Challenges to India's Energy Security in the Emerging Geostrategic Scenario*

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The Politics of Oil

Oil is the most politicised commodity in the world. Oil was, is and will remain a potent political and economic weapon. Wars have been fought over it and kingdoms have been toppled, to gain control over the production, refining, transport and use of petroleum products. To achieve this objective since early 20th Century whenever necessary, active intervention has been resorted to by different countries. In 1928, the oil of the Middle East was divided between the USA and Britain by the Red Line Agreement. "Persian Oil", President Franklin D Roosevelt said to a British Diplomat in 1944, "is yours. We share the oil of Iraq and Kuwait. As for Saudi Arabian oil, it's ours."

In this background, it is imperative to go through the historical geostrategic milestones and their impact. The idea for establishment of Organisation of the Petroleum Exporting Countries (OPEC) was first mooted in 1949. OPEC was set up in 1960, in response to the US putting import quotas on Venezuelan and Persian Gulf Oil to support the Canadian and Mexican oil industries. In 1973, OPEC imposed an embargo against the US and Western Europe. By the end of the embargo in March 1974, the price of oil had risen from US \$ 3 per barrel to nearly US \$ 12 per barrel. The "first oil price shock" with the accompanying of 1973-74 stock market crash, was regarded as the first discrete event since the Great Depression to have a persistent economic effect. Although the embargo was lifted in March 1974 after negotiations at the Washington Oil Summit, the effect has lingered. This period also saw the prospect of nationalisation of oil companies, most notably Aramco by Saudi Arabia in 1980. As other OPEC nations followed suit, the cartel's income soared. It was during this period that the term "petro-aggression" was mooted, a term used to describe the tendency of oil rich states to instigate international conflicts e.g. Iraq's invasion of Iran and Kuwait and Libya's repeated incursions into Chad. Another term is resource wars; one of the first examples being-nationalisation of the Oil Industry in Iran in 1950's and the consequent changes in the political order in that country.

Uncertainty in the World of Oil and Its Impact

The only certainty in the world of oil is uncertainty. It is hyper-sensitive to shift in political orders and disturbances. To cite a few examples, Iraq invaded Kuwait on 02 Aug 1990 and the crude oil price rose to US \$ 36 per barrel. The success of the Allied air strike on 16 Jan 1991, by allaying the fears of a cut in Middle East crude oil production, led to a record one-day drop in oil prices. In March 2005, crude oil prices broke the psychological barrier of US \$ 60 per barrel. Global disturbances like the Korean Missile launch and the Iraq war resulted in oil being traded at over US \$ 79 per barrel (an all-time record) in mid-2006. By October 2007, the oil prices had touched US \$ 92 per barrel, in the wake of ongoing tensions in Eastern Turkey and the weak US \$.

The year 2008 was of historical significance in the pricing of crude oil (Please refer to Figure 1). In April 2008, oil touched a new high of around US \$ 120 per barrel. In June, the crude oil price rose by US \$ 11 per barrel in 24 hours on the apprehension of an Israeli attack on Iran. By July, it had reached its zenith price of US \$145 per barrel. Inevitably, this was followed by the fall in oil prices catalysed, by the world financial crises, in the aftermath of the Lehman Brothers bankruptcy. In September, it came down to US \$ 90 per barrel. The lowest point was to come in December, when it traded down at US \$ 32 per barrel.



This uncertainty has also been a hallmark of oil prices in the recent past. In 2014, trouble in Iran resulted in crude prices climbing to about US \$ 115 per barrel. However soon thereafter, oil prices crashed to US \$ 67 per barrel. After touching its lowest point of around US \$ 45, crude oil prices have again risen to about US \$ 65 in April 2015. Since crude oil prices defy the classical laws of economics viz. supply and demand and are highly sensitive to political developments and other exogenous factors, it is next to impossible to project them with a reasonable degree of accuracy.

Ironically, the official charter of OPEC states 'stabilisation of oil prices in the international oil markets' as its goal. Evidently, it has not served its purpose. Analysts attribute it to its inability to dominate the market, lack of entry barriers and a non-adherence to production quotas by the constituent countries.

At present, oil producing countries are reeling under the impact of low crude price. Rouble has depreciated; Nigeria has raised interest rates and devalued Naira, its currency. Venezuela may default on its debt obligations. On the other hand, big importing countries in Europe, India and Japan stand to benefit. Money has been transferred from producers and sovereign wealth funds to consumers. Trade deficit, fiscal deficit and inflation have come down.

For India, the price uncertainty impacts exports to oil exporting countries. Lower crude prices adversely affect the inflow of remittances from expatriates in these countries. Lower oil prices also set back the foreign investment in exploration and production. To address each one is daunting policy challenge, not to mention, lower foreign exchange earnings. India being a refinery hub is an exporter of refinery products. Overall the economic impact of cheaper crude oil is expected to be positive.

