IEEJ e-NEWSLETTER

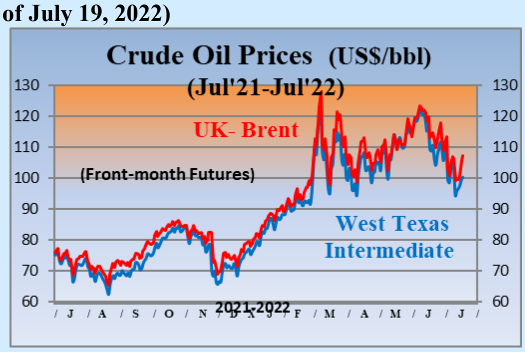
No. 235

(Based on Japanese No. 226)

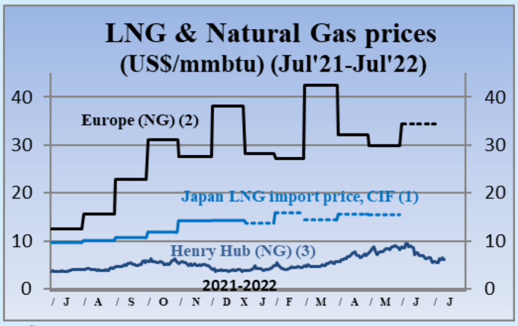
Published: July 21, 2022

The Institute of Energy Economics, Japan

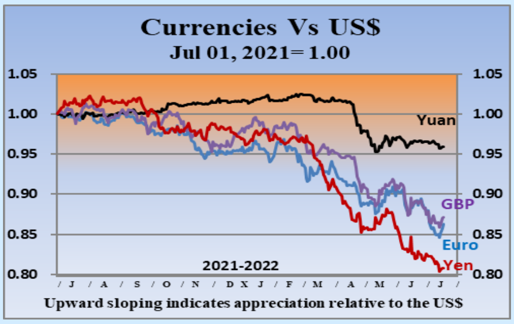
(As of July 19, 2022)



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



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)



Source: x-rates.com

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

Contents

Summary

1. Developments in Nuclear Power

The US is working to reduce its dependence on Russia for uranium fuel. In the UK, a document on accelerating the implementation of a new financing model based on full cost distribution (FCD) to be applied to nuclear new builds was published.

2. Recent Developments in the Oil and LNG Markets

The upward momentum of oil prices is weakening, but Russia's output is certain to fall once the EU executes the agreed embargo. In Europe, concerns about the gas supply stability in wintertime are rising.

3. Update on Climate Change, Energy Conservation, and Renewable Energies

The European Parliament adopted the EU bills on EU-ETS, CBAM, and so on among the bills in Fit for 55. In Japan, the revised Act on the Improvement of Energy Consumption Performance of Buildings passed the Upper House and was legislated. The Act additionally requires new houses and medium and small buildings to comply with energy efficiency standards.

4. Europe and US: "Network-based" Economic Sanctions and the Oil Market

Access to the international financial network has played a bigger role as a tool for economic sanctions, as seen in the EU's new sanction on Russia that bans insurance. Wary of further rises in oil prices, the US will have to gain cooperation from oil-producing countries.

5. China: New Renewable Energy Development Five-Year Plan Aims to Double Variable Renewable Electricity

The Chinese government published a Five-Year Plan that would increase the share of renewable energy in primary energy consumption to 18% in 2025 and double the output of wind, solar PV and heat power generation from 2020 levels. The progress of these efforts deserves attention.

6. ME: Efforts to Strengthen Anti-Iran Network Continue

Ahead of US President Biden's visit to their countries in mid-July, Israel and Saudi Arabia are strengthening ties with countries in the region to strengthen containment against Iran.

7. Russia: Squeezing Energy Supplies to Hostile Countries

Gazprom slashed gas supplies via Nord Stream, reducing supplies to Germany, Italy, and Austria. In addition to the delay in refilling underground gas stores, a further decrease due to periodic inspections is approaching. Tensions with the three Baltic nations are also mounting.

