

2011 World Energy Situation as Indicated in the BP Statistics

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After the 2012 edition of the BP Statistical Review of World Energy, one of the world's most representative energy statistics, was published last month, a presentation on the latest BP statistics took place in Tokyo on July 6. The statistics comprehensively compile a long-term series of country-by-country data for oil, gas, coal, nuclear, hydro-energy and renewable energy, including 2011 data as the latest information. The BP statistics give higher priority to provide the latest annual energy data than the OECD/IEA that cover 2010 data as the latest information. While the BP statistics provide massive data and can be analyzed from various angles or viewpoints, I would like to discuss seven matters of concern to me as key points for 2011 in the statistics:

First, the statistics revised proven recoverable oil reserves upward sharply. The 2012 version put the global proven recoverable oil reserves at 1,652.6 billion barrels at the end of 2011, up 269.4 billion barrels or 19% from the 2011 statistics. The increase amounts to an equivalent of Saudi Arabia's proven recoverable reserves, covering rises mainly in Canada and Venezuela. Canadian reserves expanded by 143.1 billion barrels and Venezuelan reserves by 85.3 billion barrels. The increase represents unconventional oil resources including oil sand in Canada and ultra-heavy oil in Venezuela. In the BP statistics, Venezuela replaced Saudi Arabia as the holder of the world's largest proven recoverable oil reserves. Saudi Arabia's loss of its position as the largest oil resources holder in the statistics is an epoch-making development in a sense. Meanwhile, Saudi Arabia expanded its oil production in 2011 by 1.21 million barrels per day or 13% from the previous year, taking its position as the world's largest oil producer back from Russia for the first time in three years, since 2008. The change indicated the real strength and depth of Saudi Arabia that can utilize its abundant surplus production capacity in response to market conditions.

Second, Russia's position changed in a development related to the above change. Despite a moderate oil production increase, it was replaced by Saudi Arabia as the largest oil producer in 2011. Russia maintained its position as the second largest gas producer in the world since it lost the top position to the United States in 2009. But its gas production gap with the United States expanded further to 44.2 billion cubic meters from 15.2 billion cubic meters in 2010. While Russia's resources potential is clearly great, the data in 2011 indicate that Russia is plagued with severe challenges such as the requirement for resources development in frontier regions, and an oil and gas demand

slowdown in Europe as a major export market for Russia.

Third, the BP statistics included clear data indicating that the United States has increased its significance as a resource-rich country thanks to its expanding shale gas and oil production. As noted above, the United States remained the world's largest gas producer for three years. Its gas output expansion in 2011 was the world's largest level at 47.2 billion cubic meters, accounting for 48% of the year's global increase. The United States also expanded its oil production by 290,000 bpd in 2011. This was the largest increase among non-OPEC oil producers, though falling short of the levels for some Middle East OPEC members such as Saudi Arabia.

Fourth, energy supply development by type of energy indicated the largest ever plunge in nuclear power generation. The BP statistics showed that global nuclear power generation in 2011 declined by 27 million tons oil equivalent (TOE) or 4.3% from the previous year to 599.3 million TOE. Global nuclear power generation fell in 2003 and 2007 as well due primarily to drops in Japan. The largest ever plunge in 2011 reflected a drop of 29.3 million TOE in Japan and a fall of 7.4 billion TOE in Germany. The statistics thus pointed to a clear effect of the March 2011 Fukushima Daiichi nuclear plant accident.

Fifth, the statistics clearly indicated a sharp increase in LNG trade as overall natural gas output continued a firm expansion. Global natural gas consumption in 2011 increased 2.2% from the previous year to 3,222.9 billion cubic meters. But international gas trade (combining pipeline gas trade and LNG trade) scored a greater increase of 4.0%. While pipeline gas trade almost leveled off, LNG trade swelled by 30.2 billion cubic meters or 10.1%. Japan posted the largest LNG import increase, indicating the impact of the nuclear accident again.

Sixth, primary energy consumption in 2011 scored a steady increase of 2.5% in line with global economic growth. The increase translated into 296.8 TOE. Among energy categories, renewable energy posted the largest growth rate of 17.7%. Though interpreted as indicating a global renewable energy boom, the growth rate translated into only 29.3 million TOE, accounting for 10% of the global primary energy consumption growth. In contrast, coal scored the largest volume increase of 192.3 million TOE, accounting for 65% of the global primary energy consumption growth. The coal consumption growth concentrated in China and India. Coal consumption expanded by 1632 million TOE in China and by 24.8 million TOE in India. The two countries' combined consumption growth accounted for nearly 100% of the global coal consumption increase.

Seventh, global energy consumption growth concentrated more clearly in Asia including China and India. Primary energy consumption in 2011 fell by 0.8% in OECD countries and expanded by 5.3% in non-OECD countries. The Asia-Pacific region posted an energy consumption rise of 5.4%, the largest among regions. Particularly high country-by-country energy demand growth rates included 8.8% for China, 7.4% for India and 5.0% for Vietnam. The BP statistics apparently

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indicate that the center of gravity in the global energy market has been tilting towards Asia.

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