The fluctuations in crude oil prices are mirrored in exploration effort. The successive oil shocks have spurred oil companies to stretch the frontiers of oil exploration, even to rugged terrains such as the Arctic. The shale revolution got traction from the \$100 per barrel price prevailing over the last four years, before the southward journey started. The Shiekh vs Shale debates centres around the prudence of low cost producers cutting production to keep crude oil prices high and thereby keeping high cost producers in business and sustaining research efforts for production in different areas, which have the potential to cut down their market share.

Policy Formation in the Wake of Uncertainty

Given that crude oil prices cannot be predicted, policy formulation is a challenging and daunting task. A sound policy has to factor in and work around this uncertainty. In case of decontrolled products, there is a direct impact on prices and on the inflationary situation. In case of subsidised products, the increased subsidy enhances the fiscal deficit and indirectly fuels inflation. For an importing country, higher prices adversely impact the trade deficit and consequent fluctuation in the exchange rate of its currency. This complex problem requires innovative solutions. One way to protect government revenue is to impose excise duty at specific rates which can be suitably modulated in times of high and low crude oil prices. But the long term answer lies in policy measures which will enhance domestic production and reduce dependence on imports.

Energy Security Particularly in Context of India

There is no silver bullet for achieving energy security and there is no 'one size fits all' solution. There is no quick fix solution. Countries which are beneficiaries of nature's bounty and do not depend on other countries for their energy needs have concerns which are distinct from those of importing countries. India has to take proactive measures to attain a comfortable level of energy security. It is a hard grind and has to be spearheaded by National Oil Companies (Please refer to Figure 2).

To address this challenge, India's energy consumption basket and its comparison with the remaining countries in the world needs to be looked at (Please refer to Figure 3). India is primarily dependent on coal. The gap in natural gas and nuclear energy consumption provides an opportunity for increasing their share. Although there is an ambitious scheme to promote generation of renewable energy, the dependence on the carbon and hydrocarbon sources will continue to dominate the energy consumption basket.



Figure 2



Figure 3

Regarding hydrocarbons, India imports 32 per cent of its annual gas consumption and 77 per cent of its domestic annual consumption of crude oil. Overall, about 72.5 per cent of the requirement of hydrocarbons is imported. The Prime Minister of India has given a challenging assignment of a 10 per cent decrease in the import requirement by 2022. This will require special efforts for enhancement of domestic oil and gas production. Energy security requires a holistic approach. Some of the generic measures to achieve this are :-

(a) Maximising the domestic exploration and production. The approach to ensure global energy security revolves around production in the country.

(b) Maximising indigenous service and material supplies with local content.

(c) Diversifying and securing international sources/supplies.

(d) Optimising cost and availability of supplies by striking a balance between long term, short term and spot contracts.

(e) Creating sufficiently large strategic reserves. The norm is for 90 days of strategic reserves.

(f) Creating strategic partnership with suppliers/countries. Instead of India just being a buyer, developing a strategic partnership with international suppliers and incentivise them to invest in India. One example is giving a stake to the exporting company in our refineries, petro-chemical complexes etc. There is a need to enable Indian companies access to the exporting country's hydrocarbon resources through a stake in the upstream sector. The idea is to transform a buyer-seller relationship into one of long term partnership.

After outlining the generic measures, the specific steps taken to address this challenge are given below :-

(a) The area of sedimentary basin in the country is 3.14 million sq km. Almost 50 per cent is yet to be surveyed. An ambitious plan to cover the remaining unsurveyed area within five years has been put into effect. This is being done through Multi-client Speculative Survey carried out by private parties and the remaining by government funding/ national oil companies.

(b) The essential task of reassessment of hydrocarbon resources which has not been done for over two decades and setting up of National Data Repository to house all the available data on the prospectively of these basis is under way.

(c) Both the search for new oil in old fields and new oil in new fields, have to be incentivised. Reservoir management and adoption of the latest technology to improve oil recovery and enhanced oil recovery can optimise and maximise the production of crude oil from old fields.

(d) To obtain new oils from new fields, a policy for bidding of marginal fields is at advanced stage of approval. This policy with attractive terms is expected to reignite the interest in exploration activity in existing fields.

(e) The existing model for nine rounds of bidding that have taken place under the New Exploration Licensing Policy has failed to yield the desired results. Evidently, if we continue to do things in the same way, we cannot get different results. A new bidding model which is in conformity with the Government objectives of 'minimum government and maximum governance' and 'ease of doing business' is under formulation. The next round of bidding would be based on the new model which will, by introducing the uniform licensing policy enable companies to explore both conventional and unconventional hydrocarbons like shale gas, coalbed methane etc. at any point of the lease validity period.

In line with the above mentioned philosophy, the Government has approved the following :-

(a) Early monetisation of discoveries by addressing the rigidities in the production sharing contract. The 34 cases resolved so far have hydrocarbon resources valued at approximately Rs 30,000 crores covering 34 cases.