1. Developments in Nuclear Power

Emiri Yokota, Senior Researcher
Nuclear Energy Group, Strategy Research Unit

According to media reports, on June 8 the US government proposed a plan to directly purchase $4.3 billion worth of enriched uranium from US producers to curb its dependency on Russian uranium fuel. The US currently imports up to 20% of its national uranium requirement from Russia based on a bilateral agreement; the share of imports from Russia in 2020 was 16%. Russia is a major producer of enriched uranium and owns more than 40% of the world's enrichment capacity. Suspension of Russian uranium is already being discussed in Congress and reducing the dependency on Russian uranium is an urgent issue for the US. The government's aim is to enhance the country's energy security by implementing this purchase plan with approval from Congress and thereby reducing the dependency on Russia, according to media.

On June 14, the UK government released a document describing the progress toward implementing the Regulated Asset Base (RAB) model, a new financing model for developing nuclear and other energies. This model aims to attract private investment into nuclear new builds and other large-scale infrastructure projects by providing necessary financial support based on a fully distributed cost (FCD)-like system, to make sure that projects reach completion. The Sizewell C Project may become the first nuclear new build project to be run based on this model.

In Japan, on May 31, the Sapporo District Court ruled against resuming operation of Hokkaido Electric Power's Tomari Units 1 through 3 citing a lack of adequate protection against tsunami. This was the third District Court decision to suspend operation of a nuclear plant after the Fukushima Daiichi accident in March 2011, and the first to be grounded on inadequate protection against tsunami. Hokkaido Electric said on the same day that it will promptly file an appeal.

Meanwhile, there was progress toward restarting nuclear power: on June 2, the Governor of Shimane Prefecture agreed to the restart of Chugoku Electric's Shimane Unit 2, and on June 15, gave his consent to the restart to the national government.

New moves among domestic manufacturers were also observed. On June 8, Toshiba announced that it had "reached an agreement with US constructor Bechtel Power Corporation to collaborate on the delivery of equipment for Poland's first nuclear power plant, jointly with its affiliate Toshiba America Energy Systems Corporation (TAES)." Heavily dependent on coal power, Poland is proceeding with a nuclear new build project amid a rise in environmental awareness. Bechtel and US Westinghouse are working on building an AP1000, and in collaboration with Toshiba, the three will supply steam turbines and generators for the AP1000 plant. The three will also discuss the details for supplying equipment going forward.

2. Recent Developments in the Oil and LNG Markets

Tetsuo Morikawa, PhD
Senior Economist, Manager
Oil Group

The upward momentum of oil prices is weakening. After rising to around $120/bbl in early June, oil prices fell back to $110/bbl on June 22 for the first time in almost a month. This was driven by the risk of recession and the less-than-expected decline in Russia's output. The Federal Reserve Board began to raise interest rates in March in an attempt to contain inflation which has reached its highest level for 40 years, and decided on a huge raise of 0.75% on June 15. Monetary tightening is causing the US dollar to soar, which is curbing the rise in oil prices by making oil prices higher in non-dollar currencies. Furthermore, the Fed's tapering of asset purchases carried out before the rate hikes has diminished the inflow of funds into money markets, making stock prices volatile. Moreover, there is speculation that the US economy is headed for recession. The Fed is likely to put more weight on controlling inflation than maintaining stock prices, and is therefore likely to keep raising interest rates this year. Fear of recession is likely to put downward pressure on oil prices in the second half of this year.

Meanwhile, defying forecasts of a drop of 3 mb/d, Russian oil production has decreased only slightly and remains at 10.55 mb/d as of May (down 0.85 mb/d from February). This is largely because the EU's ban on Russian oil has yet to take full effect, and because China and India are increasing imports. However, when the EU executes the already agreed embargo, its imports of Russian oil will drop from 3.9 mb/d in February to just 0.3–0.4 mb/d by the end of the year. Considering the need to secure tanker shipping capacity and the ban on insuring tankers carrying Russian oil, it will be difficult for Russia to divert all of its EU exports to China, India and other markets, and thus Russia's exports and production will surely decline. Moreover, the West is likely to toughen its sanctions if the war continues, and should the West decide to initiate secondary sanctions (which would effectively force other countries including China and India to stop importing Russian oil), serious supply shortages would occur again, pushing up oil prices significantly.

