



IEEJ e-NEWSLETTER

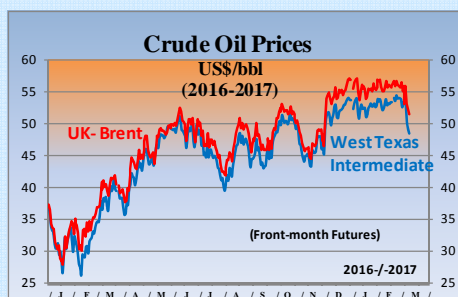
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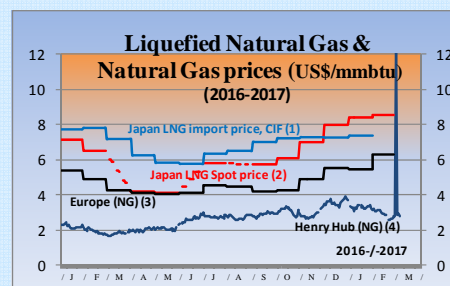
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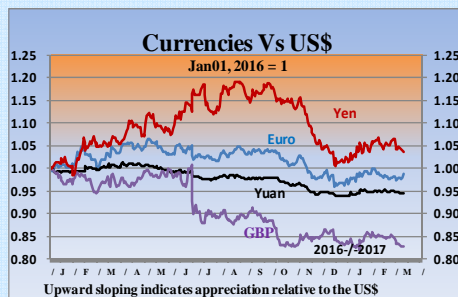


Source: DOE-EIA, Financial Times, NASDAQ

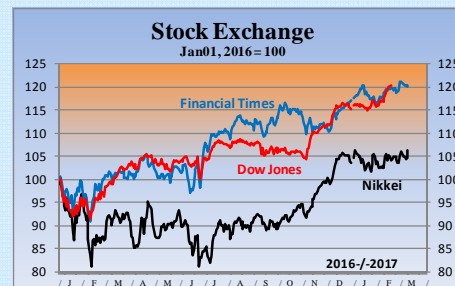


Sources:

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



Source: x-rates.com



Source: Financial Times

Contents

【Energy Market and Policy Trends】

1. Recent Developments in the Oil Market
2. Recent Developments in the Gas and LNG Markets
3. Update on Climate Actions
4. India Accelerates the Introduction of Renewable Energies
5. Developments in Nuclear Power



Summary

【Energy Market and Policy Trends】

1. Recent Developments in the Oil Market

Despite OPEC's 90% compliance with the agreement to cut production and robust demand, inventory remains at a record high level. Oil prices will be subject to further downward pressure if the US increases production.

2. Recent Developments in the Gas and LNG Markets

The spot price has fallen in the international LNG market, and the supply-demand balance is easing once again. In Japan, full retail liberalization, though with limited new entrants from April, is expected to boost price competition.

3. Update on Climate Actions

The Energy Efficiency and Conservation Subcommittee released an interim report that advocates energy conservation beyond corporate boundaries, and through energy management companies, mass retailers of home appliances and energy retailers etc.

4. India Accelerates the Introduction of Renewable Energies

The rapid decline in the costs of renewable energies and battery cells in India is accelerating efforts to maintain grid stability while simultaneously introducing renewables in an economically rational manner. Developments in the country must continue to be monitored.

5. Developments in Nuclear Power

The Japan Atomic Energy Commission is discussing the "initiative for nuclear use" toward its finalization. Based on this initiative, concrete initiatives and actions for enhancing human resources and technological capabilities are expected.



1. Recent Developments in the Oil Market

Tetsuo Morikawa, Senior Economist, Manager
Oil Group
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It became clear that for January, OPEC countries observed production cut agreement fairly well. The agreement requires OPEC members to cut production by approx. 1.2 million barrels/day (mb/d) from September-October levels and the 10 non-OPEC countries to cut production by approx. 0.56 mb/d from October-November levels, for the six months starting January 2017. According to the IEA, OPEC members produced 32.06 mb/d in January, achieving the best compliance rate in its history at 90%. This was largely thanks to Saudi Arabia, which cut production by 0.58 mb/d, exceeding its commitment. The compliance rate of non-OPEC members for January has not been disclosed but is reported to be around 40%, considering that Russia has only cut production by 0.12 mb/d despite agreeing to 0.3 mb/d.

