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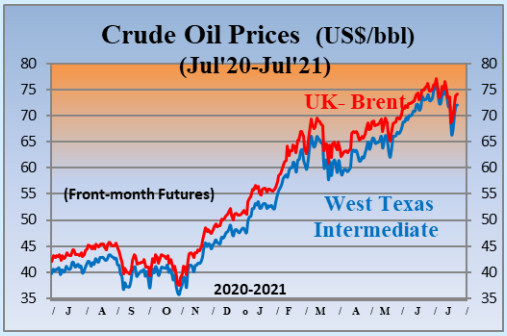
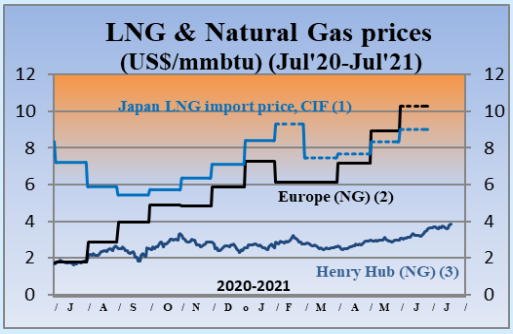
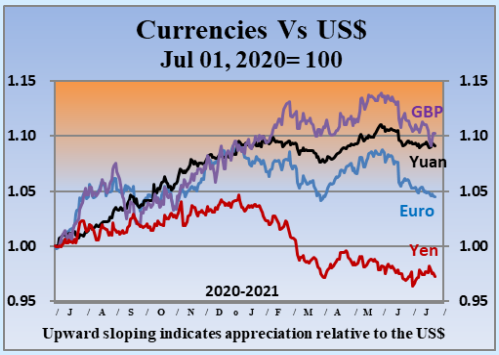


Sources:
(1) DOE-EIA
(2) Investing.com



Sources:
(1) Ministry of Finance "Japan Trade Statistics"
(2) World Bank (Netherland Title Transfer Facility)
(3) DOE-EIA, NYMEX (Front-month Futures)



Source: x-rates.com

Sources:
(1) Finance. Yahoo.com
(2) Investing.com

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Summary

【Global Monitoring】

1. US: California ISO Supply Crunch

A supply crunch has hit again this year, causing California ISO to issue eight energy use reduction requests so far. This summer, batteries assisted supply capacity to some extent.

2. EU: Soaring Electricity and Gas Prices

In Europe, natural gas prices are soaring due to a supply crunch amid low stock levels. Wholesale electricity prices are also climbing due to low wind power availability and soaring gas prices. Effects on industry and electricity tariffs are starting to be seen in some areas.

3. China: Mid- to Long-term Plan for Pumped-Storage Hydropower Announced: 3.8-fold Growth in 10 Years

China released its medium- to long-term plan for pumped-storage hydroelectric power through 2035. The target of increasing pumped-storage hydropower to 120 GW, or 3.8 times the level in 2020, by 2030 was set. The challenge for meeting this ambitious target will be securing enough land.

3. ME: Regional Diplomacy in Full Swing with U.S. Withdrawal

With the sudden change in the situation in Afghanistan caused by the U.S. withdrawal, diplomatic activity is accelerating among Middle Eastern countries to stabilize the region. Negotiations to rebuild the Iran nuclear deal are also slated to resume soon.

5. Russia: A Gas Power's Role Revisited with the Rising International Criticism of Putin's Authoritarianism

As gas prices soar in Europe, Russia's role is receiving attention. A lower house election was held but was severely criticized for its undemocratic process. Amid tense political relations between Europe and Russia, the question – whether or not Russia could contribute to stabilization of the European gas market - deserves attention.

1. US: California ISO Supply Crunch

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A supply crunch has led to eight energy use reduction requests so far this year at the California ISO, which implemented rotating outages last summer. Users were requested to cut back on energy use in the evening on June 17 and 18, July 9, 10, 12, 28, and September 8 and 9. While these requests were triggered by a surge in demand due to heat waves, the peak load this summer of 43.94 GW is similar to 44.30 GW in the summer of 2019 and is not particularly high historically (the largest output in the last decade was 50.12 GW, in the summer of 2017).

