

Interview with Prof. Kazuhiko Takeuchi, President of the Institute for Global Environmental Strategies

Evolving Capitalism Supports Sustainable Economy & Environment

By Japan SPOTLIGHT

The new administration of US President Joe Biden has committed to returning to the Paris Agreement on global climate change, and many of the major greenhouse gas emitting nations including Japan have announced their aim to achieve zero emissions by 2050. How can this goal be reached? The answer covers a wide range of issues, including a possible transformation of our economy and society.

The Institute for Global Environmental Strategies (IGES), an environmental think tank in Japan, published a research report in June 2020 that provided an overview of “evolving capitalism”. We interviewed Prof. Kazuhiko Takeuchi, president of IGES, and a distinguished global environment and sustainability studies expert who has worked on this issue for many years.

(Interviewed on Jan. 29, 2021)

Implications of Net-Zero Greenhouse Gas Emissions in 2050

JS: All major CO₂ emitting nations have now committed to observing the Paris Agreement and achieving net-zero carbon emissions by 2050. That is excellent. Do you think this will be successful in significantly mitigating the speed of global warming?

Takeuchi: The Paris Agreement long-term temperature goal is to hold the rise in global average temperature to well below 2.0 degrees Celsius above pre-industrial levels and pursue efforts to limit the increase to 1.5 degrees. After the adoption of the Paris Agreement, however, a special report by the Intergovernmental Panel on Climate Change (IPCC), a group of experts worldwide, showed there would be a robust difference in the impact on ecological systems, human health and natural disasters between the 2.0 degrees Celsius target and the 1.5 target. The report also showed that if the emission of greenhouse gases continues to increase at the current rate, the rise in global temperature would reach 1.5 degrees Celsius between 2030 and 2052. To limit global warming to 1.5 degrees Celsius, global CO₂ emissions must reach net zero by around 2050. Reflecting these scientific findings, major nations have begun to pursue “net-zero CO₂ emissions” by 2050.



Prof. Kazuhiko Takeuchi

IGES Report on Social & Economic Reforms for Net-Zero Emissions

JS: To achieve this target, we will need not only technological developments for clean energy but also social and economic reforms. In 2020 IGES published a long-term vision for realization of net-zero emissions, which will hopefully raise awareness nationwide. Could you please briefly introduce it for us?

Takeuchi: Many people believe that a sufficient reduction in CO₂ can be achieved with a wide range of innovative technologies, though there is always uncertainty about their development. For example, carbon capture and storage would face uncertainty here in Japan due to the country's geology. Assuming such uncertainty surrounding the development of new technologies, we should also thoroughly review our lifestyles, industrial structure and business management and promote reforms and prioritize policies accordingly. This is the concept on which our report was based. Such reforms would ultimately necessitate fundamental changes in people's values and thoughts about human civilization, consumer behavior, social customs and institutions. In the end, it will be necessary to make drastic changes to our society built on the current model of capitalism. To do so we need a transition plan that includes reconsolidation of sustainable economy and environment. In our report, “A Net-Zero World”, we call this the transition scenario.

JS: The “transition scenario” seems to be challenging, though it is an excellent idea. We think it will not be successful unless a new economic growth model replaces the existing one of mass production and consumption. In order to make transition management convincing to the public, we should show them a new economic growth model.

Takeuchi: We assume “backcasting” in our transition management model. It will be difficult to achieve net-zero emissions by 2050 with the current social norms. With this ambitious goal, we need to look back at our current society from the viewpoint of society in 2050. We then need to think about the gap between the two – the present and the future. How we should fill that gap is the basis for our transition scenario. Yes, our goal is very ambitious, but failure to achieve it would lead to a more than 2.0 degree Celsius rise in global temperature and pose a threat to human civilization. To prevent this, it is extremely important that businesses and citizens change their behaviors. To encourage change, transition management should be convincing to each stakeholder by showing them a realistic goal that can be achieved through collaboration. Transition management must not be an imaginary vision that is disconnected from reality and should instead be based on each stakeholder’s readiness for innovative behavior change. This is necessary if we are to save the world from an environmental crisis, given that the emergence of new technologies for mitigating CO₂ is a less realistic and convincing scenario.

JS: A digital economy would be a realistic solution, then, as it would save energy and produce higher added value.

Takeuchi: All nations are now thinking about promoting the use of renewable energy sources in order to achieve net-zero emissions. But there is uncertainty and instability regarding the supply of such energy sources. Solar and wind power generation are both intermittent, while modern, digitalized technologies can provide flexibility through which demand and supply are matched. Biomass energy supplies are fairly stable but their high costs remain unresolved. Geothermal power is also quite stable but it faces some obstacles such as possible conflicts of interests with national parks or hot springs where potential geothermal power is naturally available.