Natural gas prices are becoming even more volatile, especially in Europe. From the end of May to mid-June, Russia slashed its gas supplies to Western Europe. Further, on June 8, Freeport LNG (liquefaction capacity of approx. 15 million tonnes per year) of the US, a major alternative supply country, shut down due to a fire. These factors combined to push up the Dutch TTF, the benchmark price for continental Europe, to as high as $38/Mbtu (approx. $220/bbl in oil equivalent). LNG spot prices for Northeast Asia have also gone up in tandem with the European price to as high as $37/Mbtu. Meanwhile, the spot price for US Henry Hub natural gas remained mostly at $7–9/Mbtu in June though upward pressure has mounted since the invasion of Ukraine. The average import price for Japan for June is estimated at around $16/Mbtu. The EU is planning to fill its gas storages to 80% by November, but it may be difficult to achieve this target and concerns about wintertime supply stability are growing. Europe's gas shortages lead directly to higher spot LNG prices for Northeast Asia, and threaten the gas and power supply stability particularly for Asian importers who depend on spot purchases.

3. Update on Climate Change, Energy Conservation, and Renewable Energies

Naoko DOI, PhD
Senior Economist, Manager
Energy Efficiency Group
Climate Change and Energy Efficiency Unit

On June 22, the European Parliament adopted three key EU bills from Fit for 55, the policy package formulated to reduce GHGs by 55% by 2030 (from 1990 levels). The European Parliament, the European Commission, and the EU Council will now hold a "trialogue" toward legislation.

The first are the proposed revisions to the EU Emissions Trading System (EU-ETS). Specifically, the Council agreed to: 1) raise the 2030 GHG reduction target for the operators in scope from 61% to 63% from 2005 levels; 2) newly include maritime shipping emissions in stages from 2024 through 2027; and 3) create a separate EU-ETS for suppliers in the buildings and road transport sectors in 2029.

The second is the Carbon Border Adjustment Mechanism (CBAM) bill. The CBAM imposes taxes on products imported from non-EU countries that have less stringent climate measures. Meanwhile, the EU-ETS is allocating free emission allowances to prevent industry from relocating to regions with lighter environmental regulations. These free allowances will now end for those products covered by the CBAM progressively by 2032 in order to eliminate "dual protection." The Council adopted the expanded version of the proposal, which covers hydrogen, organic chemicals, and polymers on top of the European Commission's initial proposal of iron and steel, cement, electricity, aluminum, and fertilizers.

The third is the proposal to establish a Social Climate Fund with the proceeds from EU-ETS. To mitigate the impact of the looming rise in road transport and heating fuel prices on the low-income bracket, the Fund will be used to reduce and waive energy taxes in the short term, and for energy efficiency renovation of houses and other buildings, and extending financial support, subsidies, and low-interest loans for introducing public transport in the long term.

In Japan, on June 7, the Ministry of Energy, Trade and Industry decided on energy conservation measures for this summer in view of the current power supply situation. The Ministry will call on all parties to improve energy efficiency and to save electricity. Measures include improving the operation of existing equipment and introducing high-efficiency equipment in various sectors, tougher electricity saving measures in the government, energy efficiency renovations of municipal buildings, and implementing demand response measures with monetary remuneration. On June 13, the revised Act on the Improvement of Energy Consumption Performance of Buildings was adopted at a plenary session of the Upper House and was legislated. The revised Act additionally requires new houses and medium and small buildings to comply with energy efficiency standards starting from FY2025.

In the area of renewable energy, the European Commission proposed the criteria for green hydrogen on May 23. For hydrogen to be counted as "green hydrogen," it must be produced using a newly established renewable power source, water electrolysis must take place in the hours deemed beneficial for the grid integration of renewable energy, and large amounts of renewable energy must already be in use in the region where the hydrogen supply is to be produced. Behind these standards is the idea of "additionality" of hydrogen, which specifies that renewable energy should contribute primarily to decarbonizing electricity, and may be used to produce hydrogen only when it is in excess. The hydrogen industry is displeased and thinks that the standards are overly strict, but the public comment period will end on June 17 and the standards are due to be finalized thereafter.