The supply crunch had been predicted by the North American Electric Reliability Corporation (NERC) in its summer reliability assessment report, which warned that the peak load was expected to increase in many regions in the West, and would cause a supply shortage throughout the region if a once-in-a-decade heat wave were to occur. The rotating outages last summer were caused by a wide-area heat wave that caused restrictions on imports from other regions. This year, large-scale heat waves hit from as early as June, triggering a decrease in imports and tightening the supply-demand balance for an extended period from June to September.

Because concerns about tight supply and demand emerged early this summer, the state government and the California ISO discussed the response together, enhancing the demand response and trying to secure supplies from outside the area. Nevertheless, imports dropped significantly on the day on which energy curtailment requests had to be issued. Most of the supplies needed to make up for the decrease in imports were gas-fired thermal power, namely, fossil-fuel generation that has come to be despised in the state. With the net load curve (demand minus wind and solar power) toward the evening steepening each year, the lack of supplies to keep up with this change likely led to the issuing of requests.

Meanwhile, battery capacity has grown to around 1,500 MW in the California ISO's service area. For example, batteries have supplied around 720–1,420 MW per day, in August, serving as a supply source to support peak demand. Since August 17, the ISO has been releasing the demand trend in five-minute increments and resource adequacy for the next seven days (with and without wind and solar PV for both forecasts), allowing battery owners to charge and discharge accurately using the ISO's information without having to forecast the supply-demand balance by themselves. An additional 1,500 MW of battery capacity is expected to be installed this year; the importance of batteries as a flexible supply source is likely to increase.

Since early September, the day-ahead spot electricity price in Europe has soared due to tighter supply and demand in the UK and skyrocketing natural gas prices. But it is also true that the supply situation has become tighter in general due to the expansion of variable renewable energies in climate-focused countries and regions and the decrease in extra thermal power capacity. Pursuing the dual goals of decarbonization and stable supply requires a difficult balancing act.

2. EU: Soaring Electricity and Gas Prices

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Electricity and gas prices are skyrocketing in Europe. According to media reports, on September 20, the wholesale electricity prices (day-ahead) in the UK and Germany were $222.68/MWh and $175.70/MWh (or approximately 24 yen/kWh and 19 yen/kWh, at 110 yen to the dollar) and the wholesale natural gas prices (day-ahead) were $25.89/Mbtu and $25.28/Mbtu. The electricity price for the UK has come down from $418.12/MWh on September 13 but remains far higher than the average price of $48/MWh in 2020. The same is true for natural gas, whose average price last year was $3.2/Mbtu for the natural gas hubs in the UK and Germany.

There are two main factors behind the rise. The first is the global rise in natural gas prices. On the demand side, economies are gradually recovering and natural gas demand is increasing, though the impact of the pandemic persists. Meanwhile, on the supply side, various events occurred simultaneously and caused the current situation, including the slower-than-usual filling of gas in underground storages in Europe due to the bitter cold last winter, the decrease in natural gas supplies from the main supplier, Russia, via Ukraine, the drop in supply from the region's largest gas producer, Norway, due to facility outages, and the LNG supply crunch in Asia. Higher natural gas prices inevitably push up electricity tariffs in the EU (including the UK), where gas-fired thermal power accounted for 22% of electricity supply in 2020.

The second is the tight electricity supply in Europe. Europe is expanding the use of renewable energy while closing coal-fired thermal plants in an effort to decarbonize. However, calm weather conditions occurred in the area spanning from the North Sea to the Baltic Sea, causing a drop in output from the many wind power plants in this region. Wind power accounts for 15% (in 2020) of electricity supply in the EU (including the UK), and so has a significant impact. The effects are playing out, for example, in the form of suspension and reduction of operations by ammonia and fertilizer plants that use natural gas as an ingredient. In Spain, the government is stepping in to distribute the extra revenues from soaring electricity tariffs gained by power companies to consumers.

What lessons can Japan draw from this? It is that the growth in variable renewable energies (VRE) must be accompanied by maintaining backup energy sources and progress in energy storage technologies; also, the market should be designed carefully. If VRE grows faster than backup resources or storage technologies, it will cause wholesale electricity prices to fluctuate wildly, not only hurting the economy in some cases but also disrupting stable energy supplies in the worst case. The situation for coal-fired thermal power is becoming increasingly severe, but if Europe had enough coal power capacity left, it could have mitigated the impact of the energy price surge on the economy and the supply stability concerns. Although expansion of VRE is essential for achieving carbon neutrality, it is crucial also to consider securing stable energy supplies.