All renewable energy sources can be characterized as decentralized, under the concept of “local production for local consumption”, which is clearly distinct from a centralized power system based on large-scale coal-fired power or nuclear power. A good combination of various renewable energy sources could create a more stable supply. For example, relying primarily on renewable energy sources, and filling gaps in supply with biomass would make supply more stable but it would still require flexibility through balance by smoothly matching various renewable energy sources

and electricity demand. An innovative digital system is expected to accelerate this process. This type of integration of renewable energy sources and digital transformation technology would be a big step towards a “net-zero carbon emissions” society.

Decentralization of Our Economy & Society

JS: Renewables are not easily utilized, but one way to use them efficiently would be to transform our economy into a more decentralized one, as this fits with the “local production for local consumption” concept. So we believe a decentralized economy would be more environmentally friendly. This needs to be a core concept in transition management, and people’s values and thoughts must be adjusted to this.

Takeuchi: Renewable energy supplies must be decentralized, and this is the most rational economic policy to sustain local economies. Germany has the most advanced decentralized economic system in the world, since it originated as a decentralized nation and this concept is widely accepted there. They believe that the shift to renewable energy sources could be achieved through changing the development pattern of societies by sharing local natural energy sources in the community. There are nearly a thousand decentralized community energy firms supported by local residents and local investors in Japan. I do not think such a decentralized system can be readily applied to big cities like Tokyo, and some other energy and economic policies must be examined for such large cities. But local Japanese regions would be more likely to take up and apply the idea of a decentralized economy model like that found in Germany, and this could then be used as a formula for larger urban areas. I believe that a decentralized energy supply system would also fit well with policies addressing depopulation and an aging society, as well as the revitalization of local economies in Japan. Using a decentralized system based on biomass, solar or wind power or any other natural energy supply, local areas could attract people seeking a life away from urban areas, thereby contributing to stemming depopulation. This could create a revitalized society, with encouraging future prospects.

JS: Unless something extraordinary happens, it may be difficult to implement structural-economic or workstyle reforms, since people tend to be creatures of habit and have less incentive to change current customs. But in this regard, Covid-19, though a terrible tragedy, may create opportunities as well. Expanding remote work and changing our work-life balance during the pandemic may make a decentralized economy and society that is more easily accepted by the public.

Takeuchi: That is true. As a result of Covid-19, and the implementation of social distancing necessary to mitigate the spread of virus infections, we have learned that it is possible to successfully work at home. The implications are significant. Some companies have now decided to move to local areas, and employees can live and work anywhere, even far from their office, since they do not have to commute there every day. They can contribute to a business in Tokyo without leaving their family in a more distant hometown. Working remotely is now becoming a new option for corporations in Japan, and this is certainly a major social reform triggered by the pandemic.

JS: A decentralized economy and society would produce many small local communities that would not be pursuing mass production and consumption. Since mass production and consumption would encourage businesses to pursue economies of scale and large monopolies or oligopolies could be created, this would not lead to significant income inequality. With lower inequality and a better environment in smaller local communities, we could have a more affluent society.

Takeuchi: I agree with you. This would be the best environment for raising children. Working styles and work-life balance among the inhabitants of each community would also be diversified. Of course,

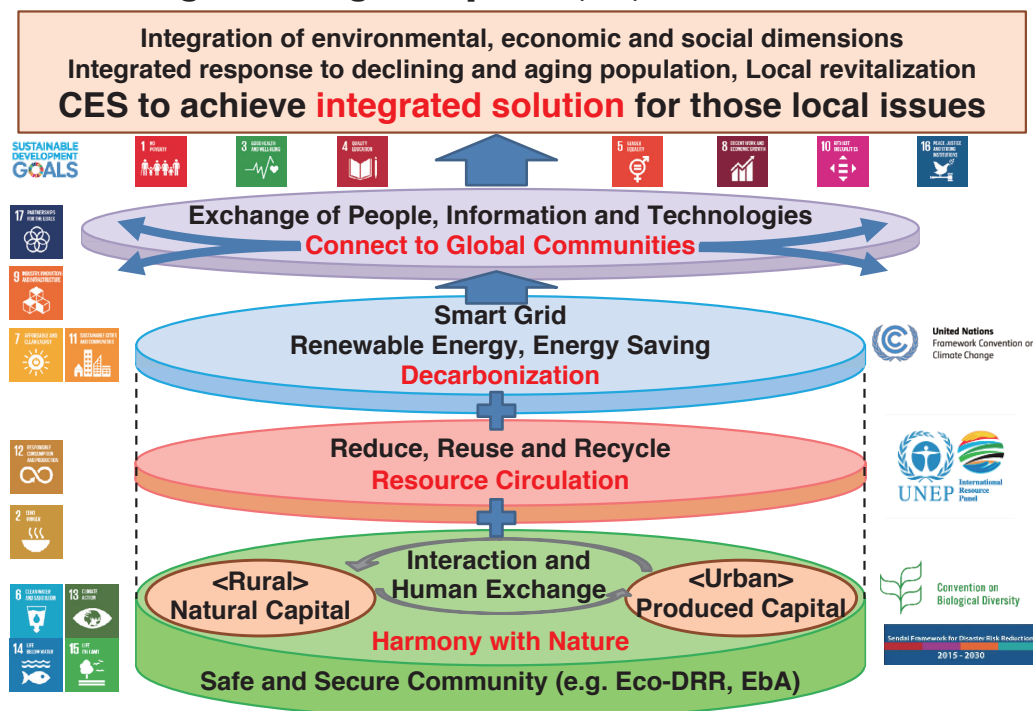
local government policies are indispensable for encouraging this trend. For example, there are some regional authorities in Japan that renovate and provide formerly vacant houses for people moving from the big cities to work remotely. Meanwhile, as depopulation and aging continue in Japan, local community-building would lead to the revitalization of local economies that stops population decline. In a local community where all residents work together, without discrimination against those coming from other regions, elderly people will find it more comfortable to live. Thus we could move closer to the model of an ideal society.

