

CHAPTER 6**GEOSTRATEGIC IMPLICATIONS FOR INDIA & CHOICES FOR ENERGY
SECURITY**

On 12th of February 2015, Bloomberg India TV carried a report that Saudi Arabia had cut its crude prices for Asian consumers, the lowest price in the last 14 years. In the midst of a global crude price melt, Saudi Arabia is fighting to keep market share. The sum of this import is that global shifts in production, flows, traditional markets & consumption patterns are occurring. In no small part due to increasing oil and gas production of Shale & tight oil & gas in the US, and a marginal reduction in global GDP growth.

**The Geostategic Importance of the Middle East is Changing Due to Shale
Oil & Gas**

The increasing Shale Oil and Gas production in the US in particular, and in North America, especially Canada, point to a change in the traditional mix of oil and gas availability. Ramping up of Shale based oil & gas, as well as other unconventional sources such as oil from Tar Sands, Coal Bed Methane Gas, Oil from Coal Bed Methane, gas hydrates, bio fuels etc have been attributed as the key drivers of America's 'Energy Independence'. Mid Term Oil Market Report (MTOMR) 2014, released by IEA in June 2014, says

"While the non-conventional supply revolution that is reshaping the oil market and industry has been widely recognised as a game changer, this transformation is playing out in unexpected ways and against an evolving

backdrop.... Will OPEC producers need to "make room" for this new supply, or will political disruptions in the Middle East and North Africa go on or even worsen?"

The report has gone on to state that is difficult to overstate the extent to which the North American oil & gas supply surge would continue, and that it continues to defy estimations! (IEA, 2014b) To further quote from *ibid* report,

" the baseline of US and Canadian production for 2013 is 330 kb/d greater than had been expected last year, 420 kb/d greater than forecast in 2012, 2.20 mb/d higher than anticipated in 2011, and 3.21 mb/d above 2010 projections. "
(Kb/d is kilo barrels per day; mb/d is mega barrels/day)

A similar view was expressed in the IEA's MTOMR in 2013, when the report said

"Following several years of stronger-than-expected North American supply growth, the shockwaves of rising United States (US) Shale Gas and light tight oil (LTO) and Canadian oil sands production are reaching virtually all recesses of the global oil market. This North American supply revolution is not happening in a vacuum. Sustained high oil prices helped unleash it. Its impact is also compounded by other market developments, most prominently social and political turmoil in the MENA region in the wake of the 'Arab Spring' and the shift in demand to East-of-Suez markets. Together, these powerful forces are redefining the way oil is being produced, processed, traded and consumed around the world. There is hardly any aspect of the global oil supply chain that will not undergo some measure of transformation over the next five years, with significant consequences for the global economy and oil security "

A table, sourced from the same MTOMR of 2013 (IEA, 2013), indicates the increasing Non- OPEC supplies of oil, increasing global demand for oil and in spite of that, a clear OPEC spare oil capacity.

Global Balance Summary

(million barrels per day)

	2012	2013	2014	2015	2016	2017	2018
GDP Growth Assumption (% per year)	3.09	3.39	4.03	4.30	4.41	4.47	4.44
Global Demand	89.78	90.58	91.80	93.12	94.38	95.58	96.68
Non-OPEC Supply	53.35	54.43	55.70	57.03	57.84	58.62	59.31
OPEC NGLs, etc.	8.31	8.56	8.75	8.90	7.00	6.97	7.00
Global Supply excluding OPEC Crude	59.66	60.98	62.54	63.92	64.84	65.59	66.30
OPEC Crude Capacity	35.00	35.35	36.30	36.37	36.66	36.80	36.75
Call on OPEC Crude + Stock Ch.	30.12	29.59	29.26	29.19	29.54	29.99	30.37
Implied OPEC Spare Capacity ¹	4.87	5.70	7.04	7.18	7.12	6.81	6.38
as percentage of global demand	5.4%	6.4%	7.7%	7.7%	7.5%	7.1%	6.6%