Meanwhile, production levels remain unchanged in the US. According to the IEA, it produced 12.48 mb/d in January, a fall of 30,000 b/d from December. US production is now bottoming out, in view of the increasing number of operating rigs, improvement in shale oil productivity, and active price hedging by producers. However, production may not start to recover fully until the second quarter as it generally takes 6 to 9 months to drill and finish an oil well, and some producers may prioritize repaying the debts accumulated when oil prices crashed.

Oil demand remains strong. According to the IEA, the demand for the fourth quarter of 2016 was 96.6 mb/d, up 1.6 mb/d (1.7%) year-on-year. Asian countries such as China and India continue to drive demand. Unless there is a sudden slowdown in the macro economy or turbulence in financial markets, demand will remain solid in 2017.

If compliance with the agreement to cut production and the growth in demand continue, the rebalancing of supply and demand will accelerate. However, there is no guarantee that compliance will remain as high for the rest of the reduction period, and inventories are still at record levels. Under such circumstances, if production does increase in the US, the rebalancing may be further delayed. The latest circumstances suggest more downward pressure rather than upward for the time being, although IEEJ still hold price forecast of \$55/barrel in the first half and \$60/barrel in the second half of 2017 for Brent.

King Salman of Saudi Arabia is scheduled to visit Japan in March. Amid issues that could destabilize the Middle East, such as the Trump administration's moves to renegotiate the Iran nuclear deal and relocate the US embassy in Israel to Jerusalem, Japan must deepen ties with its largest oil supplier Saudi Arabia to ensure a stable supply, by assisting the country's efforts to reform its oil-dependent economic structure.



2. Recent Developments in the Gas and LNG Markets

Yoshikazu Kobayashi, Senior Economist, Manager
Gas Group Fossil Fuels & Electric Power Industry Unit

In the international LNG market, the spot price fell after rising since last year. With new projects worth more than 40 million tonnes due to start operation this year, supply will exceed the new demand, even if some projects do not open as scheduled as has happened in recent years, and the saturation of supply and demand is likely to intensify.

In Asian markets, as LNG demand remains sluggish in traditional markets such as Japan and South Korea, emerging markets such as China, India, and Pakistan are becoming more important than ever. In 2016, the demand for LNG increased 33% to 26.15 million tonnes in China and 25% to 18.2 million tonnes in India compared with 2015. However, forecasting demand requires care, as the increased demand in China in 2016 was due largely to the reduction in the government's regulated price and the start of new long-term contracts at the end of 2015, and demand may not increase as much in 2017 amid the slowing domestic economy. India's demand for LNG is likely to depend greatly on the international spot price as domestic electricity prices and the price of fertilizers that use gas as raw material remain government regulated.

Regarding the two-day Japan-US summit held from February 10, the developing ties between President Trump and Prime Minister Abe received attention. The vice president and the deputy prime minister of the two countries are creating a new framework for dialogue on economic issues, which reportedly may include the expansion of American LNG imports. However, American LNG imports, which are free of restrictions on destination, may not increase as initially expected in the Japanese market where demand is becoming increasingly uncertain. Instead, for LNG transactions it is important for Japan and the US to cooperate to abolish the destination clause in global transactions.

In Japan, full liberalization of the gas market will finally start from April. As of the time of writing, interest in entering the residential market remains low with only 13 companies, mainly electric utilities, having registered as a gas retailer. However, existing gas companies have introduced new tariff plans in succession to protect their market share, and in some regions, competition may intensify between electricity and gas companies. While user-end gas prices will continue to depend heavily on raw material prices, the newly introduced market competition will undoubtedly put pressure on retailers to reduce costs.



3. Update on Climate Actions

Takahiko Tagami, Senior Coordinator, Manager
Climate Change Policy Research Group
Global Environment and Sustainable Development Unit

At the end of November 2016, the EU proposed the revised Energy Efficiency Directive to achieve the 2030 climate and energy framework. In China, the comprehensive action plan for saving energy and reducing pollution under the 13th Five-Year Plan was published in early January 2017.

