existing policy of continuing to use highly efficient coal-fired power plants, including new ones, with only modest reductions in carbon dioxide emissions, and even with the technical outlook for the future, coal-fired power plants emit twice as much carbon dioxide as LNG-fired plants. Can energy transition consistent with the “growth strategy” really be achieved with this fade-out plan for inefficient coal-fired power generation? There are also many unanswered questions about how far it will lead to raising the NDC that was submitted for deferral this year.

METI has also announced that it will consider “reviewing the rules for the use of transmission lines” to expand transmission line connections from renewable energy sources, in line with its previously stated policy of shutting down inefficient thermal power plants and making renewable energy a main source of power. The rapid expansion of renewable energies around the world and the recent policy to reduce the ratio of coal-fired thermal power generation have finally led to concrete measures for “making renewable energies a main source of power”.

Amid growing international calls for the total abolition of coal-fired power generation, the Japanese government has decided to hold open discussions and take more concrete measures to achieve energy policies and a decarbonized society that are consistent with the Paris Agreement, such as the revision of the Basic Energy Plan (Sixth Plan) scheduled for next year, including the acceleration of measures to shift to mainline renewable energy sources. I would like to see a more in-depth, concrete examination. There is little time left.

## A.1 Trends in industry and local government

### The stance of Keidanren

Industry's efforts to combat global warming are centred on the “voluntary initiatives” promoted by the Nippon Keidanren (Japan Business Federation), in which each industry voluntarily sets its own energy-saving and carbon dioxide reduction targets and works to achieve a low-carbon society in harmony with the environment and the economy. Under the Low Carbon Society Action Plan formulated in 2009, targets for each industry were set for 2020 and 2030, and these

have now been implemented.

From the perspective of harmonizing the economy and the environment, the Keidanren has consistently opposed carbon taxes, emissions trading and other regulatory measures based on “carbon pricing” on the grounds that they undermine economic vitality and the international competitiveness of companies. It also says that the long-term target of an 80% reduction by

2050 is merely a directional marker and that rigid management of progress towards the 80% reduction should not be undertaken.

As for the future electric power system, the report says that it is necessary to pay attention to policy policies such as global warming policy, but that “we should not be bogged down by the existing policy targets,” and that “it is not an ideal image that should be reached. It is necessary to calmly present energy scenarios that have the potential to be achieved, rather than ideal images that should be achieved,” and the report expressed caution about rapid decarbonization as a measure against global warming.

At Keidanren, companies and industries such as steel, chemicals, and electric power have maintained a major voice in Japan’s post-war economic growth, in part because they have played a central role in supporting the country’s rapid economic growth.

However, all of these companies are large carbon dioxide emitters that rely on fossil fuels, and they are all very resistant to taking bold steps towards decarbonization. This is likely to be reflected in the Keidanren’s policy.

In addition, the nine major electric power companies, which have efficiently supplied electricity through large-scale power generation, transmission, and distribution systems based on regional monopolies, are currently forced to focus a great deal of attention on responding to the deregulation of the electric power industry and restarting nuclear power plants, and they continue to be unable to establish corporate policies and take bold investment action toward energy conversion.

This industry’s attitude has a very strong impact on the government’s energy policy and, by extension, on the fight against climate change.

## A.2 Trends on the demand side, such as advanced companies and municipalities

In response to the Keidanren, there have been a number of unprecedented moves in recent years from companies that have been progressive in combating global warming. For example, in June 2007, Japanese companies participating in RE100, an association of companies that aim to convert 100% of the electricity they use in their businesses to renewable energy, submitted a proposal to the government in the form of “A Proposal from Consumers Aiming to Introduce 100% Renewable Energy”, which calls for the government to increase the proportion of renewable energy in the power supply mix to 50% by 2030. It calls for total policy mobilization. They argue that a clear and ambitious national direction will lead to the rapid and large-scale deployment of renewable energy.

Increasingly, individual companies are pursuing specific measures to achieve zero emissions by 2050. In an era in which carbon dioxide emissions are directly linked to a company’s reputation and will become its new global competitiveness, we want to keep the carbon dioxide emission factor of purchased electricity low and, if possible, as low as possible to zero. In order to achieve this, there is a strong desire to increase the share of renewable energy in the energy mix at a rapid pace. I would like to see our energy mix to be competitive with the rest of the world. Otherwise, we will have to consider moving our manufacturing operations overseas,” said a representative of a progressive company. He cannot hide his concern about the hollowing out of new industries, fearing that global companies will flee from Japan if carbon dioxide emissions remain high.

The JCI has called for raising the reduction target for NDCs because Japan’s reputation as a reluctant decarbonizer could hinder the ability of Japanese companies to do business globally and could lead to the exclusion of Japanese companies from global supply chains. We called for this. Such a coalition of progressive companies from across industries to express their opinions on national policies is a new movement that is attracting attention from the industrial world, where policy proposals have often been expressed by the Keidanren.

There is also a growing number of companies that are actively pursuing the procurement of renewable energy sources themselves. Recently, Toyota Motor Corporation, together with Chubu Electric Power Co. and other companies, announced plans to establish a partnership to acquire and operate renewable energy sources and to supply them to the Toyota Group in the future. In July this year, the Keizai Doyukai, whose members include corporate executives as individuals, announced a proposal to change the energy mix target and to raise the ratio of renewable energy to electricity by 2030 from the current target of 22%-24% to 40% in order to achieve the 2030 GHG reduction target.