4. Europe and US: "Network-based" Economic Sanctions and the Oil Market

Yoshikazu Kobayashi, Senior Economist
Manager, CCUS Group
Fossil Energies & International Cooperation Unit

Europe continues to toughen its economic sanctions against Russia over Ukraine. In the sixth round of sanctions against Russia released on June 3, the EU at last included an oil embargo. When the embargo is launched, EU member states except a few will stop all their imports of Russian oil and petroleum products via marine transport by December 5, 2022 and February 5, 2023, respectively. The initial plan was to include all oil and petroleum products, but imports via pipelines were excluded from the scope due to opposition from Hungary and others that cannot easily abandon Russian energy.

However, many are skeptical about the impact of the oil embargo on the Russian economy. Unless all countries stop importing Russian oil and not just Europe, Russia will continue to obtain revenues from oil exports. China and India are likely to switch from the Middle East and Africa to Russia for oil in exchange for a price discount. While 80% of Russia's natural gas exports go through pipelines and therefore to limited destinations, 70% of its oil exports are delivered via maritime transport and so it is relatively easy to change destinations even if exports to the EU stop. The recent oil price surge is also helping Russia to make up for the drop in its oil exports.

Among the EU sanctions imposed this time, the one that is expected to hit harder than the oil embargo itself is the ban on providing insurance to third countries. This sanction bans, from December 5, 2022, providing insurance to a third country for the transport of Russia-produced oil; when effective, no third country will have access to insurance provided by EU member state companies for the transport of Russian oil supplies. As a large number of international insurers and reinsurers are based in the EU, the ban on insurance may have a greater impact than outright oil embargoes. When a similar sanction was imposed on the transport of oil from Iran in 2012, governments of importers including Japan had to take unprecedented action and issue government guarantees. In recent years, access to the international financial network has played a bigger role as a tool for economic sanctions, as seen in the US' limitation on the use of the dollar and removal from the SWIFT settlement messaging network. It is noteworthy that the EU has also started financial sanctions via its insurance business network, which is its strength.

Amid these moves, the US government faces a tough dilemma as it wants to tighten sanctions against Russia but cannot afford to let oil prices rise further ahead of the midterm elections. One of the keys for solving this problem is to get Middle Eastern countries to increase output, particularly Saudi Arabia and the UAE whose oil has similar properties to Russian oil and would therefore have an immediate effect. President Biden has so far been cautious about discussing production increases directly with Middle Eastern countries, but he will have to work with these oil producers if prices head higher. Attention must be paid to the President's scheduled visit to Saudi Arabia in July.

5. China: New Renewable Energy Development Five-Year Plan Aims to Double Variable Renewable Electricity

Li ZHIDONG, Visiting Researcher
Professor at Graduate School
Nagaoka University of Technology

On June 1, the 14th Five-Year Plan on Renewable Energy Development (public version) prepared by nine government agencies including the National Development and Reform Commission (NDRC) and the National Energy Administration (NEA) was released. Analyzed together with reports of government media outlets such as Xinghua News Agency and China Energy News, the Modern Energy System Planning, which is the overall plan, and the Mid-/Long-term Plan for Pumped-Storage Hydropower, which is a field-specific plan (see the May 2022 edition and October 2021 edition of this Newsletter), the Five-Year Plan indicates the government's focus on renewable energy and reveals the big picture. Here are the main points.

The Five-Year Plan declared that renewable energy consumption will be expanded from 680 million tce (tons of coal equivalent, 1 tce = 7×10^6 Kcal) in 2020 to 1 billion tce (including 940 million tce of renewable electricity) in 2025. While not mentioned in the public version, Xinhua and others reported on a target to increase the share of renewable energy in primary energy consumption from 13.6% in 2020 to 18%. Based on this information, primary energy consumption, which is not mentioned in the overall plan, will reach 5.56 billion tce in 2025, up 580 million tce from 2020, with renewable energy accounting for 55% of the increase. Further, assuming that the goal of expanding nuclear to 70 GW in 2025 is met and the operating time does not change, the share of nuclear in primary energy will increase from 2.3% in 2020 to 2.8% in 2025. As a result, the share of non-fossil energy will increase to 20.8% in 2025, taking a big step toward the 2030 target of 25% submitted to the United Nations. Clearly, China is strengthening its renewable energy development systematically, determined to meet the 25% target it considers an international commitment.