Table 5: Table Showing Increasing Non-OPEC Oil Supply Source: (IEA, 2013)

American Energy Independence: The US is estimated to become the biggest oil producer in the world very soon. US President, during his State of The Union Address, on January 2015, announced that the US was number one in both oil and gas production, globally (Obama, 2015), overtaking Saudi Arabia in oil production. Similarly, as alluded to earlier, North American gas production is also increasing rapidly and gas from Shale plays and other 'unconventional sources' is now more, than from conventional sources. Trends point to the US becoming a net gas exporter, very soon, due in a very large part to this Shale Gas boom as well as increased production from conventional gas fields, onshore & off shore.

Shale Oil & Gas is Altering Global Energy Flows

These changes in traditional flows of petroleum based energy, and a change in the overall dynamics of national economies is likely to be significant. To get an overview of the traditional flow, is perhaps appropriate to look back at the situation, prevalent in the last two decades, i.e. before the US started to become

energy dependent. The US was, and still is, one of the biggest energy consumers in the world, along with China. And a lot of this energy was imported from the Middle East, both by China as well as the US. However, the role of the 'global super cop' or superpower was played only by the US, and in keeping with its Carter Doctrine, its military presence, close surveillance and intervention have been acutely evident. As mentioned earlier, the two Gulf wars were the clearest manifestations of this role.

Impact on Nations in the Middle East

This role of keeping peace in the Middle East, traditionally by the US has always come with costs to the US; these costs are military costs, charged effectively to the US economy and eventually to the US taxpayers. More significantly, since the First Gulf War, lives have been lost in such operations. Increasingly, Arab states have been held responsible by the international community for fomenting trouble and instability in the world, and some states have long been accused of state sponsored terrorism. Wahabi Islamic terrorists, Shia and Sunni terrorist groups have been behind some of the most gruesome & violent terror attacks the world over. The US and most of the world attributes such terror funding and state sponsored violence back to 'petrodollars' from this region.

Oil prices have come down from their highs in 2011 to 2014, when they were in the range of 100 plus US\$/barrel. While writing this, on 12th of February 2015, the Brent crude oil price was 57 US \$/barrel, as indicated by Bloomberg India TV, on its ticker. Given the substantial fall in oil price, it is instructive to take a look at the 'fiscal breakeven price' of a barrel of crude oil, given that the actual

cost of production ranges from only 8 to 40 US \$/ barrel, and varies by country, field and recovery technologies applied. The following chart is indicative.

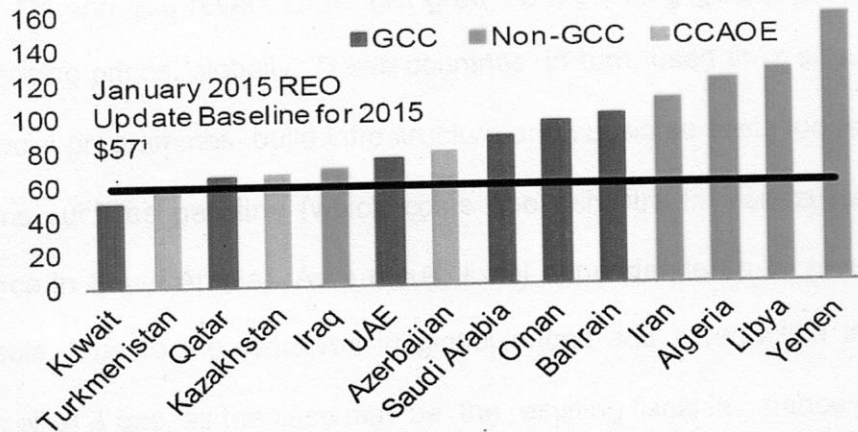


Chart 24: Fiscal Breakeven Prices in 2015 (US \$/Barrel) Source: (IMF, 2015)

Adverse Fiscal Balance: Most oil producing & exporting mentioned in the above chart indicated by Gulf Cooperation Council (GCC) and Caucasus and Central Asia Oil Exporters (CCA OE), are getting adversely impacted by low oil prices. While this chart indicates the position as of January 2015, going forward, the IMF estimates that the fiscal balances of these countries will remain adverse (IMF, 2015). An estimate by the IMF, up to 2019 is as follows.

