



IEEJ e-NEWSLETTER

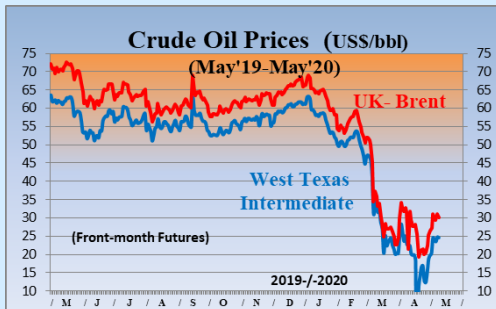
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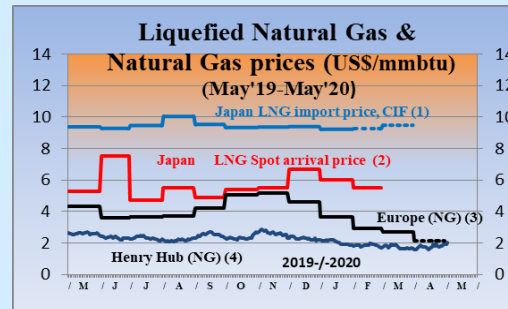
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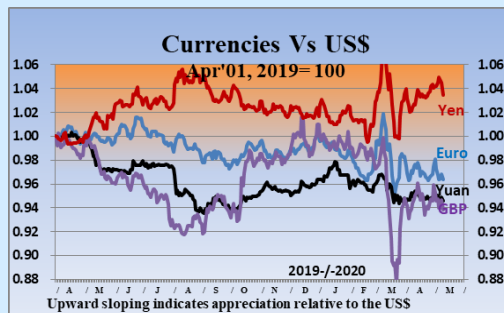


Source: DOE-EIA, Financial Times, NASDAQ

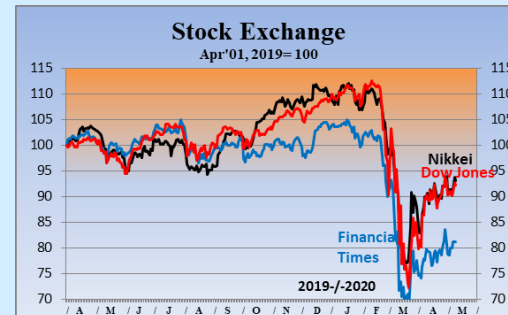


Sources:

- (1) Ministry of Finance "Japan Trade Statistics"
- (2) Ministry of Economy, Trade and Industry (arrival month basis)
- (3) Estimated by World Bank (Netherland Title Transfer Facility)
- (4) DOE-EIA, NYMEX (Front-month Futures)
- (5) Investing.com



Source: x-rates.com



Source: Financial Times

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Summary

【Energy Market and Policy Trends】

1. Impact of Covid-19 on Energy Demand

The declines in economic activity and energy demand caused by the Covid-19 pandemic far exceed those experienced during the 2008–2009 financial crisis, which was considered at the time to be a once-in-a-century crisis, and are having an enormous impact on the international energy market.

2. Developments in Nuclear Power

TVO, the operator of Olkiluoto Unit 3 currently under construction in Finland, applied to the Finnish nuclear regulator for permission to load fuel into the reactor. The start of power generation is expected to be delayed due to Covid-19.

3. Recent Developments in the Oil and LNG Markets

With the decline in global oil demand far exceeding the joint production cut by oil producers, oil prices will remain low and volatile. The Asia premium of LNG will narrow going forward but will not disappear completely.

4. Policies Related to Climate Change

A decision was made to postpone COP26 scheduled for November to 2021. Post-Covid-19 economic stimuli being discussed in China and the EU include the green transition and the digital transformation.

5. Update on Renewable Energies

In other countries, there are signs of increasing curtailment of the output of solar PV and wind power as electricity demand shrinks under city lockdowns and curfews, as well as moves to accelerate the introduction of autonomous and distributed systems to prepare for disasters. Close attention is required.



1. Impact of Covid-19 on Energy Demand

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The coronavirus (Covid-19) pandemic is raging worldwide. According to the World Health Organization, at least 2.55 million people have been infected and 170,000 have died as of April 23. To prevent the spread of contagion, many countries are restricting people from leaving their homes or traveling, causing massive disruption of economic activity and daily life. This, in turn, is causing the demand for energy to plunge.