3. China: Mid-/Long-term Plan for Pumped-Storage Hydropower Announced: 3.8-fold Growth in 10 Years

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On September 17, the National Energy Administration of China released its medium- to long-term plan for pumped-storage hydroelectric power for 2021 through 2035. A draft was offered for public comment from August 6 through 16. The plan, which was finalized after a comment period of just 10 days, describes pumped-storage hydropower as the most mature, cost-effective green technology that is best suited for large-scale development to ensure grid stability, and stated that its development must be accelerated urgently for establishing the new electric power system, in which renewables are the main power sources, and achieving net-zero emissions by 2060.

The draft for public comment set a new pumped-storage hydropower construction target of 180 GW for 2021–2025, 80 GW for 2026–2030, and 40 GW for 2031–2035, and an installed capacity target of 62 GW in 2025, 200 GW in 2030, and 300 GW in 2035. On the other hand, the plan itself does not include any specific new construction targets. The change was probably made to avoid the risk of missing any target and because new construction is not a target in itself but is a means to achieve the capacity targets. The plan sets a capacity target of 62 GW and over in 2025 and 120 GW in 2030. The 2030 target was 80 GW lower than that in the draft for public comment, but is ambitious nevertheless as it is a 3.8-fold increase from the capacity in 2020 (31.49 GW). The target for 2035 was worded as "expand to the level as necessary for making renewables the main power source," without mentioning any numbers. In addition, another target of fostering an internationally-competitive pumped-storage hydropower industry and several large development companies was set, with a view to expanding internationally in the future.

As of August 2021, pumped-storage hydropower has a total capacity of 87.62 GW with 32.49 GW already installed and 55.13 GW under construction, so the target for 2025 is likely to be reached. However, the target for 2030 onwards will not be so easy. A key will be how many new plants can be built, and where. A siting survey was conducted nationwide in December 2020. 1,500 locations amounting to 1,600 GW were selected based on geographical, geological, and hydrological conditions, the land area that will be submerged by dams, the difficulty of purchasing land and relocating residents, ecological impacts, and other factors, and 285 sites with a total capacity of 372 GW were designated as focus development sites and their data were included in the draft for public comment. Meanwhile, in the plan, the number of focus development sites was increased to 340 with a capacity of 421 GW, but no site information was released whatsoever. It was good to select more focus development sites anticipating difficulty in purchasing land, but not disclosing site information might actually make it harder to purchase land and decide the plant locations.

Securing economic efficiency and investors is also crucial. The National Development and Reform Commission issued an opinion on further improving the price mechanism for pumped-storage hydropower on May 7 and a notice on further improving the time-of-use electricity tariff mechanism on July 29 (see the September edition of this Newsletter). The former stipulated that the operation cost incurred for pumping and generation will be passed onto electricity tariffs, and other costs and reasonable profits will be charged through capacity rates. The latter stipulated a rise in the peak-to-valley price ratio, which would benefit pumped-storage hydropower by lowering the pumping cost and increasing the sales at peak times. The plan welcomed the participation of social capital in the development of pumped-storage hydropower. Thus, China has begun serious efforts to expand pumped-storage hydropower. The efforts will continue to be monitored.

4. ME: Regional Diplomacy in Full Swing with U.S. Withdrawal

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With the sudden change in the situation in Afghanistan brought by the U.S. withdrawal, diplomatic activity is accelerating among Middle Eastern countries. On August 28, the Baghdad Conference for Cooperation and Partnership was convened in Iraq attended by the representatives of Middle Eastern countries (and France), bringing together countries that have recently been adversaries, such as Saudi Arabia and Iran, and the UAE and Qatar. After severing ties in January 2016, Saudi Arabia and Iran chose Iraq as the country for resuming dialog in April this year, drawing much attention. With the Conference, Iraq once again demonstrated to the world that it is capable of bringing together various countries in the region to the table to solve conflicts between them.

The momentum among Middle Eastern countries toward holding dialogs continued at the 76th UN General Assembly held on September 21. Along with the General Assembly, a follow-up meeting for the Baghdad Conference was also held, reportedly joined by senior government officials of Turkey, Qatar, the UAE, and Egypt, in addition to the foreign ministers of Saudi Arabia, Iran, Kuwait, Jordan, and France. The meeting was moderated by Iraqi Foreign Minister Fuad Hussein and the parties have reportedly agreed to hold the second meeting in Jordan.