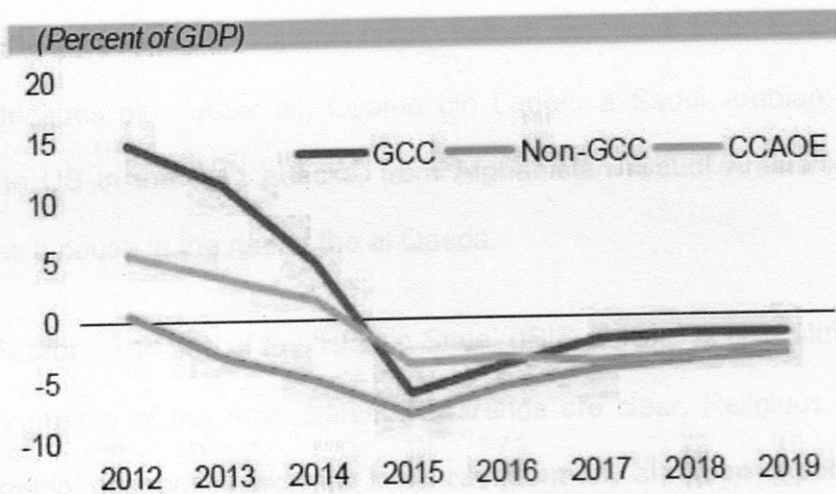


Chart 25: Fiscal Balance of Oil Exporting Countries as % of GDP in 2012-19 Source: (IMF, 2015)

Negative Fiscal Balance & Regional Stability: Such negative fiscal balance does not auger well for any of these economies. Most of these countries, especially in the Gulf have increased their social spending, with increasing oil revenues. Oil and gas revenues in turn grew from growing global demand and from increasing prices, globally. These countries, in turn, used their oil wealth to finance social programmes, build infrastructure and subsidise basic foodstuff and other items such as gasoline (which costs one cent/litre in Venezuela and a similar price in Saudi Arabia). As a result, fiscal dependence on oil revenues is considerable. Due to the reduction in global prices and a reduction in export quantities of oil & gas, as the case may be, the resulting fiscal imbalance certainly implies reduction on such spending and is certain to provoking civil unrest and unemployment across the region. This in turn may well add to the existing motley crowd of terrorists, insurgents and their supporters from these countries, just as they have from so many other Arabian & North African & economically disadvantaged sections in the Central Asian Republic countries. The best example of such terrorists and fighters has been visible in Afghanistan, where fighters from Sudan, Libya, Tunisia, Algeria, Nigeria, Saudi Arabia, Syria, Iraq, Iran, Tajikistan, Uzbekistan, Turkmenistan, Yemen etc, have been operative for over two decades plus. After all, Osama bin Laden, a Saudi Arabian national attacked the US in the 9/11 attacks, from Afghanistan. Saudi Arabia is widely attributed as a cause in the rise of the al Qaeda.

The ISIL Factor: The rise of the 'Islamic State' (ISIS or ISIL) is also attributed to funding from some of the Arab states. The trends are clear. Religious leanings notwithstanding, economic hardships have caused many a person to take to less than legitimate causes, internationally. In this landscape, sustained fiscal

imbalances or reduction in social spending by countries in the Middle East and Central Asia will most likely lead to increased instability from state & non state actors.