At least 120 countries are restricting residents from nonessential outings and requesting the voluntary suspension of businesses and events. Approximately 4.1 billion people, more than half the world's population, are under some form of lockdown, though the severity of restrictions varies (estimated as of April 9). According to an estimate by the IEEJ, this global lockdown is causing a reduction in energy demand equivalent to 4.1 million tonnes of oil-equivalent per day (down 11% from normal times). Oil demand, which has been affected the most in transportation fuels, has declined by 18.1 million barrels per day (Mb/d, down 20% from normal times). The decline is greatest in Europe and North America which are under strict city lockdowns and have high rates of car ownership. Natural gas demand has declined by 1.1 billion cubic meters (Bcm, down 11% from normal times), or 780,000 tonnes in LNG-equivalent per day. The longer the lockdowns continue, the harder total demand will be hit.

These restrictions on the movement of people are crushing economic activity. The International Monetary Fund projects global economic growth of minus 3% in 2020, the first negative growth since 2009 following the financial crisis (the “Lehman shock”) of minus 0.1%. As a result of the slump in industrial activity and international transportation, as well as lockdowns, the IEEJ projects that global oil demand will fall by as much as 9.3 Mb/d year-on-year to 90.7 Mb/d (down 9.3%), the largest decline since at least the 1960s. Oil demand will fall particularly sharply in Q2 to 83.3 Mb/d. Natural gas demand is projected to drop to 3,682 Bcm, down 7.2% year-on-year, and LNG demand to 325 million tonnes, down 28 million tonnes year-on-year. This decline in energy demand will worsen if economic growth shrinks further or the length and intensity of lockdowns increase.

Japan declared a “state of emergency” for seven prefectures on April 7 (expanded nationwide on the 16th) and requested that residents reduce person-to-person contact by 80% to stop the infection from spreading. Unlike the lockdowns in some other countries the declaration is not mandatory. Assuming that self-imposed restrictions produce similar effects and considering an urban area with 30 million people as an example, energy demand will fall by 83,000 tonnes of oil-equivalent per day (equivalent to 10% of Japan's final energy demand). Furthermore, the decline in demand for fuel oil, including car fuel, which is hit hardest, will reach 48,600 kL per day (306 kb/d), a drastic decline accounting for 11% of the total fuel oil demand of Japan.

The declines in economic activity and energy demand caused by the Covid-19 pandemic will far exceed those experienced during the 2008–2009 financial crisis, which was considered at the time to be a once-in-a-century crisis (a fall of 1.0% in oil demand in 2009). Notably, the decline in oil demand consists mostly of a decrease in demand for transportation fuel due to restrictions on the movement of people and goods, and is thus different in nature from a simple contraction in economic activity. This unprecedented collapse in demand has caused a massive supply glut in the international oil, natural gas, and LNG markets and is placing downward pressure on international energy prices. It is crucial to consider negative factors in the international energy market, global economy, and international politics resulting from the collapse in demand and prices, and to take action to stabilize the markets through international cooperation.



2. Developments in Nuclear Power

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On March 25, Czech national power company CEZ Group submitted an application to the State Office for Nuclear Safety (SUJB) for permission to construct new nuclear units at the Dukovany Nuclear Power Station (VVER (Russian PWR), four 510 MW units). Dukovany's Units 1 through 4 have been operating for more than 30 years since the plants entered operation in 1985–1987, and the country urgently needs to build new nuclear plants as it aims to reduce its dependency on coal. SUJB has said that it will make a decision on whether to issue a permit within 12 months in accordance with the country's nuclear power law. As for the reactor types, CEZ has just said that “two 1,200 MW PWRs” will be built. The upcoming processes for selecting the reactor type and supplier deserve attention.

Nuclear new build projects are making progress in various emerging countries. On April 4, the installation of reactor core internals was completed at Karachi Unit 3 (Hualong-1 (Chinese PWR), 1,100 MW) currently under construction in Pakistan. The installation of reactor internals was finished for Unit 2, also a Hualong-1, in January 2019, with Unit 2 scheduled to start operation in 2021 and Unit 3 in 2022. In Belarus, on April 15, Rosatom, the vendor of Ostrovets Unit 1 currently under construction, announced that hot tests (pre-startup function tests with fuel assemblies loaded) which began in December 2019 have been completed at the power plant. A week earlier, on April 8, a Russian construction worker at the plant tested positive for coronavirus. The effect of this on the construction plan is unknown; no information on the future schedule has been released.