China has introduced a system in which it sets a target for the share of renewable electricity in electricity consumption for each region and holds the regions responsible for meeting the target. China's share of renewable electricity in consumption was 28.8% in 2020, exceeding the national target of 28.2% (estimate). The new Five-Year Plan unveiled a national target to increase the share in consumption to 33% in 2025. It also set a target to increase renewable electricity output to 3,310 TWh in 2025 from 2,220 TWh in 2020, with the increase in renewable electricity from 2020 accounting for at least 50% of the increase in electricity consumption. In summary, the total generation output will increase from 7,630 TWh in 2020 to 9,810 TWh in 2025 and the ratio of renewable electricity will increase from 29.1% to 33.8% in that period. The Plan further states that the output of variable renewable electricity (wind, solar PV and heat power) will double from 730 TWh to 1,460 TWh in the same period, with the share in total generation output increasing from 9.5% to 14.8%. The Plan does not mention the installed capacity of variable renewable electricity (535 GW in 2020), but assuming that it will double as with the generation output, the capacity is estimated to be 1,070 GW in 2025. Since the existing target is to increase the total installed generation capacity (2,202 GW in 2020) to 3,000 GW, the share of variable renewable electricity (24.3% in 2020) will increase by 11.4 points to 35.7%, and the share of renewable electricity as a whole (42.5% in 2020) by 10.5 points to 53%. In other words, China plans to have variable renewable electricity spearhead the transition of renewable electricity into a main power source. The country has also submitted to the UN a target of increasing variable renewable electricity to at least 1,200 GW in 2030. This target is likely to be overachieved if the new Five-Year Plan can be fulfilled.

The key is whether electricity supply stability can be ensured along with the expansion of variable renewable electricity. To this end, the government has mobilized all available policy resources including increasing grid balancing capacities and guaranteeing rational profits for operators, and accelerating the construction of ultra-high-voltage transmission networks. The progress of these efforts deserves attention.

6. ME: Efforts to Strengthen Anti-Iran Network Continue

Sachi SAKANASHI, Senior Research Fellow
Assistant Director, JIME Center

Ahead of US President Biden's tour of the Middle East scheduled for mid-July, Israel and Saudi Arabia are strengthening ties with countries in the region. Israel signed a Comprehensive Economic Partnership Agreement (CEPA) with the UAE, while also signing, together with Egypt, a memorandum on natural gas supply with the EU. Saudi Arabian Crown Prince Muhammad bin Salman visited Egypt, Jordan, and Turkey and discussed cooperation in a wide range of areas including food security.

The greatest concerns for President Biden during his Middle East tour are said to be energy prices and the Iran issue, but it is not clear how much support he can secure from Saudi Arabia on increasing crude oil production. Meanwhile, on the subject of Iran, Israel remains fiercely opposed to reviving the Iran nuclear deal (JCPOA), which is sure to be tabled during President Biden's visit, and considers that Middle Eastern countries should join hands and toughen the containment against Iran, while securing the support of the US.

Israel is already accelerating attacks on Iran in the country. Iran saw a series of mysterious deaths of security personnel, such as an officer of the Islamic Revolutionary Guard Corps (IRGC), a drone development engineer, an aeronautical researcher, and an employee of the Defense Ministry's aerospace unit around the time of the Board of Governors Meeting of the International Atomic Energy Agency (IAEA) that began on June 6 (the IRGC officer was shot and killed by an unknown attacker in front of his house), and Israel's involvement is suspected in all these cases. Israel has openly declared that it will block Iran's nuclear development at any cost and has been involved in the sabotage of nuclear facilities and assassination of nuclear scientists in Iran. Recently, Iran's drone development (and the people involved) has started to be included in the scope of attack.

With Israel carrying out a string of attacks causing Iran a lot of damage, it is almost impossible for Iran to "offer a compromise" to the US (which backs Israel) on the nuclear deal. In these circumstances, the IAEA Board of Governors adopted a resolution criticizing Iran; this resolution does not request that Iran's nuclear development issue be referred to the UN Security Council. However, with the Biden administration maintaining "toughest sanctions against Iran" that began during the Trump presidency, and with Iran continuing to expand its nuclear development program, the JCPOA is increasingly becoming merely a name. It had been hoped that the JCPOA's revival would allow Iranian oil to return to the market to replace sanctioned Russian oil, but the prospects are now unclear.

