Security of Oil Supply and Demand and the Importance of the "Producer-Consumer" Dialogue

By Ali Hussain*

This study addresses one of the most important issues facing the international oil industry namely the security of oil for both consumers and producers.

To highlight the importance of this matter one has to understand:

- how oil was created;
- how long it took to make; and
- its vital role in the world economy.

In order to tackle the oil security issues both consumers and producers have to discuss them and agree upon solutions that are mutually beneficial.

What is Oil?

> "Oil is a fossil fuel, which was formed millions of years ago. Some scientists say that tiny diatoms are the source of oil. Diatoms are sea creatures the size of a pinhead. They can convert sunlight into stored energy.
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> As the diatoms died they fell to the sea floor. Here they were buried under sediment and other rock. The rock squeezed the diatoms and the energy in their bodies could not escape. The carbon eventually turned into oil under great pressure and heat. As the earth changed and moved and folded, pockets where oil and natural gas can be found were formed."

The above definition clearly shows the unique characteristics of oil, namely how it was formed, the long period it took to materialize and as a result of such formation, that it is limited in quantity. Consequently oil can not be reproduced. It can only be replaced with another discovery, exploration and development. Therefore, once oil reserves are finished an oil producer can no longer produce oil. This is simply a significant sacrifice to oil producers and it is at the same time a warning to oil consumers to use oil efficiently and stop wasting this noble commodity. It is estimated that so far the world has already produced 400 billion barrels compared with existing proven oil reserves of 1200 billion barrels. By the end of 2005 Saudi Arabia had produced 111 billion barrels (b/b), Iran 78 b/b, Kuwait 37 b/b, Iraq 32 b/b and the U.A.E. 25 b/b.

The Importance of Oil

Oil plays an important role in the economic development of the world. It provides all the energy for transportation such as cars, trucks, airplanes, etc. It also provides energy inputs such as heating to domestic and industrial buildings as well as lubrication for engines and machines. In addition, oil is a raw material product for plastics, paints, fertilizers, pharmaceuticals, etc. In other words, oil is vital for many industries and modern economies rely heavily on goods and services that contain oil and oil products' elements. According to BP data, in 2005 the share of oil as a source of energy in the total world energy mix was about 36.4%. This is compared with other alternative sources of energy such as gas 23.5%, nuclear and coal each respectively 6%. With regard to renewable sources of energy, hydroelectricity contributed 6% while others such as solar and wind still played a very minor role in the total global energy mix. Furthermore, the use of these renewable sources as well as nuclear is restricted to power generation.

To compare oil with other alternative sources of energy, it can be mentioned, presently and in certain cases, oil is not a commodity that can be easily replaced by these alternative sources. Natural gas and nuclear power cannot compete fully with oil. For example, oil lubricants can only be obtained from oil, and natural gas cannot easily be transported like oil. As for nuclear energy, it continues to suffer from certain safety matters including nuclear waste. As far as renewable sources of energy are concerned, they have a long way to go before they can significantly compete with oil.

As mentioned earlier, oil is a depletable asset (i.e., it is finite) and, therefore, it is possible that one day in the future the world will be without oil. According to BP statistics, in 2005 the reserves- to- production (R/P) ratio was 40.6 years.

Moreover, due to the importance of oil, all countries in the world and especially the industrial ones pay particular attention to the international oil industry and try to encourage their oil and non-oil companies to be involved in the construction and operations of this industry in two ways:

i. Oil companies, which are engaged in the production of oil and oil products; and
ii. Companies, which supply the oil industry with its requirements such as machines, tools, equipment, etc.

World Oil Reserves

Although oil reserves can be found in many parts of the world, a large proportion of them is concentrated in the Middle East area. According to BP data, in 2005 world proven oil reserves were 1200 billion barrels. In the same year OPEC proven oil reserves were 902 billion barrels or 75 % of the world oil reserves. Furthermore, within the Middle East, in 2005, the Gulf had reserves amounting to 743 billion barrels, accounting for 62% of world oil reserves. This region also enjoys the lowest cost of oil production in the world. For example, in Iraq the cost of oil production is about $1-2 per barrel.

Security of Oil Supply

Due to the importance of oil, one of the most important issues of concern to oil consuming countries is the security of oil supplies from the major oil producing countries namely OPEC countries. If the right conditions are provided, these countries can meet the expected growth in world oil demand. Currently OPEC meets about 40% of world oil demand and as 75% of the world proven oil reserves are located in OPEC countries, OPEC can expand oil production to meet the anticipated future increase in the global demand for oil.