US 'Pivot to Asia' Policy: The US has already announced its Pivot to Asia policy, whereby it seeks to shift the focus of its effort, away from the Middle East towards the Asia-Pacific region. This shift, by implication, will result in a rebalancing of its military and diplomatic assets. While the US Fifth and Sixth Fleets will stand guard to American interests in the region, when US economic and energy security interests themselves start to dissipate, so will its commitment and budgetary authorisations. And these may well be rebalanced to the 'Asia Pacific' region. But equally important is the role of troops on ground. The years since 1991, i.e. the First Gulf War, have seen large US and NATO troop presence on the ground, in the area from the Persian Gulf, spreading up to Afghanistan, eastwards, in order to keep Middle East and South Central Asia peaceful. The troop surge in Iraq in 2006 to 2008 and from 2009 to 2014 in Afghanistan have seen large scale US troops presence on the ground. The US has since pulled out completely from Iraq; still has an 11500 strong force in Afghanistan.

The ISIL & Middle East Ferment: The US has become war weary; fighting two decades of wars in what is the most volatile region in the world. What else can explain its reluctance to get into Syria and Iraq, and contain or destroy the ISIS? What is clearly evident, is that the US is not getting into the ISIS-Syria-Iraq cauldron; instead wants Arabian countries to do so themselves. What a clear departure from earlier US posture of ensuring a stable West & Central Asia, and stability of energy price and flows.

A reluctant US presence in the Middle East, largely due to its 'Shale energy driven' energy independence, coupled with increases in fiscal imbalances, for a whole host of reasons amongst countries of this region has led to a protracted period of strife and resultantly, a couple of such countries witnessing a weakening of their state power. The growth of ISIS and radical Islamic organisations is evident. Syria & Libya are amongst the clearest of such manifestations. Yemen is perhaps the latest. Middle East continues to remain in ferment. In either case; whether the state is losing its power to retain 'exclusive right of legitimate use of force', which is the classic Weberian condition of 'a state'; or whether economic hardships drive radicalised elements into conflict situations, or whether some Middle East & North African countries continue to use petrodollars to fund terror, it is clear that conflict & instability will continue to fester and grow, if not controlled.

Who Looks After Regional Security

With the 'big brother' US taking a distant, somewhat arms length position, it is clear that someone else will have to ensure regional security. This is likely to be the first major geostrategic implication. What are the options? Can the Middle Eastern and South Central Asian countries themselves do so? Most unlikely, given the fractious divide amongst themselves, on sectarian, fundamental lines; not to forget the 'primus inter pares' attempts to become first amongst equals. Oil based terror and insurgent funding has been a chosen state strategy, targeted often by these countries against each other.

The opposing but existential basis of Israel vis-a-vis its neighbouring states is the other fault line that will prevent regional grouping and stabilisation. It is

notable though that the US, in a shift from its largely Israel influenced perspective, is encouraging Iran to negotiate Iran's nuclear programme, causing much consternation to Israel. Geopolitics and the geostrategic calculus are changing.

The Sino-Russian Context

China has considerable energy interests in the region. If it wants to get involved, such intentions could translate into military ramifications like expanded PLA footprint, an extended blue water role for the PLA Navy and the PLA Air Force. And a substantial power shift globally. However it is unlikely that China will be able to do so, in the next few years. It is yet another matter that the possibility of something similar happening does exist and from India's perspective, does not portend well for its interests. In the long term, China, being the largest energy consumer and the largest export market for these Middle Eastern and South Central Asian countries, has ambitions of extending its area of influence and area of control to the Persian Gulf, through the South China Sea and the Indian Ocean.

Russia too may try and exert geopolitical influence in the region, as it has so done in the past; with varying degrees of success (Egypt and Syria are cases in point). But due to its diminished economic power presently, it may not succeed. Russian fiscal balance is even more precarious, given the low oil & gas price, coupled with an economic embargo due to the Western belief of Moscow's involvement in Ukraine. Moscow has traditionally been considerably dependent on its oil & gas revenues.

However, with Russia and China moving closer towards an economic and military embrace with each other, the possibility of a Sino-Russian axis to

dominate this region cannot be precluded. The Shanghai Cooperation Organisation (SCO) has already started the process of exerting itself in the Central Asian region and the oil producing states will, in time, get impacted. This scenario too has obvious geostrategic implications and power shifts, especially for India.

Implications for India

That other emerging regional power is India. Logically, India is the closest to this region, both by land as well as by water. Economically, safe sea lanes are going to play an increasingly important role in the geostrategic calculus and it is for India to secure these.