There is no doubt that the weakening US involvement in the Middle East, notably Afghanistan, is accelerating the momentum toward intra-regional dialog; how to ensure regional stability as the US withdraws is a common agenda for all countries. For the UAE, which is due to hold the Dubai expo this October, or Qatar, the host of the World Cup soccer games in November next year, rising tension leading to regional turmoil needs to be avoided.

In Iran, President Raisi was inaugurated on August 3, and following the approval of his cabinet by the parliament, the new administration was fully launched on August 25. Unlike its reputation as a conservative hardliner, the Raisi administration places better relations with its neighbors as the country's top priority. Accordingly, Iran's official participation in the Russia- and China-led Shanghai Cooperation Organization (SCO) was announced on September 17. The SCO member states are expected to strengthen cooperation with each other, aiming to achieve stability in Iran's neighbor to the east, Afghanistan.

Regarding the negotiations to rebuild the Iran nuclear deal which was suspended in June, the Biden administration continues to make positive comments, and even Israel and Saudi Arabia, which did not support the 2015 nuclear deal, admit its benefits today. On September 14, Israeli Defense Minister Benjamin Gantz expressed support for rebuilding the nuclear deal, followed on September 22 by a comment to the same effect by King Salman of Saudi Arabia. Iran has also announced that the negotiations are to restart in October. Developments must be monitored.

5. Russia: A Gas Power's Role Revisited with the Rising International Criticism of Putin's Authoritarianism

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On September 10, Gazprom announced that the construction of the Nord Stream-2 gas pipeline with the annual delivery design capacity of 55 bcm, which crosses the Baltic Sea to the European market, is now complete. The company stated that 5.6 bcm of gas could be supplied by the end of 2021. Given the need to obtain certification from German regulators and the final approval from the European Commission, however, the Nord Stream-2's gas supply is likely to begin in 2022 at the earliest. On the 15th of the same month, Presidential Press Secretary Dmitry Peskov commented that the rapid startup of Nord Stream 2 could help decrease gas prices in Europe.

Amid soaring natural gas prices in Europe, on September 21, the IEA issued a statement calling on Gazprom to boost exports to Europe to increase its gas storage levels ahead of the winter high demand season and to alleviate the tight supply-demand balances, which would in turn prove Russia's credentials as a "reliable supplier." Gazprom supplied 298 bcm of natural gas to Europe between January and July 2021 (up 18% year-on-year), fulfilling its supply obligations under a long-term contract (as per an August announcement by Gazprom; the breakdown by destination country is undisclosed). And yet, just as hopes rise for Gazprom to provide more gas to the European spot market, opinions are divided within Russia over the pros and cons of doing so. President Putin claims that Russia should re-establish its regional presence as a gas producer by not granting Europe's request so readily. By contrast many energy experts argue that unnecessary hostility using gas as a "diplomatic weapon" would not benefit Russia in the long term.

As the economic slump and confrontation with the West persist, causing public dissatisfaction with the Putin government, the lower house election was held on September 17-19. However, the election was severely criticized at home and abroad as "the most undemocratic" election in post-Soviet Russia. In June 2021, the Putin administration has illegalized the support group of the government opposition leader, Alexei Navalny, who has been imprisoned since January of the same year, as an "extremist group" and banned his supporters from running in the election, while cracking down on government critics in every stratum of society as "foreign agents." The ruling political party, United Russia, won 324 seats in the election—more than two-thirds of all 450 seats, satisfying the requirement for constitutional amendment though 19 seats less than the previous election. However, with reports of "forced" voting at workplaces and ballot stuffing, criticisms are mounting across the country. While many in Russia anticipate that President Putin will strengthen his authoritarian rule heading toward the presidential election in 2024, it has been pointed out that the rising criticism and push-back against such rule could catapult Russia back into political instability.

On September 21, the European Court of Human Rights said it has proof that Russian authorities were involved in the assassination of a former Russian spy, Alexander Litvinenko in 2006. As Russia's role in the European gas market receives renewed attention, we must watch how political distrust between Europe and Russia affects gas transactions and whether Russia can make a breakthrough in improving relations with Europe and the United States.

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