The spread of the coronavirus is also affecting other construction projects. On April 7, Rosatom announced that it had chartered a flight for the 178 workers at the Rooppur Nuclear Power Plant in Bangladesh who wish to temporarily return to Russia due to the pandemic. There are more than 4,000 workers at the site in total. Rosatom has stated that this will not stop the construction project from proceeding as scheduled.

On April 8, TVO, the operator of Olkiluoto Unit 3 (EPR (a Framatome PWR), 1,700 MW) currently under construction in Finland, applied to the Finnish nuclear regulator STUK for permission to load fuel into the reactor. TVO estimates that it will take several months for a permit to be issued and expects a slight delay in the start of fuel loading scheduled for June. TVO has also said that the fuel loading itself by the vendor may be delayed due to the coronavirus, and so the current schedule to start transmission tests in November 2020 and to start generating power at the rated output from March 2021 will inevitably be affected.

TVO says the coronavirus pandemic will give a negative impact to the schedule while Rosatom says there will be no change of the schedule. It is an interesting issue to be discussed.



3. Recent Developments in the Oil and LNG Markets

Yoshikazu Kobayashi, Senior Economist
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On April 20, the US WTI oil futures market closed in negative territory for the first time in its history. This abnormal situation occurred as traders struggled to secure tanks to store crude at a delivery point in Cushing, Oklahoma as the May contract approached expiry (April 21st), and had to pay to get oil taken off their hands. The tanks in Cushing still had some capacity but their leasing rights had already been sold, thus causing the negative price. Brent crude, which affects the crude import price for Japan, is also down to the \$20 range. However, the sharp fall for WTI due to special circumstances is unlikely to occur for Brent which is traded mainly by sea and thus has fewer storage restrictions compared to WTI crude.

The main cause of the current global slump in oil prices is the decline in demand for transportation fuel associated with the global plunge in the movement of people and goods caused by the coronavirus pandemic. Currently, demand has dropped by as much as 20 million barrels per day. The scale of this slump, even though it is a “momentary maximum,” means that in a matter of months the global oil demand dropped by more than its growth in the last twenty years, which is unprecedented in both scale and speed.

Under such circumstances, on April 12, OPEC and non-OPEC countries (OPEC Plus) including Russia agreed to jointly cut production by 9.7 mb/d. The agreement is highly significant in that oil producers, which had begun to raise production in a price war with each another as of March, were able to quickly reverse gear and agree on a joint production cut of unprecedented scale through close collaboration among the countries’ leaders, demonstrating that international politics can play a major role in stabilizing the oil markets. However, even this historic reduction agreement of 9.7 mb/d is clearly insufficient to match the loss in demand.

For the time being, the current supply glut is expected to be absorbed by adding to stockpiles, but there are limits to this approach as the US is already struggling to access storage tanks: the only countries able to hold large stockpiles are China, South Korea, and India. This suggests that ultimately, supply and demand will have to be adjusted through the market and the price will inevitably continue to fall until it becomes too low for high-cost producers in North America, South America, and Europe, who will be forced to stop production. Accordingly, oil prices are likely to remain low and extremely volatile in the near-term.

The slump in oil prices is having a considerable impact on the LNG market as well. The shrinking global demand has worsened the already saturated supply-demand balance, pushing down spot prices in the Asian market to the \$2/MMBtu range. Meanwhile, as the current oil price slump will not be reflected in contract LNG prices for another three to five months, it will take time for the gap between European and US gas prices and the Asia premium to narrow.



4. Policies Related to Climate Change

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On April 1, the COP Bureau decided to postpone COP26 scheduled for November in Glasgow, UK, to 2021 due to the coronavirus epidemic. While the Parties are required to communicate or update their 2030 targets (NDCs) within 2020, only eight countries had done so by April 22. Among them, the Marshall Islands, Norway, Singapore and Chile have updated their NDCs, while Switzerland and Zambia are currently doing so and Japan and New Zealand have communicated its NDCs. The EU has yet to submit one. With the spread of the coronavirus and postponement of COP26, further delays in the submission and updating of NDCs are expected.

According to a survey by German TV RTL on March 26, the percentage of respondents who consider climate change and the environment as important issues dropped from 37% in August 2019 to 9%, and the popularity of the Christian Democratic Union of Germany and the Christian Social Union in Bavaria (CDU/CSU) rose from 26% as of March 7 to 36% and that of the Green Party fell from 24% to 17%. Amid the fall in the priority of climate action, on March 16, Prime Minister Andrej Babis of the Czech Republic commented that “Europe should forget about the Green Deal now and focus on the coronavirus instead.”