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However, in order for OPEC to expand its oil production, it needs to be certain that the oil industry will remain profitable. The oil industry is capital intensive and OPEC would require to billions of dollars of investment in exploration, development, storage, etc., and simultaneously wait 3-10 years to locate and develop these new oil fields before they can become profitable. For example, Mr. Khaled Al-Falih, a senior vice president in Aramco, stated at a recent conference in London, that Saudi Arabia plans to invest $80 billion in the next five years to increase production to 12 m. b/d, expand gas processing facilities and increase refining capacity at home and abroad.

It must be remembered that as OPEC is not the only supplier of oil in the international market, it can not guarantee oil price stability or the availability of oil supplies to all oil consumers at all times.

To enable OPEC to provide enough investments to increase capacity to meet the expected growth in oil demand, two hurdles must be tackled. They are:

a) Reasonable oil prices in real terms i.e., taking account of imported inflation and changes of the U.S. dollar exchange rate.

According to OPEC data, if 1973 is taken as a base year, due to imported inflation into OPEC countries and the devaluation of the U.S. dollar vis-à-vis other major currencies, the real price of OPEC oil in 2005 was only $10.42 per barrel compared with its nominal price of $50.64 per barrel.

b) Taxation in the major oil consuming countries.

Taxation in major oil consuming countries limits the growth in oil demand and thus reduces the incomes of oil producing countries and consequently limits their ability to invest in the growth of their respective production capacities.

Many major industrial countries have introduced heavy taxes on some oil products. In some industrial countries, the price that motorists pay for gasoline is three or four times higher than the price of the original crude oil. In some of these countries, taxes account for more than 70% of the final price of oil products. In fact, these industrial countries receive much more income from oil taxation than the oil revenues generated by OPEC. According to OPEC data, during the period 2000-2004, the G7 countries made a total of $1.6 trillion from oil taxation. This compares with oil revenues of just $1.3 trillion for OPEC countries over the same five -year period. In addition, while the $1.6 trillion in oil tax revenues by the G7 is pure 'profit' this is not the case for the OPEC countries, as the cost of exploring, developing and transporting that oil must be deducted from these oil revenues.

In addition, such taxation can be considered a transfer of income from oil exporting to some oil importing countries. Such income can be used by oil producing countries in oil exploration and development in order to address the need to increase the current production capacity as demand rises in the future. If there is not sufficient investment to increase oil production capacity before it is needed, the international oil market may suffer sudden price shocks. This is essentially what has happened during the last few years. During the last three decades the real price of oil in the international market has been relatively low, as shown earlier, which discouraged major oil producers, namely OPEC, to increase production capacity. This in turn led, during this period, to the stagnation in this capacity to around 31 m. b/d and was consequently unable to match the recent significant increase in global oil demand particularly of light crude, consequently leading to the significant rise in oil prices.

Security of Oil Demand

Major oil producers such as the OPEC countries need security of demand for their oil. These countries are developing countries and they rely heavily on the income they get from oil exports (i.e., oil revenues) that they receive in foreign currencies, which they use to import the necessary goods and services they require for their development. In some oil producing countries oil exports account for more than 90% of total exports. Thus, any drastic reduction in the demand for oil and hence oil exports and consequently oil revenues, may have significant economic as well as political impact on these countries.

Oil producing countries will be reluctant to embark on major oil production capacity expansion when oil consumers intend in the future to substitute oil with other sources of energy and plan to increase taxation on oil products. In its recent report World Energy Outlook 2006, the IEA stated, for environmental and political security reasons, "the world is on a course that will lead it "from crisis to crisis" unless governments act immediately to save energy and invest in nuclear and bio fuels". In addition, in major industrial countries some writers advocate a further increase in taxation on oil products. For example, in a recent article in the Los Angeles Times, Steven Mufson recommended that "A sharp hike in energy taxes on petrol and other fossil fuels would not only help improve the government's balance sheet, but it would also be a way to start addressing global warming." Furthermore, every now and then, and mainly for political reasons, some reports are published in some major oil consuming countries particularly the U.S.A. advocating an "Independent Energy Policy" which usually recommend reducing these countries dependence on Middle East oil. Such reports and statements can not and will not encourage major oil producers in the Middle East to increase oil production capacity significantly. Such important issues must not be left to the issuance of reports and statements. They must be discussed thoroughly in a direct dialogue between consumers and producers.

