

# Outlook for the International Oil and Gas Markets in 2013

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## Introduction

New elements of uncertainty have arisen in 2012 in the international crude oil market, such as the deepening of European fiscal crisis and accompanying credit concerns, a slowdown of the economies of developing countries, which helped lead the global economy, and the worsening of relations between U.S./EU and Iran centered on the nuclear development issue. As for natural gas, the decrease in domestic nuclear power generating capacity in Japan has brought continued stratification of demand for LNG, while the so-called shale gas revolution in the U.S. is generating major changes in global natural gas supply and demand, and going forward is expected to have an impact on pricing formulas in the Asian market as well. Based on the above recognition, this report will examine an outlook for the international oil and natural gas market in 2013.

## 1. Short-term International Oil Situation and Forecast of Crude Oil Prices

### 1-1 2013 International Crude Oil Price Forecasts (Reference Case)

Assumptions behind this Reference Case forecast for the 2013 international crude oil market include: (1) Assumptions for the global economy are that the economies of developed countries will continue to be weak while emerging countries will provide traction for growth, with overall global GDP growth at around above 3% level; (2) With economic growth, global demand for oil will increase slightly by around 700,000 to 800,000 B/D compared to the prior year; and (3) Non-OPEC oil production will be driven by an increase in non-conventional oil production in the US, raising it by about 700,000 B/D compared to the prior year, and the NGL production in OPEC will maintain its trend toward increased production. In this case, the “call on OPEC” crude oil will decline slightly from 2012 to about 30 million B/D, and if OPEC maintains its current production levels, supply and demand will tend to gradually ease. Since the “Arab spring,” however, the major Middle Eastern oil producing countries over time have seemed to prefer higher crude oil prices in order to cover increased social spending to stabilize their countries, and it is highly likely that OPEC may decide supply-demand adjustment policy to avoid excessive lower prices. With the above-mentioned global economy and the international oil situation, it is likely to see softening global oil supply-demand balance in the 2013 international oil market. As a result, the annual average price of Brent crude oil will be around 105 USD ( $\pm 10$  USD) (WTI crude oil is 90 USD  $\pm 10$  USD).

### 1-2 Basic Elements for the Above Outlook

First, with regard to the global economy, the growth rate of the global economy was 3.9% in 2011, 3.3% in 2012 and is expected to remain at 3.6%, still within the 3% order, in 2013 (IMF projection). The 2013 growth rate in developed countries such as the U.S. and the E.U. will remain sluggish, while the growth rate of non-OECD nations centered around new emerging countries like China will be high, and structurally these emerging countries will provide traction for the global economy. Risk

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factors, however, exist, including the possibility that credit concerns will reignite or that the economy in the E.U. will deteriorate, the consequences of the so-called “fiscal cliff” and its impact in the US, a deceleration of the Chinese economy, and others. Although there are scenarios in which these issues are resolved and the global economic recovery proceeds, what happens in the future with the global economy in 2013 is still very uncertain.

Next, with regard to the demand for oil, since 2011, global demand for oil has shown moderate increase of about 600,000 to 800,000 B/D annually compared to the previous year. While the demand for oil in the OECD has been sluggish or continues to decrease, the increase in demand for oil among emerging countries such as China, India, and the Middle East has supported overall demand. For 2013, the demand for oil in the OECD is expected to decrease by about 300,000 B/D from the previous year, at about 45.7 million B/D due to multiple factors, including the sluggish economies together with the continued improvement in vehicle fuel efficiency. At the same time, demand for oil among non-OECD nations continues to show a strong increase, and is expected to show an increase of about 1.1 million B/D compared to the previous year, reaching 44.7 million B/D. China and other emerging economy in Asia will account for dominant parts of non-OECD oil demand growth. The increase over the previous year in China’s demand for oil, however, has gradually declined from 440,000 B/D in 2011, to 270,000 B/D in 2012 so the degree of the increase in demand among emerging countries overall has recently slowed and needs to be kept in mind along with future economic trends.

Non-OPEC oil production, which represents approximately 60% of the global oil supply, can be expected to continue to show a gradual increase in 2013. The U.S. is the center of the non-OPEC production increase. Oil production in the U.S. in 2012 increased significantly, by 920,000 B/D over the prior year, but will increase again in 2013 by 570,000 B/D. Behind this is a significant increase in non-conventional oil production such as shale oil (tight oil) due to successful application of advanced technology (horizontal drilling, hydro fracking, etc.), which made the shale gas revolution possible. In the recent environment of high crude oil prices, investment in shale oil development has become more active, and the increase in production will continue in the future, mainly in such areas as Eagle Ford, Bakken and others. In addition, increased production is seen in Canada, Brazil, and other areas, and although production has decreased in Mexico, UK, Norway, etc., overall non OPEC production will increase by approximately 700,000 B/D in 2013 compared to the previous year. As a result, if OPEC maintains production at its current level (over 31 million B/D), the global oil supply may exceed global oil demand, resulting in an easing of the supply-demand balance.

