A Special Flash Report

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Covid-19 and the Outlook for Oil, Natural Gas, and LNG Demand in 2021

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Introduction

The Covid-19 epidemic continues to spread. Three months have passed since January 31, 2020 when the epidemic was declared a public health emergency of international concern (PHEIC) by the World Health Organization, but there is still no end in sight. Lockdowns imposed to restrict the movement of people and goods have brought economic and social activities to a halt worldwide, causing energy demand to collapse. This has triggered an unprecedented supply glut on the international market and major instability, causing oil prices in the international energy market to crash.

Global economic growth is projected to sink into negative territory in 2020 for the first time since the 2008-2009 financial crisis, and demand for oil and gas will suffer its worst decline in history[3] according to the special flash report "Demand for Oil, Natural Gas, and LNG under the Worst Global Economic Conditions since the Great Depression (IEEJ, April 17, 2020)" by the authors of this report. That report focused on demand in 2020, but did not examine the demand in 2021 after the possible end of Covid-19. While the most pressing issue for the international energy market is to respond to the unprecedented supply glut and resulting collapse in oil prices, the supply-demand situation going into 2021 and whether oil prices and other factors will stabilize are also serious concerns. To answer these questions, the authors will examine the trends in the global energy demand toward 2021 as a baseline. Following our previous report, this report analyzes the global demand for oil, natural gas, and LNG using three scenarios for the world economy in 2021, and examines the implications for the international energy market.

1. Analytical framework

In this estimate, we forecasted the demand up to 2021 based on the report "Demand for Oil, Natural Gas, and LNG under the Worst Global Economic Conditions since the Great Depression" noted above. The two scenarios in that report, namely the Reference Scenario and the Longer Pandemic Scenario, were used again in this estimate as the major assumptions for economic growth and other factors up to 2021, and a new scenario assuming that a second outbreak of the pandemic strikes in 2021 was added.

The Reference Scenario (RS)

Based on the World Economic Outlook of the International Monetary Fund (IMF) released in April 2020, we assumed that the pandemic will end in the second half of 2020 and the economy will bottom out in Q2 and then start to recover. The world economy will grow by 5.8% year-on-year in 2021, a massive increase from the 3.0% contraction in 2020.

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[3] The greatest decline since at least the 1960s (BP Statistics)

The Longer Pandemic Scenario (LPS)

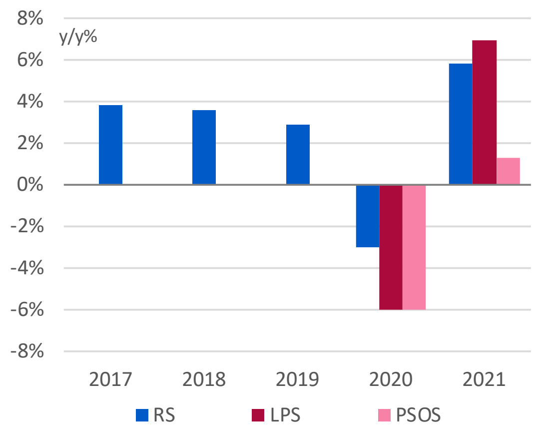
Based on the "longer outbreak in 2020," the IMF's alternative scenario in which the virus continues to spread for 50% longer than the reference scenario, we prepared the LPS in which the spread of the virus is prolonged and has a more serious impact on economic activity in 2020. The LPS assumes that global economic activity will not bottom out until Q3 and the 2020 GDP growth rate will fall 6.0% year-on-year, but will recover quickly thereafter and grow by 7.0% year-on-year in 2021.

