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Central Asia: A New Avenue to India's Future Energy Needs & Geo-Strategic Challenges

Pranab Kr. Das
Assistant Professor in Geography, Department of Geography, Sree Chaitanya College, Habra,West Bengal, India

Abstract:
India is becoming global leader in terms of economic and political influences. It is an active member of G20. However, it has a great obstacle; it is not self-sufficient in petro energy. India has 5.5 billion barrels of proved crude oil and 43.8 trillion cubic feet of natural gas reservoir. It produces only 30 percent of its fossil fuels demand, imports 70 percent from abroad as fourth and six largest importers of crude oil and Natural Gas. In 2011 Govt. of India has decided to increase its' strategic storage of 132 million barrels crude oil by 2020. To, achieve this target; India has to find new energy partner beyond the traditional suppliers. Moreover, presently Indian Govt. is encouraging mix consumption of oil and gas to reduce pollution in cities. But due to shortfall of production in K-G basin, India has to find gas sectors in abroad. In this scenario, the Central Asian countries could be good alternative to India. Yet now, India has no mature foreign policy for Central Asia and it is facing strong challenges from China. This, paper deals with India's strategic interest to Central Asia in terms of its' future energy needs, present geo-strategic and geo-political challenges highlighting the possible scopes and measures regarding this fact.

Keywords: *Central Asian States, Geo- Strategic Relation, India, Petro- Energy*

1. Introduction

India has a Vision to be Developed Nation (Vision 2020) within year 2020. It is showing significant economic growth in spite of several socio-economic obstacles. India is not only becoming Economic Giant but also establishing it's geopolitical influences. To, continue the avenue of growth and development it has to secure the energy supply for long term. Like other economic super powers, India has no sufficient petro- reservoir. Indian government expenses huge money to import natural oil and gas. Middle East is the India's traditional Supplier of fossil fuel. It imports near about 64 percent of crude oil from this region (and now enhancing the supply chain outside of this region. Presently, India has started to import crude oil from Sakhalin of Russia, Venezuela, Mexico, Algeria, Nigeria, Angola etc. However, the amount is not satisfactory. Moreover, these countries are far away from Indian coast. In this situation, Central Asia, extended neighbor of India, could be an alternative. These countries are close to India and bountiful of petro reservoir. But, it would not be so easy for India to harness this petro wealth. India has lately realized the potentiality of this region and now it is acting as a late comer. Before, India's arrival Russia, China and U.S.A – European Union established their strategic presence in this region with same interest. Moreover, India has no land access to this region. So, it is important to take effective foreign policy and develop a profitable route for supply of crude oil and gas from Central Asia. In this context, we must discuss India's present status of fossil fuel production, consumption pattern; geo-political situations of Central Asia and Indian subcontinent; India's strategic disadvantages to Central Asia and Strategic challenges.

2. Methodology

This is an Analytical Paper based on secondary data. Extensive library works have been done to find out related papers, articles and Govt. reports. Official websites, reports and statistics of U.S Energy Information Administration; OPEC; ONGC; Ministry of Petroleum & Natural Gas, Government of India have been used trough internet. Several oral narrations have been conducted with the experts in these issues and aspects. GIS softwares are also used for mapping purpose.

3. Objectives

Objectives of this paper are:

- to study the India's present status of fossil fuel production, consumption and trading,

- to study the present status of traditional suppliers to Indian energy market,
- to study India's scope in export of finished petroleum products to global market,
- to study India's strategic storage of petro energy,
- to study the petro potential of Central Asian States,
- to study the present scenario of Indian foreign policy to Central Asian States,
- to study the India's geo-economic, political and strategic challenges to Central Asia,
- and to highlight the possible measures for harnessing the petro energy from Central Asia bypassing Pakistan.

4. Present Scenario India's Fossil Fuel Production, Consumption and Trade

India has the second largest population in the world and showing significance economic growth. As per IMF evaluation, presently it was tenth largest in the world by nominal GDP and third largest in terms of PPP in 2012. [IMF 2013] India is not self sufficient in petroleum production. According to Oil & Gas journal India had 5.5 billion barrels of proved crude oil reservoir at the end of 2012. It produces only 30 percent of its demand and 70 percent of fossil fuel collect from abroad (fig: 2). India is the fourth largest importer of crude oil after U.S.A, China and Japan. [U.S Energy Information Administration, June 26, 2014].India has direct sea access with the Middle East and in 2012 it has imported 64 percent of Crude oil from the same area. Among the Middle East countries Saudi Arab (19 percent) is the largest contributor to Indian energy market (fig: 1). Iran was one of the important energy partners of India. However, due to ongoing U.S and European economic sanction on Iran, India has reduced it's import from Iran. In 2008 India imported 16.43 percent crude oil from Iran which has declined in 2012 with 7.13 percent [Reuters 2012.08.06].