World oil chokepoints* and trade flow

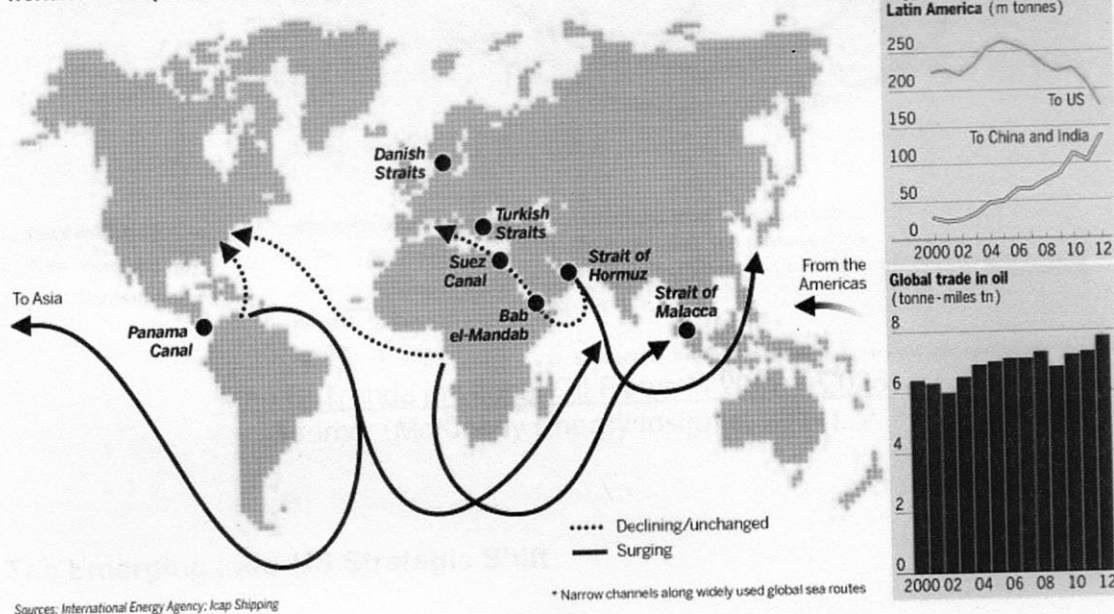
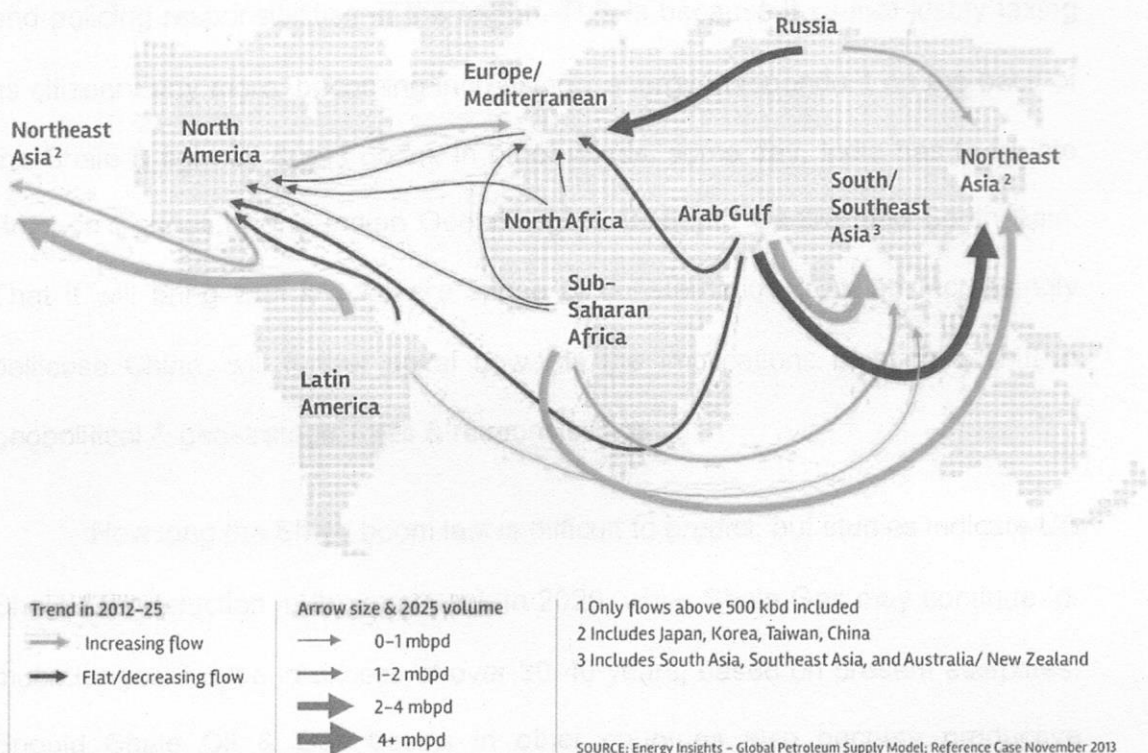