In Japan, the Energy Efficiency and Conservation Subcommittee held five deliberations between June through December 2016, and on January 31, 2017 released the “Interim Report of the Energy Efficiency and Conservation Subcommittee – Exploring the potential of energy conservation”. The report advocates “the promotion of energy conservation beyond corporate boundaries” and “extensive and in-depth exploitation of energy conservation leveraged by third parties” in order to induce companies’ voluntary investment in energy conservation through government policies, and to use energy conservation as a catalyst to generate a virtuous cycle between energy saving and economy, and to pursue these two goals in a well-balanced manner.

Behind this initiative is the slowing pace of improvements in energy efficiency (energy intensity) in the manufacturing industry since the 1990s and the increase in energy conservation efforts across corporate boundaries that have led to multi-company collaborations in each sector, supply chain and corporate group. Further, the lack of direct regulation on non-industrial sectors, SMEs and households under the Energy Conservation Act has highlighted the need to involve third-party businesses such as energy management companies, mass retailers of home appliances, and energy retailers that can interact directly with these entities. Going forward, the government will take the necessary legal and budgetary measures.

The initiative is in line with the discussions at the Long-Term Global Warming Countermeasures Platform, an expert council of METI, and those on Keidanren’s Commitment to a Low-Carbon Society at the Industrial Structure Council and the Central Environment Council. The draft interim report of the Platform indicates, as one direction of future climate policy, “carbon neutrality in a product life cycle (contributing to emissions reduction throughout a value chain)”, while the quantification of contribution of low-carbon products and services to emissions reduction in other sectors is also being considered in Keidanren’s Commitment to a Low-Carbon Society. However, currently, contributions are being quantified only in a few sectors. In the future, the means for visualizing such contributions must be considered based on the experience gained and challenges identified through such quantifications. The Platform is also considering promoting climate measures (such as energy saving) in SMEs.

The Environment Ministry presented a draft long-term low-carbon vision to the Long-Term Low Carbon Vision Subcommittee on February 3 and to the Global Environment Committee of the Central Environment Council on February 10, and stated that “carbon pricing (carbon tax, etc.) is necessary for an emissions reduction of 80% by 2050 and decarbonization” and that “climate actions are a promising market, and carbon pricing can strengthen the market competitiveness of low-carbon technologies and accelerate innovation”. This long-term low carbon vision was finalized at the Long-Term Low Carbon Vision Subcommittee on March 1. METI’s Long-Term Global Warming Countermeasures Platform is also due to finalize its version in March, with the two visions to be coordinated between the two ministries in April or later.



4. India Accelerates the Introduction of Renewable Energies

Yoshiaki Shibata, Senior Economist, Manager
New and Renewable Energy Group
New and Renewable Energy & International Cooperation Unit

As of the end of 2016, the cumulative operating capacity for renewable energy (electricity) of India surpassed 50 GW. However, introduction must be expedited to achieve the target of 175 GW by 2022, and moves for achieving the target are accelerating.

First, regarding solar PV power, the bid for one of the world's largest solar power plants (750 MW) to be constructed in Rewa District in Madhya Pradesh state in central India in January was won with a record low price of 3.30 rupees/kWh (\$0.0494/kWh), far lower than the previous domestic record of 4.34 rupees/kWh (\$0.065/kWh), although the cost structure and breakdown are unknown. The cumulative solar PV capacity is still 9 GW, far below the target of 100 GW, but the fall in price will provide a great boost.

Next, regarding wind power, for which India has surpassed Spain to rank fourth following China, the US, and Germany with a cumulative capacity of 29 GW, the Spanish company Gamesa is making active efforts. It opened its third plant in the country, a turbine blade factory, in Andhra Pradesh in January following the first turbine blade plant in Gujarat in 2012 and the nacelle factory in Tamil Nadu in 2014. Local production is essential for reducing the cost of wind power, and the company seeks to boost wind power capacity in India where it is operating.