(b) Policy for testing requirement which will initiate the process of monetisation of hydrocarbon resources

valued at about Rs 1,00,000 crores.

- (c) Policy for allowing exploration in Mining Lease area.
- (d) Exploration and exploitation of shale oil and gas in nomination acreages by national oil companies.

(e) Removal of uncertainty regarding gas prices by linking it to international prices. Since a large portion of the new gas is expected to come from High Pressure, High Temperature reservoirs and fields in deep water and ultra-deep water areas, a premium is proposed to be paid for gas produced from such difficult areas.

- (f) Stepping up exploration efforts in the North-East.
- (g) Monitoring and review for expediting transition from exploration to production.

(h) Diesel deregulation and consequent reduction of subsidy burden on upstream companies. This would generate surpluses for enhancement of exploration and production efforts by these companies.

It is expected that the other measures to improve the investment climate would result in an investment of Rs 50,000 crores in 2015-16 by the public sector and private sector upstream companies. This is expected to go up after award of marginal fields and blocks through the next round of bidding.

Diversification in Sourcing of Oil and Gas

On sourcing of crude and gas, India imports crude oil from 47 countries for strategic and economic reasons (Please refer to Figure 4). Maximum import is from Middle East countries viz Saudi Arabia, Iraq, Kuwait and Nigeria, which together account for around 50 per cent of total crude imports. Of the remaining quantity,

India's Sources for Import of Crude Oil



18 per cent of oil is imported from South America and 17 per cent from Africa. Gas is being imported from 17 countries primarily Qatar, and also from Nigeria, Algeria, France, Yemen Republic, Norway, Spain and United Arab Emirates. Surplus gas in the region is available in Qatar, Iran, Turkmenistan and Russia. Evacuation of gas is easiest from Qatar via sea route. For evacuation of gas from Turkmenistan, a consortium has to build, finance, own and operate the proposed Turkmenistan-Afghanistan-Pakistan-India (TAPI) pipeline. The consortium leader is slated to be finalised by 01 Sep 2015.

Exploration Abroad

Regarding acquisition of overseas assets, India has a dedicated arm – ONGC Videsh Limited (OVL). This company has met with reasonable success. Its activities span over four continents viz Africa, Asia, Europe and South America. It is participating in 32 projects in 16 countries. Currently, oil and gas is being produced from 10 projects in seven countries, viz Russia, Sudan, Vietnam, Syria, Columbia, Venezuela and Brazil. OVL's production equals about 10 per cent of the Country's total production of oil and gas in the Country. Its last big investment was in Mozambique. Although it has travelled a fair distance, the target of more than doubling its production in the next five years would require a concerted and focussed attention.

The Way Forward

The challenge to energy security is – increased production within boundaries of the Nation. One feature is that the majority of the acreage is held by the ONGC and OIL India whereas the state of the art technology is with international oil companies. Synergy between the two is the solution. A farm-in and farm-out approach would be one option for induction of latest technology in nomination acreages and also difficult areas awarded under the pre-New Exploration License Policy (NELP) and NELP rounds of bidding.

Turmoil in the Middle-East is a serious concern. Add to it the reduced dependence of the USA on Middle East oil and the fact that India and China would in the near future become the biggest importers of Middle East and West Asia oil. The strategic concern is of continued production in these areas and safe transportation through the choke points like the Strait of Hormuz and Suez Canal. The future of Iran sanctions remains an area of great interest both for its effect on the crude oil supplies and impact on international crude oil prices and also the possibility of construction of undersea pipeline to India.

Conclusion

Oil and gas security is an amalgam of policy, technical solutions and market mechanism. The Government, International Oil Companies and the National Oil Companies all have a role to play to ensure this.

On the supply side, oil and gas security involves enhancement of domestic production, acquisition of overseas assets of equity oil, building strategic reserves and promoting alternative sources of supply, which are diversified and of lower political risk. On the demand side, this would require promoting energy efficiency, fuel switching options and response capacity to supply disruptions.

A number of major steps have been initiated to improve India's energy security in the face of the emerging and ever changing geopolitical and economic developments. The policy measures enumerated above as they move towards fructification should enable India to tackle the challenges to its energy security caused by uncertainty which is the hallmark of the world of oil and gas.

The last one year's positive actions and movement towards addressing these issues in the hydrocarbon sector found echo in the following extracts from PM's speech at the Economic Times Global Business Summit :-

"The petroleum sector has seen major reforms. Diesel prices have been deregulated. This has opened up space for private players to enter into petroleum retail. Gas prices have been linked to international prices. This will bring a new wave of investment. It will increase supplies. It will resolve problems in the key power sector."

"Today India's cooking gas subsidy is the world's largest Cash Transfer Programme. Over 80 million households (the number now exceeds 127 million households) receive subsidy directly as cash into their bank accounts. This is one third of all households in the Country. This will completely eliminate leakage."

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