With regard to OPEC production policy, with the high price of crude oil through 2012, OPEC has maintained production levels at over 31 million B/D, and thus the environment is favorable in terms of securing oil revenue in general as OPEC as a whole. On the other hand, the situation in the Middle East continues to be volatile after being touched off by the “Arab spring,” and implementing policies intended to stabilize their domestic situations and their societies, and securing a source of revenue in order to do so, have become vital even to the major Gulf oil producing countries. Under these circumstances, even the Gulf oil producing nations seem to prefer maintaining high crude oil prices, and if the supply-demand easing places downward pressure on crude oil prices, OPEC, which decided to roll over its production ceiling (30 million B/D) at its 162<sup>th</sup> meeting, could potentially begin to adjust production (reduce) in response to the status of supply and demand. Considering that Saudi Arabia indicating that a “fair price would be 75 dollars” with the formation of a “box zone oil price fluctuation” as of 2010 had a certain impact on the market’s price sentiments, in the future the attitudes and responses of major oil producing countries such as Saudi Arabia, which indicated its support for “100 dollar crude oil” at the start of the year 2012, are vital in thinking about crude oil market prices.

Causes of instability/disruption in the international oil market from now on could include both upwards and downwards swings in markets and prices. Factors in an upward swing, in addition to financial factors such as significant expansion in the influx of “money factor” into the oil futures market due to monetary easing, or unanticipated growth in the global economy, would include demand and supply forces such as an unanticipated downward swing in non-OPEC production or unanticipated expansion of oil demand. In addition, as risk factors, geopolitical risks must be kept in mind, including heightening of tensions surrounding the Iran nuclear development issue and its effects on oil supply (High Price case). At the same time, as a factor in a downwards swing, attention must be paid to the impact of such factors as a further decline in economic growth in major countries, such as the U.S., the E.U. or China, underlying slow growth in demand for oil, or greater than expected increase in

non-OPEC production (Low Price case). If these various factors arise, oil price levels will probably change significantly in either an upward or downward direction.

In terms of financial factors, in addition to the factors, the results brought about by QE3 (Quantitative Easing Program 3) implemented as of September of this year attract attention, but thus far those results of have been limited. Crude oil prices have dropped close to 10 dollars compared to September of this year and although the net long positions of speculators increased respectively 75,000 and 12,000 at the time of the QE1 and QE2, with QE3 this time, a decline of 63,000 can be seen as of early December. Since a rise in the anticipated inflation rate as at the time of QE1 and QE2 has not been seen, even buying in anticipation of inflation is weak and QE3 is still not acting as a factor in raising oil prices at this time.

Note that extensive scholarly investigations and research have already been done on the effects of these kinds of financial factors on the crude oil futures market. Although the causal relationship between trading by financial players and oil price levels has not been verified, the fact that an increase in trading by hedge funds has recently had the effect of increasing the correlation between stock prices and oil prices, and the fact that the increase in commodity index investment has increased the correlation between commodity prices that should have essentially different supply and demand conditions, and has increased the overall volatility of commodity prices, have been statistically confirmed.

While financial factors in the commodity futures market increased, regulations on futures trading in the U.S. have been tightened and as of October 12 of this year, a swap trader who trades in excess of eight billion dollars annually bears detailed reporting obligations. However, the tightening of regulations has proceeded only half way, such as with the regulations on new positions that were scheduled to be introduced on the same day, which were decreed null by a Washington D.C. district court in September of this year in a lawsuit brought by the financial industry. Although one might imagine that regulatory tightening would move forward in the U.S. with the reelection of President Obama, who takes a positive view on reforming the financial system, stricter regulations in the U.S. alone would simply shift the risk to markets in other countries, so it is vital that regulatory tightening proceed with the close cooperation of the various countries involved.

In the market environment described above, the price of crude oil in 2013 will be an average of 105 USD ( $\pm 10$  USD) for Brent crude oil in the Reference case. Note that when economic growth is weak, prices at the 90-100 USD level can be projected, and when anticipation of economic recovery is heightened, it is possible to forecast a price of over 110 USD. Note that WTI crude oil is forecast at 90 USD ( $\pm 10$  USD), and the price of crude oil imports CIF price to Japan forecast at 105 USD ( $\pm 10$  USD). In addition, in the High Price case, Brent crude oil would reach 115 USD (annual average) and WTI crude oil 100 USD, while in the Low Price case, they would be 95 USD and 80 USD respectively (both  $\pm 10$  USD). In the High Price case, the price would be projected to rise another 10 USD on average for the year (it is possible to see much higher prices in the short term) if there is a significant interruption in supply due to an emergency situation.