There are moves also in grid stabilization. In January, Mitsubishi Corporation and the US independent electricity producer AES Corporation announced the joint introduction of a 10 MW battery cell in an electricity distributor in the suburbs of Delhi to run a pilot project. NEDO also plans to conduct a feasibility study based on a governmental agreement between Japan and India, aiming to establish standards and institutions for expanding battery cells in India. With the recent sharp decline in battery cell prices, hopes are rising that it will become an economical means for grid stabilization. According to a report released by The Energy and Resources Institute (TERI) in February, if the prices of renewable energies and battery cells continue to decline at the current pace, the generation cost of renewable electricity, including the cost of battery cells and other grid stabilization technologies, will reach 5 rupees/kWh by 2027, matching that of new coal-fired thermal power plants and making them no longer necessary.

Further, the long-distance transmission project won by ABB (for completion in 2019) will connect the central Indian state of Madhya Pradesh with Tamil Nadu in the south with an 1,800 km-long ultra-high voltage direct current (UHVDC) line having a transmission capacity of 6 GW. This will reduce transmission losses by 30-50% compared to AC transmission, and is intended to efficiently resolve the regional imbalance of wind power.

As described above, the rapid decline in the costs of renewable energies and battery cells in India is accelerating efforts to maintain grid stability while simultaneously introducing renewables in an economically rational manner. This effort, if successful, will be a model for other developing countries which have set high targets for their INDCs. Attention must be paid to the developments in India's renewable energy-related markets.



5. Developments in Nuclear Power

Tomoko Murakami, Manager
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Among the many factors reportedly behind the massive impairment loss in Toshiba's overseas nuclear business, one of the most important and symbolic is the tough environment for the nuclear new build business in recent years. According to the company's announcement on February 14, the "goodwill impairment loss" from its disrupted nuclear new build project in the US amounts to 712.5 billion yen, and the company could face negative shareholder equity for the quarter ending March 2017 unless capital is injected.

Eleven years ago in February 2006 when Toshiba purchased US Westinghouse and positioned the overseas nuclear business as a pillar of its medium- to long-term earnings, who could have imagined the situation today? It is a general rule in the overseas infrastructure business that "a business involving a high initial investment and long construction lead-time is high risk". Nevertheless, shareholders and others did not express doubts about Toshiba's prospects at the time to "secure several dozen international orders for the AP-1000 and expand the business in 2015 by 3 to 3.5 times from 2005 levels" nor the company's similar announcement in November 2015. However, the environment in the US for nuclear new builds has become far harsher since then, shaking the operating foundation of the company itself. This situation provides an important lesson for other companies involved in the overseas nuclear new build business and other large-scale infrastructure investments in general, and should be taken into account in the investment strategies of energy companies running infrastructure businesses worldwide.

In Japan, the draft report of the examination concerning the new regulation standards for Ohi Units 3 and 4 was approved by the Nuclear Regulation Authority (NRA) on February 22. While there is no other notable progress regarding restarting nuclear plants, the Japan Atomic Energy Commission (JAEC) is continuing discussions for finalizing "the initiative for nuclear use" based on the discussions and expert hearings so far. At the eighth regular meeting on February 17, the JAEC indicated that efforts for the reconstruction and revival of Fukushima, regaining the trust of the people, and improvement and sustainable development of people's lives through the use of nuclear energy should be incorporated in the "initiative". The JAEC emphasizes that in formulating the "basic policy," it has "approached and studied nuclear power as an existing technology without either promoting or carefully considering its use." However, the recently indicated initiative contains nothing new compared with the basic policies in the "Strategic Energy Plan (2014)" or the "Long-term Energy Supply-demand Outlook (2015)", and merely confirms the existing policies.

Rather than following the existing basic policies, the parties concerned must now take concrete action. The initiative advocates "promoting research and development with greater focus on 'practical use' than before, and encouraging nuclear-related organizations of the industry, academia and government to strengthen strategic alliances and to enhance human resources and technological capabilities as the foundation for nuclear power based on a set of self-defined roles and responsibilities" to maintain the scale of nuclear power generation, which is an important baseload power source. Attention must be paid to the stance of the relevant government bodies, academia and industry on who will actually lead this effort, and how.



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Energy Indicators of Japan

IEEJ Homepage Top

Back Numbers of *IEEJ e-Newsletter*

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



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