JS: Would there be any competition among these local communities?

Takeuchi: I think that once a successful community is created, there will be many other communities that follow this new society model. Some local authorities in Japan, particularly in remote areas, are now starting to attract young people from outside the region as a basis for their revitalization. I believe that we will see more such examples as time goes on.

The model of a local community responding to a wide range of challenges in environmental, economic and social dimensions is called the Circulating and Ecological Sphere (CES), highlighting a decentralized society in terms of energy and environment (*Chart*). I proposed this concept in 2007, and CES was recognized in the 5th Basic Environment Plan of Japan in 2018. CES is now also the focus

CHART
Circulating & Ecological Sphere (CES)



Source: IGES, 2019

of a study group that I chair at the Ministry of the Environment, where it is discussed as a feature of a post-pandemic society.

Convincing Developing Nations of the New Development Model

JS: Another issue is to convince developing nations, preoccupied with the traditional growth model of mass production and mass consumption, about the merits of this new growth model, in which growth and decarbonization are simultaneously achieved.

Takeuchi: One thing is certain – without encouraging developing nations to move to this net-zero emission model, we cannot achieve the global goal of net-zero CO₂ emissions. To achieve this, we will need cooperation between developed and developing nations.

IGES worked with leaders in Kuala Lumpur to plan that city's decarbonization policy, and we have also collaborated with cities in India on application of decarbonization technologies within their economies and industries. In Asia there is the age-old idea of living in harmony with nature, and so I do not think that decarbonization would be seen as incompatible with economic growth. In this regard, IGES has been working with The Energy and Resources Institute in India on joint research about the global environment and economy. We expect developing nations to work with developed ones in pursuing net-zero CO₂ emissions by 2050.

Education & Dissemination

JS: A decarbonized society is not simply an energy policy issue, but is aimed at the evolution of capitalism, as you have said. The 2020 IGES report depicts a new affluent economy and society of the future. It is important to continue to disseminate this idea.

Takeuchi: Decarbonization is not only related to advanced technologies but also deeply connected with recent trends in socioeconomic progress and individual lifestyles. Starting from decarbonization, if we can develop a new story about decentralized economies and communities, that would lead to the evolution of capitalism.

JS: From now on education will be very important for the long-term future of a socioeconomic system that also enables people to be happy. What do you think about the prospects of such education?

Takeuchi: Having taught at the University of Tokyo for a long time, I see that students are now already well aware of the serious nature of global environment problems even before entering university. However, even though they understand the issue very well, many

seem to have given up hope that things will get better. I think we should continue telling them that although the global environment faces serious problems, we need to believe that their amelioration is possible. In particular, this next decade, from now until 2030, will be crucial for determining the future of the global environment. Without correcting various aspects of our economy and society to achieve some transformation of capitalism by 2030, we will fail to achieve our goal of net-zero CO₂ emissions by 2050. During this next decade, young people will need to learn not only about problems but also solutions. This will lead to a large-scale reform of society, as we aim towards the 2050 target. The younger generation will be engaged in this major task, and their education is very important in the sense that we should transfer the mission to them.

JS: The older generation in Japan that grew up in the 1960s and 1970s, and enjoyed the fruits of mass production and consumption, may find it difficult to understand the need for our economy and society to evolve into a new stage. To convince them of the need for evolution, young people should voice their opinions as much as possible.

Takeuchi: Yes, they should. At the same time, the older generation will need to learn from younger people about diverse views on desirable features for the economy and society of the future. In this age of uncertainty, we need to respect a diversity of views – otherwise we will fail to find the answers.

Note: *Japan SPOTLIGHT* recommends the two websites below as references relevant to the interview.

1) Energy Policy Tracker www.energypolicytracker.org

Initiated by the International Institute for Sustainable Development (IISD), an independent think tank in Canada. The website introduces nations' energy-related policies and budget expenditures for restoration of the economy from the pandemic.

2) Platform for Redesign 2020, Online Platform for Sustainable and Resilient Recovery from Covid-19 www.Platform2020redesign.org

Initiated by IGES in collaboration with the Japanese Ministry of the Environment under the leadership of Environment Minister Shinjiro Koizumi. The platform shows national green recovery policies in response to the pandemic, and includes some budget details.

JS

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