The Pandemic Second Outbreak Scenario (PSOS)

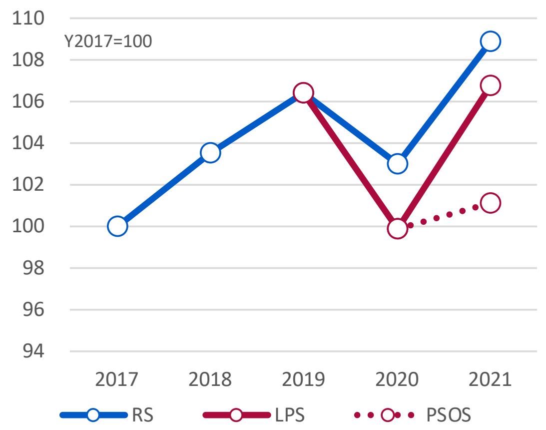
Based on the "longer outbreak in 2020 plus new outbreak in 2021" scenario suggested by the IMF (the pandemic ends temporarily in 2020 before a second outbreak strikes in 2021), we assumed that a second outbreak occurs in 2021, resulting in a sustained impact on economic activity. We assumed that the second outbreak will have less impact than the first and will occur from Q1 to Q2 of 2021. As a result, the global economy would grow by only 1.3% year-on-year in 2021 (the growth rate for 2020 would be −6.0% year-on-year as estimated under the LPS)[4].

Under the RS and LPS, the world GDP will recover rapidly in 2021 and exceed 2019 levels. Meanwhile, under the PSOS, GDP growth in 2021 will be positive and higher than in 2020 but remain far lower than 2019 levels, and economic activity will remain sluggish.

World GDP growth rate



World GDP level (2017 = 100)



2. Outlook for oil demand

Under the RS, oil demand is projected to fall to 90.7 Mb/d (down 9.3 million B/D year-on-year) but bounce back to 100.7 Mb/d in 2021 (up 11.0% year-on-year). Oil demand will surpass 100.0 Mb/d marked in 2019 and reach record-high levels next year. Meanwhile, under the LPS, oil demand will decrease to 87.2 Mb/d in 2020 (down 12.8% year-on-year) and recover to 99.0 Mb/d in 2021 (up 13.5% year-on-year), but not quite reach 2019 levels. In both scenarios, demand for transportation fuel will decline drastically during the pandemic due to movement restrictions, but social life will return to normal after the pandemic ends and oil demand will recover to normal levels as economic activity resumes.

With regard to quarterly trends in demand, under the RS, demand will bottom out in Q2 (the second quarter) of 2020 with 83.3 Mb/d, and thereafter rise gradually to 92.3 Mb/d in Q3 and 94.3 Mb/d in

[4] The global economic growth rate under the PSOS was determined by the authors, referring to the IMF Outlook, etc.

Q4. A supply glut of 7–8 Mb/d is expected in Q2 even if the OPEC Plus production cut of 9.7 Mb/d starts in May, and oil prices will face particularly strong downward pressure. If this joint production cut continues, even with ever-smaller curtailments, the oil supply glut may shrink dramatically in the second half of the year as demand increases. Then, in 2021, the quarterly oil demand will recover almost to 2019 levels under the RS, with 98.0 Mb/d in Q1, 100.1 Mb/d in Q2, 101.9 Mb/d in Q3, and 102.9 Mb/d in Q4. This will allow OPEC Plus to unwind the production cut to pre-coronavirus levels, setting a path for supply and demand to stabilize.

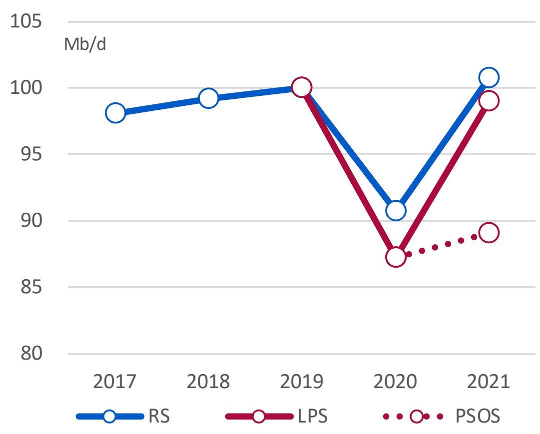
Under the LPS, the low point of demand occurring in Q2, 2020 will be lower than under the RS with 82.1 Mb/d and the supply glut will be more serious. Demand will remain weak for longer with 84.9 Mb/d in Q3 and 89.1 Mb/d in Q4. It will be crucial to continue with, and not ease, the joint production cut during this period. In 2021, demand will be much lower year-on-year in Q1 with 95.2 Mb/d but will rise to 2019 levels with nearly 100 Mb/d in Q2 onwards, making it likely that the market will stabilize.

