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Diverse Coexisting Views on the Future of Fossil Fuels

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It is an undeniable fact that the world today depends on fossil fuels such as oil, gas, and coal for about 80% of its total primary energy supply. By taking advantage of their abundance, price competitiveness, and convenience, fossil fuels have come to occupy a major position in today's energy supply. In addition, we must think about the existence of huge energy supply chains that stretch around us on a global scale to support our daily energy supply. Only when there are infrastructure and supply chains to support energy supply as a flow does energy supply become a reality. It is important to note that many of these supply chains are extremely long-lived assets that cannot be easily replaced immediately. If their replacement proceeds in line with the aging of stock and assets, it will take a considerable amount of time for the whole of the supply chain to change significantly. This is also an important point for considering the actual state and future of energy.

However, various views are emerging about the future of fossil fuels at the center of energy that supports modern society, increasing uncertainties about the future. The development and diffusion of new technologies, people's energy choices, changes in fossil fuels' competitiveness affected by drastic cost reductions for competing energy sources, and energy-related policy changes that drive these developments have become important drivers that exert influence on the future of fossil fuels. Of particular importance is the drastic enhancement of climate change measures. The growing need to drastically reduce CO_2 emissions to achieve carbon neutrality has a significant impact on the future of fossil fuels.

In the International Energy Agency's World Energy Outlook 2023, released on October 24, the Executive Summary states, "We are on track to see all fossil fuels peak before 2030." It points out that the impact of the Ukraine crisis will further accelerate the enhancement of decarbonization efforts so that the peak demand for fossil fuels may be even earlier than previously thought. In the past, an IEA WEO analysis envisioned a future in which demand for fossil fuels will decline rapidly in the Net-Zero Emission scenario, using the backcast approach (that analyzes how the world should change to achieve pre-fixed goals) to depict a future in which the entire world will reach net-zero GHG emissions by 2050. However, the key takeaway of the latest IEA WEO is that fossil fuel demand will peak before 2030 in all three scenarios in WEO.

"Before 2030" means that demand for all fossil fuels will peak in 2029 at the latest, or within six years. Of course, peaking does not mean that demand will disappear immediately or decline sharply. As energy sources, fossil fuels will retain a certain importance. However, a significant change is indicated by the prediction that fossil fuels that have accounted for most of the world's energy supply and remained in strong demand for the world as a whole will peak in the near future. The peaking of fossil fuel demand, if realized, may represent the beginning of a dramatic change that would mark a new era.

However, there are various views about the future of fossil fuels. For example, the Organization of the Petroleum Exporting Countries in its World Oil Outlook (WOO) 2023 on October 9 announced the reference scenario in which global oil demand will increase moderately until 2045, supported by robust expansion in developing countries such as India. In the OPEC WOO scenario, gas demand will continue to increase steadily until 2045, though coal demand will decrease. Demand for fossil fuels as a whole is forecast to expand moderately until 2045. In this respect, the OPEC WOO pointed out that investment should be secured to stabilize the oil market. It is estimated that a total of $14 trillion should be invested in the oil sector by 2045 to meet the forecast demand growth.

In the IEEJ Outlook 2024, which was discussed in "A Japanese Perspective on the International Energy Landscape (659)," we presented two scenarios including the Reference Scenario that assumes the continuation of current trends and indicates that oil and gas demand will increase towards 2050, though with coal demand declining. In the Advanced Technologies Scenario in which energy-related technologies will be introduced to the maximum extent possible for decarbonization and energy security, oil demand will peak, with gas demand leveling off in the 2030s before decreasing moderately. In this way, diverse views have been given on the future of fossil fuels in long-term global energy outlooks. It seems that views about the matter are growing more diverse, instead of converging. As uncertain factors increase, it is extremely difficult to work out a long-term outlook. Given the importance of fossil fuels, however, more scientific, objective, and reliable analyses may be required on the future of fossil fuels as the core of energy that supports our lives today.

Meanwhile, various interesting developments have been observed in the actual energy market. They may represent the energy supply players' movement to reconsider the importance of fossil fuels. As noted in "A Japanese Perspective on the International Energy Landscape (656)," I feel that the oil-producing countries of the Middle East in particular are becoming more aware and confident of the importance of oil and their position in the international energy market in light of market realities amid the Ukraine crisis and the growing importance of the Global South in the midst of the division of the world. This point can be clearly reflected in the abovementioned OPEC long-term oil demand outlook.

There seems to be a similar trend among international oil companies or majors. Recently, oil majors' massive corporate acquisitions have been reported worldwide. On October 11, ExxonMobil announced that it would acquire Pioneer Natural Resources, a major independent shale resources development company in the United States, for $59.5 billion (about 8.8 trillion yen). On October 23, Chevron announced the acquisition of Hess, a major U.S. oil and gas development company, for $53 billion (about 8 trillion yen). These mega acquisitions are basically designed to significantly expand oil and gas production and enhance business operations and profitability. Both oil majors made strategic business decisions to make huge investments in oil and gas development based on their assessment of the realities of the international energy market. In addition, oil majors are strengthening their liquefied natural gas business initiatives with a view to continuing LNG demand expansion in the future. They have launched LNG projects as buyers and taken advantage of their deep marketing capabilities to increase their presence as portfolio players in the world. These moves may represent their strategies to develop their business operations by leveraging their strengths based on market realities. Behind their moves may be their judgment and assessment of the future of oil, gas, and LNG markets, based on their business perspectives and experiences.

There are still high uncertainties about the international situation surrounding fossil fuels. The role of fossil fuels in the future will remain an important point that will decisively influence the world.

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