## **2. International Gas Market**

### **2-1 Supply and Demand**

Global natural gas demand is expected to increase steadily over the medium to long term. By region, demand in North America (+3.3% for 2011 versus 2010) supported by low natural gas prices, and in Asia (+5.9% for 2011 versus 2010), backed by strong economic growth, as well as demand in the Middle East (+6.9% in 2011 versus 2010) are notable. Europe, however, has shown a downward trend in demand for natural gas (-7.9% for 2011 versus 2010). In terms of supply, on the other hand, the increase in production in North America (+5.5% for 2011 versus 2011), Russia (+4.6% for 2011 versus 2010) and the Middle East (+11.4% for 2011 versus 2010) stand out, but in the Asian region where demand has increased, production has decreased slightly (-0.9% for 2011 versus 2010) and dependence on imports of natural gas supplies has increased.

Demand for LNG is also expected to grow significantly in the future. In the near term, however, economic recovery in Europe being delayed, and low coal prices resulting in less gas demand for power generation, and the US being not in need of LNG imports, LNG demand in 2012 is highly likely to decline from the previous year. Japan continues to be the largest LNG importer in the world (representing 33% of the world total), but China, (+26.5% in 2011 versus 2010) and India (+27.3% in

2011 versus 2010) where the supply and demand gap is expanding, are rapidly increasing their LNG imports. In addition, although volumes are small, the number of countries newly importing LNG is increasing due to the expanding supply and demand gap and government policies intended to diversify supply sources and encourage clearer energy utilization. These trends are likely to continue, and LNG demand is anticipated to expand.

In terms of short-term supply of LNG, Qatar, which currently has the world's largest liquefaction capacity, continues to play an important role. The surplus LNG currently available in the Atlantic market, caused by the stagnant demand in North America and Europe, will balance the Asian demand for the time being. In the medium to long-term, with some 60MT capacity addition by 2020, Australia is expected to be the largest LNG exporter in the world even in a conservative scenario by the Australian government. Additionally, various East African countries, notably Mozambique, are actively exploring and developing gas resources, and could potentially become a large new supply source. LNG exports from the U.S., despite uncertainties about the U.S. government's decision on exports to Japan, could ease the global LNG supply and demand balance. To sum up, despite various undetermined factors, if timely investment decisions are made for new LNG projects, it is certainly conceivable that supplies will meet growing demand.

## 2-2 Natural Gas Prices

The gap in gas import prices is increasing between Asia, the U.S. and the E.U. The import price in September 2012 was \$17/MMBtu for Japan, while it was \$9/MMBtu for the U.K., and \$2.5/MMBtu for the U.S. The monetary amount of LNG imports in FY2011 reached 5,402.2 billion yen in Japan, a 52% increase over the prior year, and this is expected to increase to approximately 6,170 billion yen in FY2012 and FY2013. With a trade deficit is expected to stay, extreme increases in demand and high prices for LNG are alarming issues from the perspective of macroeconomics and the outflow of the national wealth.

Behind the LNG Asia premium issue, there are the regional differences in supply and demand situation, market liquidity, and gas pricing. While the U.S. market is oversupplied and the EU market has weak demand, Asian demand has been growing rapidly. Market liquidity is already high in the U.S. and the U.K., and is increasing in continental Europe, but it is quite low in Asia that has a limited number of LNG suppliers. As for gas pricing, market pricing is already established in the U.S. and the U.K., and is increasingly influential in continental Europe. In Asia, majority of LNG is priced in relation to crude oil price.

Oil-linked LNG pricing in Asia was introduced with the intention of replacing oil with natural gas in importing countries. Now that natural gas has significantly replaced oil especially in power generation, the rationale for oil-linked pricing is diminishing. While alternative pricing options include hub pricing, LNG spot pricing, and linking with prices of other fuels, each pricing has both advantages and disadvantages. Whatever pricing may be chosen, it is vital that the prices accurately and in a timely fashion reflect the supply and demand situation in the Asia market.

The Asia premium is a structural problem, and there is no immediate solution. It is necessary to promote upstream projects, more efficient LNG-fired power generation, and supply diversification to loosen the demand supply and to increase the market liquidity. Although there is uncertainty about export permits and the Henry Hub price risk, the U.S. LNG projects will contribute to the diversification of supply sources. In addition, it is important to study LNG procurement schemes, such as joint purchasing. Furthermore, it is necessary to study pipeline gas import because it will contribute not only to supply diversification but also to domestic gas infrastructure.

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