However, under the PSOS which expects a second outbreak in 2021, oil demand will remain sluggish in 2021 with 89.0 Mb/d (though rising 2.1% year-on-year), remaining below 90 Mb/d for the second consecutive year. We assumed that the second outbreak occurs in Q1 to Q2, 2021 and that the movement of people is restricted again through border controls and city lockdowns, though to a lesser extent than in 2020[5]. Trends in demand will be similar to that of the LPS, though a second low point of demand will occur in Q2 in 2021, with demand falling short of 2019 levels by around 10 Mb/d in each quarter with 90.0 Mb/d for Q1, 84.9 Mb/d for Q2, 88.4 Mb/d for Q3, and 92.9 Mb/d for Q4.

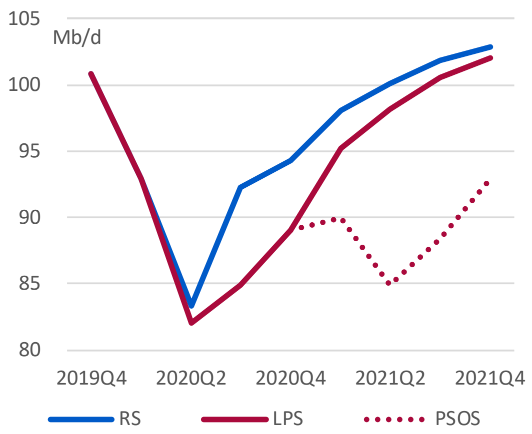
In this case, it will be necessary to keep oil production around 10 Mb/d lower than 2019 levels from Q2, 2020 through Q4, 2021 in line with the global decline in demand. WTI, which is currently in the $10 range, will remain low and under downward pressure for almost two years until 2021, including a possible fall to single-digit territory. Meanwhile, the oil market will face the crucial question of whether it is possible to maintain an enormous reduction of roughly 10 Mb/d for nearly two years. Under the PSOS, however, such a prolonged and enormous supply cut is critical, otherwise oil prices will inevitably fall to extreme levels. Such extreme low prices would not only have devastating consequences for oil-producing economies but, from a broader perspective, cause damage to consumer countries as well as the entire world as a result of the negative impact on energy security due to instability in oil-producing countries and by causing a supply crunch down the road by deterring necessary investment in energy. To avoid this situation, both oil-producing and -consuming countries, including developed countries, must consider and implement all possible options, including production adjustments and more stockpiling. In other words, prices will remain volatile until some sort of cooperation is established between producer and consumer countries.

[5] This assumption reflects the IMG's Outlook that the second outbreak will be milder than the first, and the second outbreak was set to occur one year after the first.

Oil demand (annual)



Oil demand (quarterly)



3. Outlook for natural gas and LNG demand

Under the RS, natural gas demand is projected to fall by 7.2% year-on-year to 3,682 Bcm in 2020 but increase rapidly to 4,053 Bcm in 2021 (up 10.1% year-on-year) and exceed 2019 levels. LNG demand will also fall by 7.8% year-on-year to 325 million tonnes in 2020 and rebound to 363 million tonnes in 2021 (up 11.5% year-on-year), exceeding 2019 levels. For both natural gas and LNG, demand will decline only in 2020 and reach a record high in 2021.

