How Should Each Country Promote Actions under the Paris Agreement?

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Launching the Full Operation of the Paris Agreement

As the Paris Agreement, an international framework for climate change countermeasures, will be fully operated from 2020, parties to the agreement will move ahead with initiatives to achieve the goal of limiting the global temperature rise this century to well below 2℃ or 1.5℃ above pre-industrial levels as provided in the agreement. It will be tested whether the global challenge to achieve the agreement's ultimate goal of attaining the global carbon neutral status as early as possible this century could be implemented with initiatives being promoted in all countries, including the United States where President Donald Trump has offered to withdraw his country from the agreement.

Under the Paris Agreement that characteristically differs from the Kyoto Protocol, it is of fundamental importance for parties to the agreement to set their respective greenhouse gas emission reduction targets and consider and implement measures to attain the targets. They are bound by the agreement to repeat the process to consider and implement their targets and measures. And they have to report them to the Secretariat for the United Nations Framework Convention on Climate Change and reconsider them in response to their review. The parties will enhance the targets and measures through the process in order to attain the global goal. In the process, an effective framework will be operated with sufficient heed paid to the diversity of national circumstances including availability of domestic energy resources, economic and social structures, and to the different time lengths required for structural energy transitions. Social and energy supply/demand structure transitions and discontinuous technology innovations will be indispensable for achieving the difficult goal of global net-zero emissions by the end of this century. The Paris Agreement is required to promote international cooperative actions to achieve the difficult goal.

Diversity of Initiatives in Major Countries

What initiatives are countries planning to achieve the ultimate global goal of net carbon neutral status? This paper reviews the viewpoints for initiatives to realize carbon neutral status in the world, the United States and China through opinions presented by experts at the Fourth IEEJ/APERC Joint International Energy Symposium's Session 3 titled "What policies, corporate strategies and changes in awareness are needed to combat climate change?"

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World: Shell's Sky Scenario indicates that the 2℃ scenario would be economically and technologically feasible but politically difficult

According to Mr. Wim Thomas of Shell International BV, Shell's Sky Scenario to assess means for achieving the 2℃ goal indicates that the 2℃ scenario would be economically and technologically feasible but politically difficult. A scenario analysis indicates that CO_2 emissions would fail to peak by 2030 due to economic growth in emerging countries. However, it would be feasible to reach net-zero CO_2 emissions by 2100 by promoting electrification, carbon collection and storage, energy efficiency improvement (a 40% improvement by 2100) and a new energy system including renewable energy. In this process, effective carbon pricing would be required to promote technological innovation and fuel switching.

U.S.: Attention should be paid to state-by-state differences in availability of regional energy resources and market systems for consideration of climate change countermeasures while the government should promote technology development

Dr. Kenneth Medlock of Rice University's Baker Institute argued that climate change countermeasures in the United States should be designed under a bottom-up approach reflecting state-by-state differences in regional availability of energy resources and market systems. For example, Texas features a giant oil and natural gas industry and the largest wind power generation capacity in the United States, meaning the coexistence of a fossil energy industry and clean energy. The wholesale power market has been deregulated but retail power market circumstances are different, the conditions for climate change countermeasures are different in state-by-state. States that have developed depending on the coal industry are required to transform the industrial structure, opposing top-down environmental regulations.

Dr. Medlock noted that while technology development is viewed as significant for successful climate change countermeasures over a long time, U.S. energy research spending has followed a downtrend on a constant dollar basis over the past 25 years. Concern about the downtrend has been emerging from the Congress, leading to a hope that the research and development environment would be improved.

China: Planning to maintain international commitments and implement climate change countermeasures while taking time to form ambitious initiatives

Prof. Dadi Zhou of the Energy Research Institute of the China National Development and Reform Commission noted that China has designated green development as one of five development ideas under the 13th Five-year Plan, given national priority to environment-friendly development and played a key role in effectuating the Paris Agreement, planning to maintain its international commitments and implement climate change countermeasures.

China achieved the 2020 carbon intensity target (of cutting CO_2 emissions per GDP by 40-45% from 2005) in 2017, three years ahead of schedule, and is going ahead with technology and policy research to attain its medium-term target of leading GHG emissions to peak out around 2030, according to Prof. Zhou. He pointed out that it would be difficult and time-consuming to form a

consensus on ambitious policies or institutions in the presence of various stakeholders in the energy market and that China's per capita GDP stands at around $10,000 for the developing stage, indicating that GHG emissions would increase under a traditional economic growth model. China would have to build a new high value-added, environment-friendly economic growth model under initiatives to achieve the goal in the Paris Agreement, he noted, adding that it could not do so in any immediate future.

Attention Should be Paid to Political and Technological Risks and Diversity

Indications from the three experts are that it is possible to develop a scenario in which it would be technologically feasible to achieve the global Paris Agreement goal by using all possible technologies and political actions. However, adequate incentives would be required to develop and introduce necessary technologies to realize the scenario. Attention should be paid to the fact that the scenario includes political risks such as the lack of international cooperative relations and U.S. state-by-state differences impeding nationwide initiatives.

Meanwhile, due heed should be paid to the time length required for structural transition. U.S. technology development expected by Dr. Medlock and the development of a new environment-friendly economic growth model cited by Prof. Zhou will take much time. It is not easy to specify the timing for the development. Time lengths required for structural energy transition may differ depending on country-by-country energy supply and demand conditions or economic/social conditions. The question under the Paris Agreement to be operated from 2020 would be how to promote each country's initiatives in the face of political risks regarding international cooperation, time-related uncertainties and various country-by-country conditions.

How Should Each Country Promote Actions under the Paris Agreement?

At the Climate Action Summit in New York on September 23, 2019, United Nations Secretary-General Antonio Guterres announced that 77 parties to the Paris Agreement "committed" to net-zero carbon emissions by 2050. This meant that multiple countries declared initiatives for net-zero carbon emissions under the activities of the Mitigation Strategy Coalition implemented at the request of the secretary-general. However, the list of 77 countries fails to include the United States, China, India, Japan that would be indispensable for realizing the net-zero emissions.

The approach at the latest Climate Action Summit seems designed to attract attention from the international community with the assessment of country-by-country actions for net-zero emissions by 2050 and to encourage countries outside the list to take such actions. However, it is uncertain whether the international assessment for the unlisted countries would encourage them to take their respective initiatives or whether the difficulty of realizing net-zero emissions by 2050 would prompt them to take a free ride on the Paris Agreement process. The approach's futures effects must be scrutinized. Anyway, technological development and energy supply/demand and social structure transition will be time-consuming and difficult, differing depending on country-by-country

conditions. International cooperation in reducing GHG emissions quantitatively and developing and diffusing technologies will be indispensable for realizing global net-zero emissions. What measures should be taken to meet these points and conditions to promote GHG emission reductions will be questioned in the future operation of the Paris Agreement.

Writer's Profile

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He joined IEEJ in 1991. He has held many senior positions in IEEJ. His specialized field of research is: Energy Supply and Demand Analysis and Forecasting, Global Warming, Energy Conservation and Renewable Energy Policy, Standardization for GHG related activities (ISO). He participates(ed) as committee members related to climate change policy (including UNFCCC/JISC) and renewable energy policy organized by the government, university, etc. He has authored numerous publications.