As aforementioned, the oil industry is capital intensive and it requires a considerable amount of investment to explore, develop and produce oil, as well as to maintain oil production capacity and facilities. Therefore, oil producers like OPEC countries have to earn a reasonable return on their investments in order to be able to continue to pursue these operations. It has been estimated that in the past it cost Saudi Arabia $2 billion annually to keep its surplus production capacity.

A reduction in oil demand will force oil production to slow down or even stop. This in turn may damage some oil fields and may also reduce the amount of oil that can be recovered from them in the future.

A reduction in oil demand and a decline in oil producing countries' oil exports and revenues may force these countries to reduce their investments in the oil industry itself for two reasons:

a) Due to the reduction in the money available for investment; and
b) There will be fewer incentives to expand future production capacity.

Under such conditions the world may face a shortage in oil supplies in the future, which will have negative effects on the global economy.

To avoid these problems oil producing countries must be assured of reasonable oil prices in real terms (i.e., taking imported inflation and the devaluation of the U.S. dollar into consideration) and stable growth in oil demand. This will help these countries to maintain their production levels and provide enough investment for future growth in oil production capacity to meet future growth in world demand. Due to the relatively low real price of OPEC oil during the last two decades, new and existing oil fields have faced lower levels of investment resulting in OPEC's production capacity, particularly in Saudi Arabia, remaining static. Given that the majority of OPEC countries are currently producing at or near full capacity levels to meet the recent increase in oil demand, the surplus production capacity in these countries, especially in Saudi Arabia, has declined to only 1.5 million b/d mostly of heavy crude oil. Thus, the ability of OPEC countries to meet the anticipated on-going growth in oil demand is limited unless more money is invested in their oil industries.

It goes without saying the security of oil supplies depends heavily on the security of oil demand. To ensure the security of both supply and demand, oil producers and oil consumers must work together.

Oil Producers-Oil Consumers Dialogue

According to the IEA, the global demand for oil is expected to increase from the present level of 84 m. b/d to 116 m. b/d in 2030. With their large oil reserves some countries in the Middle East and particularly in the Gulf region will be able to meet such extra demand. These countries include Iraq, Saudi Arabia, Iran, Kuwait and the U.A.E. These are the future "Mini OPEC" countries. Oil consumer countries must be prepared to negotiate with these countries from "now" on future oil supplies. To leave it too late will be "too late".

As oil is an important strategic global commodity and affects daily life everywhere, major oil producing countries must take the lead in organizing an effective and useful dialogue with oil consumers. Such dialogue should also include minor oil consumers and oil producers' countries as well as international oil companies who play a major role in the international oil industry.

This dialogue must concentrate its efforts on the discussion of important matters related to oil, which affect the lives of all people worldwide. Subjects to be discussed can include:

1. International oil prices and their effect on the world economy.
2. The effect of oil usage on the environment.
3. Present and future investment in the international oil industry.
4. The purchasing power of oil revenues of oil exports.
5. Taxation on certain oil products in major oil consuming countries.
6. Security of oil supply and security of oil demand.

There have been some international conferences and seminars covering oil producers-oil consumers' dialogue. Furthermore an institute named the International Energy Forum (IEF) has recently been established in Saudi Arabia to deal with this issue. This institute is the right forum where consumers and producers can meet to discuss above matters and must, therefore, be supported. However, so far the dialogue issue is not being taken seriously enough and unless there are comprehensive discussions and scientific studies of all the subjects mentioned above and unless an effective mechanism to implement the findings of these discussions and studies and possible agreements has been established, then all valuable efforts, unfortunately, will be wasted.

The establishment of the International Energy Forum in Saudi Arabia is a good example to show the interest of major oil producing countries to play a vital role in this dialogue and to tackle all issues related to this dialogue. Oil producers have not only an economic but also a moral obligation to provide enough oil supplies to oil consumers. It is also in their interests to increase oil production and hence oil exports to increase their oil revenues which they can use to develop their developing economies. It is also in the interest of all oil producers, oil consumers, international oil companies and future generations to see that oil is produced, priced and used in a scientific and efficient way for the benefit of all.

Finally, major oil producers and consumers must remember that oil is a strategic commodity, its quantity is limited and at the same time it is so vital for the daily life everywhere and thus must consider above policies very seriously. It is their obligation and duty as well as it is in their own interest; they must be very active in the international oil scene to adopt certain policies that will bring benefits not only to their nations but also to the international community at large. It is high time oil consumers and producers stop adopting short-term policies and start following and implementing long-term ones.

References:

1. BP Statistical Review of World Energy- different issues.
2. OPEC Annual Statistical Bulletin- different issues.
3. IEA- various reports.
4. OPEC publications- different issues.