Both Israel and Iran, the belligerent parties of an intensifying "shadow war," have destabilizing factors in their own countries. In Israel, the coalition led by Prime Minister Bennett is suffering a series of departures and an early dissolution of the parliament is becoming inevitable; in Iran, cuts in subsidies to prop up worsening finances have caused consumer prices to soar, prompting anti-poverty protests to spread across the country. Both countries are facing a difficult balancing act to keep the government stable.

7. Russia: Squeezing Energy Supplies to Hostile Countries

Sanae KURITA, Senior Researcher
Global Energy Group 2
Strategy Research Unit

As the Russian invasion of Ukraine continues, the St. Petersburg International Economic Forum was held from June 15 through 18. The Forum was attended by representatives of the pro-Russian separatist forces in eastern Ukraine, Belarussian president Lukashenko, and members of the Taliban from Afghanistan. Western countries and companies refrained from participating. In the past, the Forum was attended by the leaders of Germany and France and Western oil majors and saw spectacular signing ceremonies for energy-related agreements. This year, the Forum's only key agenda items were the gas processing partnership with Kazakhstan and the progress of discussions on the Far Eastern route of the China-Russia gas pipeline. In February 2022, Gazprom and China's CNPC agreed on long-term gas sales (of up to 10 Bcm/year) via the Far Eastern route. Based on the talks which discussed passing through the layers beneath the River Ussuri, the parties are apparently considering extending the Sakhalin-Khabarovsk-Vladivostok (SKV) gas pipeline to China.

Russia is weaponizing energy as a means of threatening hostile countries. On June 14, Gazprom reduced gas supplies via Nord Stream by 40% from 167 Mcm/day after announcing that "only three gas compressors are in operation as the unit that Siemens is repairing in Canada has not been returned and the gas compressor unit (near the start of Nord Stream) is to undergo periodic inspection"; the reduction was then increased to 60% on June 15, resulting in supply cuts to Germany, Italy, and Austria. Gazprom claims that the reduction was the result of Canada's economic sanctions, but Western stakeholders have fiercely countered that the reduction was a deliberate act by Gazprom as the periodic inspection was scheduled for autumn of 2022. Gazprom claims that periodic inspections of European gas pipelines are approaching (Nord Stream: July 11-21, Turk Stream: July 21-28), and with the refilling of underground gas stores running behind schedule, there is growing concern about further cuts in gas supplies.

Lithuania has banned the transport through Lithuania of products sanctioned by the West (such as construction materials, metals, coal and steel) between Russia and Kaliningrad, fueling tensions between Russia and the West (Kaliningrad is a semi-enclave of Russia on the Baltic Sea, sandwiched between Lithuania and Poland). On the 20th, the Russian government called this ban an illegal and openly hostile act and warned that it will take measures to protect its national interest if cargo transport does not resume promptly. Lithuanian Foreign Minister Landsbergis talked with the European Commission and refuted the claims, stating that they were acting in line with the EU's additional sanctions against Russia since March. However, on the 21st, President Putin threatened to use military force, revealing his intention to build up and strengthen military forces and deploy its new inter-continental ballistic missile (ICBM) Sarmat within this year to respond to potential military threats and risks. On the 22nd, Lithuanian President Nauseda indicated that the country will prepare for Russia's retaliation including a shutdown of power supplies. With the EU's support, the three Baltic states finished connecting to Poland's power grid system in 2021, and are planning to cut themselves off from the grid systems of Russia and Belarus and switch to Europe's grid system in 2025. Meanwhile, while denying the possibility of a military clash, Lithuania expressed its intention to bring up the bilateral stand-off at the NATO Summit. Tensions between the three Baltic states and Russia are growing.

Past IEEJ Events

Energy Economy Indicators of Japan

IEEJ Homepage Top

Back Numbers of *IEEJ e-Newsletter*

Back Numbers of *IEEJ Newsletter* (Original Japanese Version - Members Only)

***IEEJ e-Newsletter* Editor: Yukari Yamashita, Managing Director**
***IEEJ j-Newsletter* Editor: Ken Koyama, Senior Managing Director**
The Institute of Energy Economics, Japan (IEEJ)
Inui Bldg. Kachidoki, 13-1 Kachidoki 1-chome, Chuo-ku, Tokyo 104-0054, Japan
Tel: +81-3-5547-0211 Fax: +81-3-5547-0223