



GLOBAL ENERGY SECURITY THROUGH TO 2040 – PROSPECTS & CONSEQUENCES

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Security of energy supply is important for both consumers and producers. While consumers focus on guaranteed access to affordable and reliable energy supply, producers continue to face challenges brought about by dynamic and often volatile market conditions and geopolitical tensions.

As for any commodity, the balance between supply and demand for energy is of great importance for the industry to survive. A 'win-win' situation is required for all stake holders; an imbalance, if not restored quickly, will be detrimental to all.

Population growth is and will remain, the primary driver of future energy trends, underpinned by the process of urbanisation. The current world population of 7.6 billion is forecast to reach about 9.2 billion by 2040. As the population continues to grow, so does the aspiration of the world to improve the quality of life and living standards.

It is observed that this population increase is accompanied by an exponential demand for energy. Global GDP growth currently averages around 3.4 per cent, growing to 3.7 per cent over the next two years. By 2040, global per capita GDP is estimated to increase by 80 per cent.

In order to meet this GDP growth, global energy demand is expected to grow at an average of 1.1 per cent per annum and it is the secure availability of affordable energy supply which will drive this development.

Fossil fuels have always been the dominant component of the energy mix and they will continue to be so for the foreseeable future. Today they meet about 81 per cent of global energy requirements. Despite the efficiency gains, the global energy demand is forecast to grow by 25 per cent between 2015 and 2040 and fossil fuels are projected to still have three-quarters of the share in the energy mix.

Renewable sources – wind, solar and biofuels – will see a combined growth of about 5 per cent per year through to 2040, when the share of non-fossil fuels is expected to reach about 22 per cent of the total energy mix.

Looking at Fossil Fuels, during the same period, oil and natural gas will continue to supply about 55 per cent of the world's energy needs. Oil will continue to provide the largest share of the energy mix, primarily to cater to the demand emanating from transportation and downstream chemicals sectors.

As it stands today, it is predicted that there will be a high demand for oil. In 2018, the IEA predicts an increase of 1.5 MBPD, reaching 99.3MBPD, whereas OPEC and the EIA expect the increase to be 1.6 and 1.72 MBPD respectively. Demand in 2030 is likely to go up to 109 MBPD.



Natural Gas Power Station on the Coast in Qatar

On the supply side, it is estimated that more than 80 per cent of new liquid supply is needed to offset the natural decline. Production is decreasing from mature fields, particularly in countries such as China, Mexico and Colombia. Without further investment, liquid supply will decline steeply. The IEA projects that, to meet the growth in oil demand, about US\$10 trillion, equivalent to an average of US\$400 billion a year of upstream investment is required between 2017 and 2040, to make-up for this decline.

Today, global oil resources are abundant, especially since technology has added tight oil, deep-water and oil sands resources to oil reserves. Producers are looking for adequate returns to invest and tap into these resources.

It is natural gas that is expected to have the highest increase in demand, primarily to meet the increasing needs of the electricity and industrial sectors. To meet this expected demand, an investment of about US\$8 trillion would be required. The abundance and versatility of natural gas makes it a valuable, clean energy resource; it can help the world shift to a less carbon intensive energy sources, providing an ideal bridge to a low carbon future.

Consequently, natural gas is forecast to increase more than any other energy source. In the global energy mix, its share is estimated to increase from 22 per cent in 2016 to 26 per cent in 2040.

Today, exploration, appraisal and development continue to falter. If the current lack of investment continues for few more years, it will begin to affect supply. Beyond 2020, the market may face problems if a course correction is not made at the global level. ■