Moves by local governments to take advanced measures against global warming to achieve “zero emissions by 2050” are gaining momentum. In its “Zero Emissions Tokyo Strategy” (announced in December 2007), the Tokyo Metropolitan Government strongly urges the government to greatly expand the use of renewable energy

sources as soon as possible, arguing that 70% of the city's carbon dioxide emissions come from electricity consumption, and that decarbonization of the electricity supplied from the power transmission and distribution networks is of critical importance.

In addition, the large-scale power outages caused by typhoons and the blackouts caused by the Great East Japan Earthquake in Hokkaido over the past few years have highlighted the vulnerability of the electric power system and shed light on the importance of decentralization of the power system from the perspective of disaster prevention

and the importance of renewable energies appropriate for decentralized energy.

In addition, the importance of local energy production for local consumption has begun to be emphasized from the perspective of industrial promotion, job creation and the effective use of local resources in regional revitalization; from this point of view, expectations for renewable energies are also increasing. The construction of a new power network to support the mass introduction of renewable energies is becoming an urgent issue, and the energy transition needs to be accelerated.

## Lack of a shared sense of urgency

Looking at the evolution of Japan's CO2 reduction plans, it is unlikely that those involved in policy-making in Japan share a sense of urgency about climate change, which has been growing rapidly around the world in recent years. For example, it has been clear for five years now that Japan will have to resubmit a reduction plan to the United Nations by 2020 under the Paris Agreement, and despite the fact that countries have been reconsidering their reduction plans and issuing new policies one after another over the past few years, the Basic Energy Plan, the Energy Mix, and the Climate Change Action Plan, which will be the basis of the reduction plan, have not been adopted. The "targets" were considered within the conventional framework of the schedule, and there is no evidence of serious discussion within the government to resubmit a reduction plan. There is no positive national leadership, and there is no shared scientific knowledge or sense of urgency about the dangers of global warming, as carbon dioxide concentrations in the atmosphere are increasing day by day, pushing the Earth towards the limit of its ability to recover.

This is probably due to the lack of a sense of urgency in Japanese society regarding climate change and global warming. Global corporations often point out that there is a significant difference in sensitivity to the climate crisis between employees in Japan and those overseas, especially in Europe. In Japanese society, the national government, local governments, political parties, corporations, NGOs, and consumers have not been actively discussing social sustainability from an environmental perspective. The gap with the progress made by the Green Party and other environmental parties in Europe and elsewhere is too great.

It cannot be said that the media, which has a large influence on public opinion, has treated the issue in a significant way. A survey of environmental and economic advantages released at this year's World Economic Forum Annual Meeting in Davos showed that, of the 30 countries surveyed, the fewest number of people in Japan said that "environmental protection should be given higher priority than economic growth". The situation in Japan as a whole may be one of the reasons why policy-makers in the country have little sense of urgency.

## The harmful effects of the myth of technology

Japan's policy emphasizes the importance of reducing carbon dioxide emissions through innovation, yet the main focus of that innovation is on technological development, and there is a reluctance to engage in institutional innovation that will lead to changes in the economic and social systems that have underpinned economic growth to date. There seems to be a myth that new technologies that are likely to be developed in the future can solve the problem of carbon dioxide reduction without reforming the economic and social systems that have been in place to date.

This myth is supported by the successful experience of having achieved world-class pollution control and energy conservation through technology in the past. As a result, the realization of a decarbonized society has been entrusted to the extreme uncertainty of "discontinuous innovation", and there has been little willingness to actively consider practical measures and policies, including the active use of existing technologies. We need to take a bold step towards institutional innovation to transform the economic system.

## Policy decisions are not being made in an open process

The reality in Japan is that the crucial task of creating a decarbonized society is bound up in the Basic Energy Plan, which is formulated in closed debate within a single ministry. Japan's global warming policy, which is based on such a closed process, does not fully reflect the sense of urgency about climate change and the new trends that are emerging. The result is a policy that has no social purpose and is difficult to justify in the eyes of the rest of the world, and the distance between

the policy and the major changes that are rapidly occurring around the world towards zero emissions seems to be widening.

We need an open policy-making process that is capable of listening to the voices of the private sector, including corporations, NGOs and NPOs, which are taking advanced measures and making progress in this direction.

## Lack of vision

Japan as a whole has not developed a shared vision of what kind of society it should aim for in 2030 and beyond, with a view to 2050. It cannot be said that there is a vision for the future of society that will serve as a prerequisite for consideration in the formulation of the Basic Energy Plan and the reduction plan based on the Paris Agreement. In the absence of a shared vision for the future of society as a whole, discussions on solutions to the problems tend to be biased in favour of

technical aspects, with some agreeing and others disagreeing on institutional changes.

It is necessary for various stakeholders to work together to form a vision for the future, to set ambitious goals for that vision, and to focus policies and investments towards those goals. A strong commitment from top leaders based on the future vision is required for the realization of a decarbonized society.

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