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COVID-19 Pandemic and Renewable Energy

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The COVID-19 pandemic has drastically changed the global energy situation. The pandemic has evaporated energy demand by plunging the world economy into the worst depression since the Great Depression and forcing lockdowns including powerful travel and outing restrictions. As a result, the energy market has seen an unprecedented level of oversupply that has caused price crashes. A symbolic development is a crude oil price crash that has unusually included the front-month West Texas Intermediate futures price's plunge into negative territory. The pandemic has thus brought about the most dramatic and attention-attracting changes in and impacts on the international energy market and international energy commodities traded on the market. However, the pandemic has exerted other great or deep impacts on the overall energy market. This report discusses such impacts on renewable energy from multiple viewpoints.

Among the impacts of the pandemic on renewable energy, those on supply chains of the renewable energy attracted attention first. The pandemic began with the new coronavirus outbreak in China's Wuhan. In response, China combined strict lockdowns and severe restrictions on businesses, travel and outing mainly in Wuhan and other infection-expanding areas throughout the country. As a result, huge impacts on the Chinese economy emerged early this year. Chinese gross domestic product in the first quarter of this year posted the first negative growth in its recent history. A key relevant point regarding this report is that China has become the center of international supply chains related to renewable energy such as solar photovoltaics and wind power.

The recession seriously affected China's solar PV and wind power generation equipment industry, exerting huge negative impacts on production and supply of such equipment. Given that China has been the center of global supply chains for such equipment, a decline in supply of such equipment and relevant confusions exerted negative effects on renewable energy industries and markets not only in China but also in the rest of the world. Although an electricity demand drop amid the economic contraction came as a demand-side problem for renewable energy as described later, the supply-side problem attracted greater attention in the initial phase. As China gradually reopened businesses in consideration of the decelerating expansion of coronavirus infections, however, its renewable energy-related industry began to restore its operation, with the supply chain problem calming down.

Next, renewable energy attracted great attention regarding the pandemic apparently by being positioned as an economic reconstruction means. As economic reconstruction has become a very important challenge due to the pandemic's huge impacts on the economy, initiatives to position the expansion of renewable energy and other eco-friendly energy sources and relevant technologies as the pillar of economic reconstruction in a post-corona world have emerged particularly in Europe. Since before the pandemic, Europe has led the world in enhancing decarbonization, with the European

Commission coming up with a policy of achieving “net zero” greenhouse gas emissions in 2050. Before the coronavirus disaster became the biggest topic influencing the global energy situation, the Europe-led decarbonization initiative had been the most attention-attracting issue for energy stakeholders in the world. However, the pandemic’s huge economic impacts have turned the situation around. While decarbonization has remained a key topic or challenge, responses to the serious present crisis have naturally become a top priority for the world including Europe.

In such circumstances, however, Europe has paid attention to investment in and promotion of renewable energy and other energy-related advanced technologies expected to contribute to decarbonization as a means of economic reconstruction and restoration from the pandemic-induced depression. The European Commission had pursued the European Green Deal concept positioning decarbonization as a key part of Europe’s long-term growth strategy and is now attempting to incorporate the concept into the reconstruction and restoration from the coronavirus disaster. The economic reconstruction from the disaster in Europe is expected by some people to include not only the acceleration of renewable energy expansion but also other energy-related measures such as the promotion of hydrogen, energy efficiency and clean mobility.

As noted above, renewable energy had been viewed as a key point of decarbonization before being positioned as a pillar for economic reconstruction. If the improvement of energy self-sufficiency is given greater priority in a post-corona world, a new drive may appear for promoting renewable energy. This means that renewable energy may be promoted for economic growth (or reconstruction), environmental conservation and energy security. In this respect, we must pay attention to future developments in Europe leading the renewable energy promotion. If the Democratic Party wins the U.S. presidential election in November, we may have to pay attention to relevant policy developments in the United States as well.

Behind the moves to accelerate renewable energy promotion is the presence of strong arguments for the acceleration. As electricity and other energy demand has plunged on the current economic depression, no optimism can be warranted on renewable energy and relevant investment. GHG emissions in 2020 are expected to decline substantially because of the sharp fall in fossil fuel and other energy demand. If a normal economic growth path is restored with no dramatic change arising in energy consumption and utilization patterns, GHG emissions may recover an upward trend. The current severe economic and energy market conditions do not support investment in decarbonization including renewable energy expansion. Therefore, a sense of crisis about the current conditions may be prompting some people to exploit the current difficulty for arguing for promoting renewable energy by linking renewable energy expansion to economic reconstruction.

However, it should be noted that the situation is not so simple and not necessarily favorable for promoting renewable energy. The electricity demand plunge under the pandemic works to discourage investment in solar PV, wind and other renewable energy power generation. Particularly, sluggish wholesale electricity prices amid the electricity demand plunge in many countries may be affecting the profitability of renewable energy investment. If renewable energy faces competition from fossil fuels, plunges in fossil fuel prices may also discourage investment in renewable energy power generation. The economic efficiency and competitiveness of renewable energy power generation featuring capital costs’ high share of total costs may be affected by capital and financing costs under future economic conditions. These various factors may be combined with uncertainties about the fate of the pandemic and major countries’ relevant policies to exert great influence on future renewable

energy expansion. I would like to pay attention to future relevant developments.

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