On March 26, the Members of the European Council comprised of the leaders of the Member States adopted a joint statement on the EU actions in response to the COVID-19 outbreak, commenting that the EU should “start to prepare the measures necessary to get back to a normal functioning of our societies and economies and to sustainable growth, integrating inter alia the green transition and the digital transformation.” With this statement, the debate over priority between the European Green Deal and the coronavirus appeared to have reached a compromise. However, on March 30, 37 conservative members of the European Parliament issued a letter requesting that new legislation under initiatives such as the European Green Deal be postponed. Meanwhile, on March 31, the European Commission launched public consultation on the EU’s 2030 climate ambition increase, and on the action and policy necessary for it, aiming to put forward a comprehensive plan in September. Further, the climate and environment ministers of 17 countries published a letter saying that European Green Deal must be central to a resilient recovery after Covid-19, and 79 Members of the European Parliament called on for green recovery investment packages acting as accelerators of the transition towards climate neutrality. Such discussions are continuing.

Regarding economic stimuli, China will reportedly focus on investing in new infrastructure such as 5G, artificial intelligence, and charging stations for electric vehicles, drawing on its experience from the virus epidemic. In Germany, Finance Minister Olaf Scholz (Social Democratic Party) said the government plans a stimulus package that advances the nation technologically and helps the economy move toward climate neutrality.

In the United States, Joe Biden and Bernie Sanders have mentioned forming joint task forces on six topics including climate change. It must be watched whether this will cause Mr. Biden to change his climate platform.



5. Update on Renewable Energies

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In the renewable energy industry the coronavirus epidemic is not just disrupting the product and component supply chains, but is having diverse impacts. These range from signs of increasing curtailment of the output of solar PV and wind power as electricity demand shrinks under city lockdowns and curfews, to moves to accelerate the introduction of autonomous and distributed systems to prepare for disasters.

Shrinking electricity demand has been observed in many countries and regions as a result of city lockdowns and curfews. For example, the March electricity demand in major states and regions in the US decreased from a typical year by several percent to over 10 percent. Electricity demand is shrinking overall because the decline in electricity demand in the commercial sector resulting from the closure of facilities is greater than the increase in residential electricity demand. This phenomenon is consistent with the analysis in the IEEJ's special flash report "An Estimate on the Impact of a "City Lockdown" on the Global Energy Demand" (April 2020, Suehiro and Koyama). In California, electricity demand has dropped by 5–8% on business days and 1–4% at weekends compared to the levels before the state-wide lockdown that began in mid-March. With variable renewable energies comprising over 20% of its power mix, California's output curtailment rate of solar PV and wind power was at around 5% in February and March, showing almost no impact of city lockdowns. Some consider that this rate will be even higher going forward as electricity demand shrinks further.

Needless to say, the size of the curtailment of renewables output is not determined only by electricity demand, but also by the electricity load curve. In the United States, the daily electricity load curve is reportedly flattening overall, with a more moderate rise in the morning peaks and lower evening peaks due to city lockdowns and curfews. Japan should also monitor the loss of electricity demand as a result of the declaration of a state of emergency, how the electricity load curve will change, and how much the curtailment of output from solar PV in particular, which tends to concentrate in the Golden Week holidays, will increase as a result of these changes.

Meanwhile, the demand for residential solar power systems and batteries is rising in the state of New South Wales, Australia. This trend initially emerged due to the fall in prices of these products and extremely high electricity tariffs, but accelerated as more people aimed to achieve self-sufficiency driven by a rise in environmental awareness after the bush fires that started last autumn and continued until this February and the floods that followed, as well as concerns over energy supply disruptions due to the coronavirus pandemic. Fortunately, the supply of solar power systems and batteries, which relies heavily on imports from China, is returning to normal.

Introducing batteries reduces the amount of renewable energy curtailment by boosting the domestic consumption of residential solar power, especially now when residential electricity demand is increasing due to curfews, while also bolstering resilience. Enhancing resilience is one of the advantages of regional-use power sources, a category of renewable energy currently being deliberated in a government council as a promising energy source after the end of the current FIT system. The changes in the supply and demand structures of electricity induced by the coronavirus epidemic in other countries may provide useful information in analyzing the impact of the pandemic on Japan.



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