Chart 26: World Oil Flows Source: (Ajay Makan, 2013)

The flow of Oil & gas is shifting from the traditional route, i.e. from the Gulf to US and the West; it is increasingly flowing into India, South East Asian

economies like Cambodia, Thailand, Korea, and the East Asian block of Japan, China and Philippines. Japan, India, Korea and China are amongst the biggest gas & oil importing nations in Asia, all sourced from the Gulf. All this has to flow through the Indian Ocean. For India to ensure its own energy supplies and play an increasingly significant role in the Indian Ocean, the size, capability and expenditure of strategic military assets, naval and in the air have to increase.



Map 6: Trends in Global Oil Flows in 2012 – 2025

Source: (McKinsey Energy Insights, 2014)

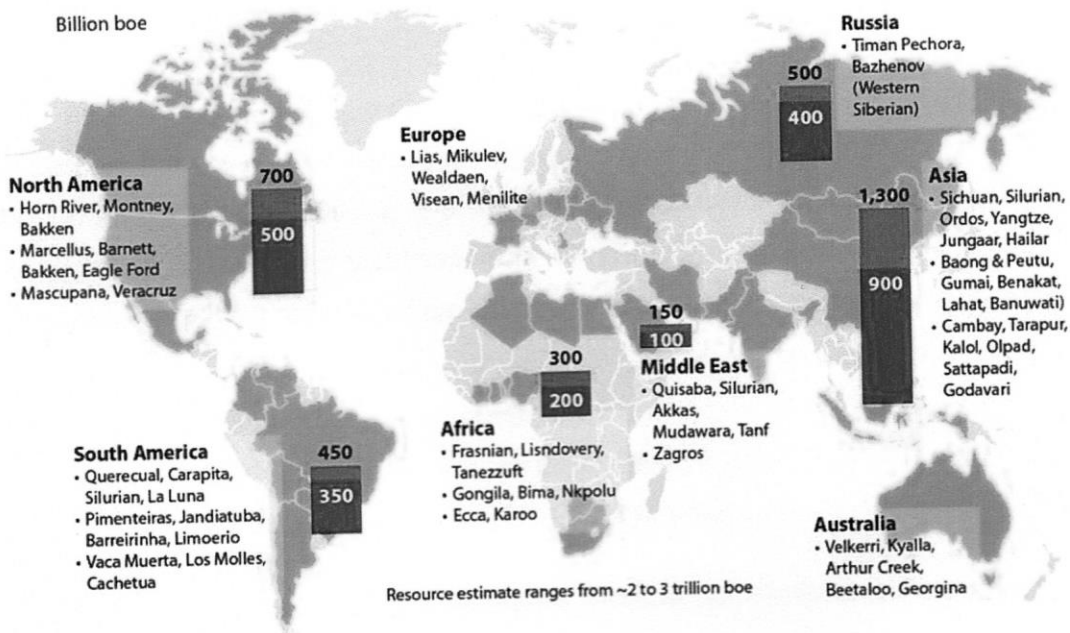
The Emerging Indo-US Strategic Shift

The US has already been looking to India towards such a progression. The quadrilateral, involving India, the US, Japan & Australia is a step in such a direction. The latest strategic dialogue and joint Indo-US statement, during US President Barack Obama's visit to India in January 2015 is a pointer to the