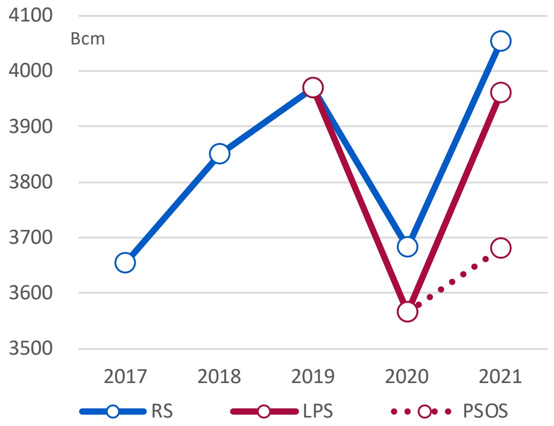
The trend is similar for LPS, under which demand will recover rapidly in 2021. Natural gas demand will increase to 3,961 Bcm, up 11.1% year-on-year, and LNG to 353 million tonnes, up 13.0%. However, demand will not quite reach 2019 levels for both natural gas and LNG. Nevertheless, as with the RS, both natural gas and LNG will face extreme declines in demand only in 2020, and the demand for these clean energies will start to recover as the pandemic subsides and the economy recovers, returning mostly to 2019 levels after one year.

However, the situation is quite different under the PSOS. Under this scenario, natural gas demand will increase by 3.2% year-on-year to 3,681 Bcm and LNG demand by 4.2% to 325 million tonnes in 2021, but the recovery will be slow and fall far short of 2019 levels. Demand will decline again as the second outbreak strikes, limiting the recovery to a small one on a full-year basis. As a result, the supply glut will continue in these markets in 2021. In the LNG market, for example, a supply-demand gap (excess supply) of around 60 million tonnes over the 2019 supply capacity levels may persist for two years, imposing downward pressure on the market.

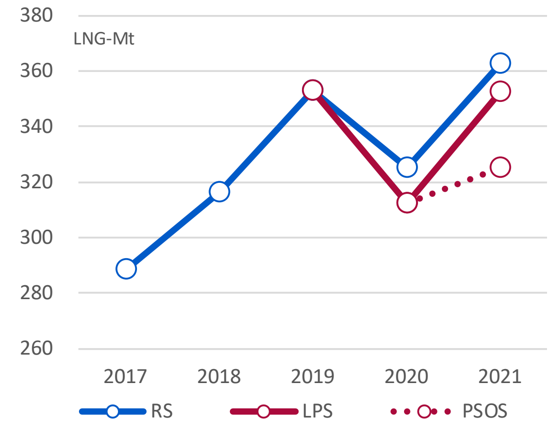
As a supply-side solution to this supply-demand gap, the supply of US LNG, which has some flexibility, may play a role. Further, adjustments may also be made in an increasing number of individual projects by fully leveraging operational flexibility. Needless to say, a significant supply glut will exert sustained downward pressure on spot LNG prices if it continues for a long time. Further, considering the oil market trends under the PSOS, low oil prices may cause declines in long-term contract LNG prices that are linked to oil prices, causing overall LNG prices to remain low in 2021.

Another key point is the possibility that falling prices triggered by the supply-demand gap may stimulate demand. Low LNG prices may stimulate LNG demand in emerging markets that have growth potential if the price becomes low enough to be relatively competitive over its rival coal; future developments must be watched closely. The increase in residential gas and electricity demand resulting from spending more time at home during lockdowns also deserves attention. Electricity demand is expected to rise with the increase in ICT usage if teleworking remains to some extent even after Covid-19 subsides. This in turn may lead to an increase in gas-fired thermal power generation and demand for natural gas and LNG. We must continue to watch and analyze these possibilities going forward.

Natural gas demand



LNG demand



Conclusion

If Covid-19 is eradicated in 2020, economic activity will recover rapidly in 2021 and demand for oil, natural gas, and LNG will return to or even exceed their levels during normal times. However, if the virus cannot be eliminated completely and a second outbreak occurs, the demand for oil, natural gas, and LNG will all remain low and have a strong, sustained effect on the supply-demand balance and prices, causing a major impact on the entire international energy industry as well as the global economy and international politics.

Past pandemics (the Spanish flu (1918–1920) and the Asian flu (1957–1958)) both suggest that a second outbreak could occur and that the battle against Covid-19 could last several years. This possibility cannot be ignored; we must closely monitor developments in the Covid-19 pandemic in analyzing the international energy market.

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