American expectations of India shouldering greater regional responsibilities. These responsibilities include, but are not limited to keeping sea lanes safe. These include, most significantly 'boots on the ground', as and when the security situation on the ground deteriorates. This happened in 2003, when the US asked India for sending troops in Iraq, and in certain other contingencies. The US also envisages India as an increasingly dominant regional economic and military power in the region, because the US wants to shed a portion of its troop, naval and policing responsibilities in the region. This is because it cannot justify taxing its citizenry any more, becoming increasingly energy independent on the back of the Shale & tight oil & gas boom. In other words, some day, India has to fill into America's shoes, in the Indian Ocean region, in South Central and South Asia. That it will bring with it a severe sense of consternation from an increasingly bellicose China, will further spiral upwards the implications of such a shift in geopolitical & geostrategic roles & responsibilities.

How long the Shale boom last is difficult to predict, but studies indicate US Shale Oil production in the may peak in 2020, while Shale Gas may continue for much longer, maybe in excess of over 30-40 years, based on present estimates. Should Shale Oil & Gas basins in other countries also become productive economically, the global flows of oil & gas will further evolve. As mentioned, China and Russia hold amongst the largest reserves, in addition to producing basins in the US. Significant reserves are also assessed to be located in Argentina. India, as mentioned earlier, may hold substantial Shale reserves, but due to population pressures and scarcity of water, Shale / tight oil & gas production cannot be forecast at this stage.

However, security of India's borders and of its economic interests is paramount. Reports of oil resources, including Shale basins in the Assam and Arunachal Pradesh areas must be factored into India's geostrategic calculus. China's growing assertiveness, especially with reference to its claim on Arunachal Pradesh can also be seen as one of China many possible options in search for sources of energy. Any tangible and recoverable oil & gas fields in the region are likely to make the area even more important and will have to have heightened security connotations.



Map 7: Assessed Shale /Tight Oil & Gas Reserves in Billion Barrel Equivalents
 Source: (Schlumberger, 2015); (Map does not accurately reflect international boundaries of India)

Strategic Aspects of Energy & India's Energy Security

Moving away from the geopolitics of Middle East Energy and geostrategic location of India at the peninsular apex of the Indian Ocean, a look at the strategic aspects of Shale based energy as well as energy security in such a scenario, is also required. McKinsey, in its report "India: Towards Energy Independence 2030" prepared in 2014, has made estimates of India's primary energy requirements, at 1508 million tons of oil equivalent (Mtoe) in 2030, against the 2010 requirement of 691 Mtoe. The report then goes on to say, that in such a 'business as usual' scenario, India would be dependent on imports for 51% of its energy requirements, as against 30% in 2010. The report also states that

"India will be one of the most imports dependent countries in the world. In comparison, the US and China are expected to have import dependence of 1 per cent and 20 per cent by 2030. In the case of China, this includes imports through long distance oil and gas pipelines from central Asia, Indochina and Russia. Moreover, using 2010 numbers from the major energy consuming economies as an indicative comparison, only Japan and Germany have higher import dependence at 80 and 60 per cent respectively. But unlike India, these countries have greater affordability and the International Energy Agency (IEA) emergency response measures as a backup" (Vipul Tuli & Amit Khera, 2014).

This report has made ten recommendations, to improve India's energy security and its energy independence. The first recommendation is an increase in the production of coal, which must reach 1200 Mtoe. This recommendation seems to already have been acted upon.

The very next step recommended, is that India must act on unlocking its unconventional gas potential. Unconventional gases include Shale Gas, Coal Bed

Methane, High Temperature & High Pressure Gases. In order to develop up to 100mmscmd of unconventional gas, India must enlarge the scope of its Shale Gas policy to include private and public sector players alike; ensure financial and infrastructure incentives to attract investment in unconventional supply chains and services; allow full exploration and exploitation of all resources in NELP blocks; allow market determined pricing for unconventional gas and the freedom to market gas. Other recommended measures include market linked pricing for all stages of the conventional oil & gas field development, reduction in power demands from buildings & industry by 30%; nationwide gridded solar energy, the target for which has since been substantially increased to 100 Giga Watts by the Government of India, in 2015; change in transport and fuel mix norms; and globalisation of Indian energy companies.

The last two recommendations are important in the context of the Shale revolution & India. The first of these is the creation of an 'India-Middle East Energy Corridor'. Since Shale Oil production in the US is expected to rise to levels beyond current US imports, Middle East and Africa will seek stable, large markets in the East, (which in fact they already are). This shift will give India a unique opportunity to create an 'India-Middle East Energy Corridor' to forge new contracts with oil and gas suppliers, consider establishing an Asia-Middle East Energy Agency to share information, facilitate emergency response agreements; make joint investments refining and petrochemicals, feedstock and energy intensive production of urea, aluminium, steel and petrochemicals in the Middle East ; create shared energy infrastructure between India and the Middle East, such as pipelines, ports and storage, strategic storage and dedicated mega ships of the kind already created between Russia & the EU; Russia & China; Myanmar

& China; and North Africa & Southern Europe. The last recommendation is that India must invest in gas companies and gas fields in East Africa and North America. To take full advantage of the Shale Gas revolution in North America, and consolidate its natural advantage in the Indian Ocean rim, India should continue to expand its presence in North America through equity based investments in the US and Canada (Vipul Tuli & Amit Khera, 2014).

Key Recommendations

India must recognise the long term geostrategic implications of the Shale Oil & Gas revolution and make the most of the opportunities and meet emerging challenges. Otherwise, India will be increasingly dependent on energy imports and all its vagaries.

For now, India as a country must enjoy the low oil & gas prices, economically. It must use this economic opportunity to leverage growth nationally, invest in state of the art energy technologies and look at technology transfers, from the US and other global leaders. This is also the opportune moment to restructure energy subsidies, nationally as well as energy pricing regimes.

Some of the other actions that India needs to take, to further synergise its various elements that will contribute to its energy security are:-

- Resolution of the border issue with China from a position of strength. (Next order implication is sustained growth of India as a nation and its economy & trade.).
- Long term, planned & sustained strengthening of military capabilities, transnational surveillance capabilities, and transnational cyber warfare &

counter-espionage capabilities. This will help secure own energy interests, near and far. Taking a leaf out of America's book may not be a bad thing.

- India's need for greater engagement of Middle East nations, in the face of extant Middle East inclination to India.
- Build long term arrangements with countries like Saudi Arabia, Iran, etc, with whom relations are not at the desired levels
- Increase gas infrastructure in the country, e.g. LNG terminals for import and storage of gas, re-gasification, and pipe based transportation systems to facilitate greater use of globally available natural gas.
- International market price linked gas pricing mechanisms in India, for Indian & foreign interests to aggressively invest in India that will translate into actual gas flows.
- Shale Oil & Gas prospection aggressively
 - Nationally
 - Internationally
 - Equity based investments abroad.
- The Improving Indo-US strategic relationship must be leveraged to run its strategic course, to include Indian companies obtaining technology knowhow and transfer, in the fields of Shale Oil and gas.
- Established US companies be invited to come and explore suitable regions in India, for oil & gas, to include Shale Oil & gas.
- Change energy mix in power projects/ transport sectors.
- Improve national energy efficiencies
- Invest in next generation, clean energies like wind and solar energy.

With some of these actions, India may well be suitably poised to take on the challenges that are emerging and are likely to confront it. India must prepare itself to take on the mantle of a regional power, with a sense of altruism and responsibly, but backed by strong capabilities.