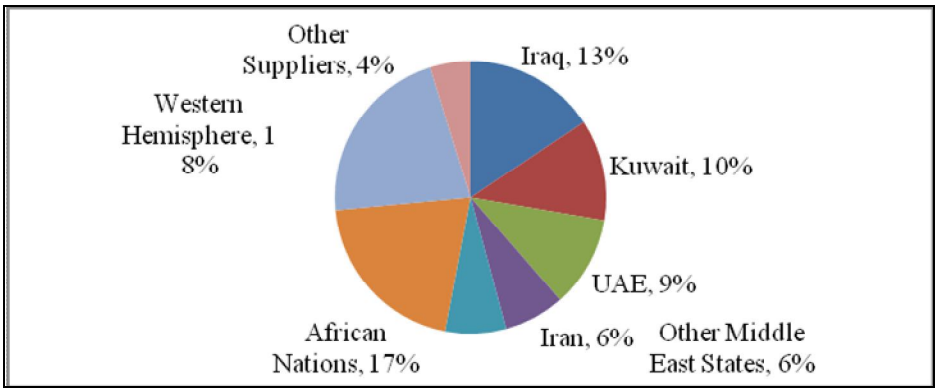

Figure: 1 India's Crude Oil Import in 2012
Data Source: U.S Energy Information Administration, International Lloyds List Intelligence

India mainly depends on Middle East for crude oil but it imports considerable amount of crude oil from Angola, Nigeria, and Venezuela. It also import from Algeria, Egypt, Brazil, Azerbaijan, Libya, Malaysia in lesser amount.

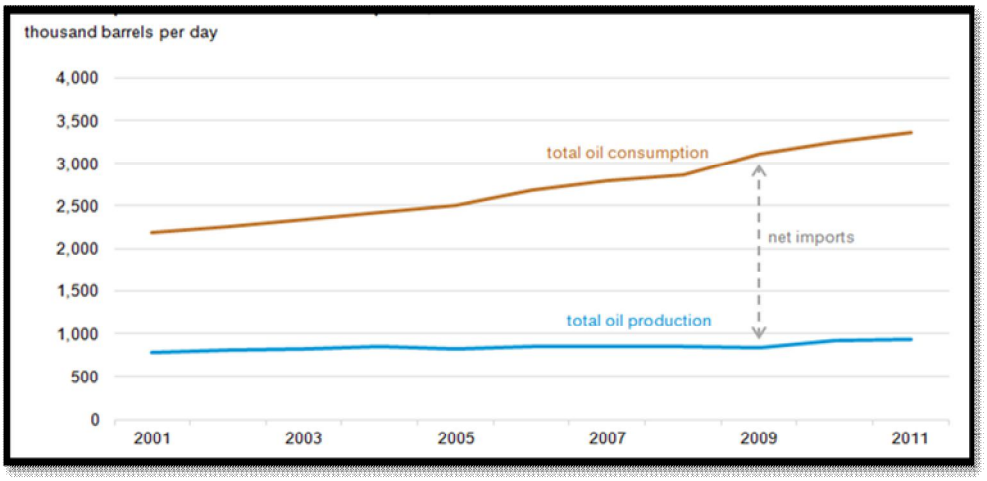

Figure: 2 India's Natural Oil Production and Consumption, 2001-2011
Source: U.S Energy Information Administration, International Energy Statistics.

Traditionally natural gas did not use for vehicles in India, now Indian Government is encouraging mix consumption of oil and gas to reduce pollution in cities and gas based thermal power sector. According to the Oil& Natural Gas Journal at the end of 2012 India has 43.8 trillion cubic feet of natural gas reservoir, mostly off-shore (70 percent). Production of gas has been increased after the

exploration of Krishna – Godavari Basin (K-G Basin) in 2002. However, in present time the rate of production has declined with short fall of production from D6 field of K-G basin. In 2009 March, production from this field was about 6 billion cubic feet/day and in 2012 it experienced only 1 billion cubic feet/day. [*U.S Energy Information Administration, June 26, 2014*] India has started to import LPG from Qatar (Qatar's Rasgas has signed a contract to supply 360 billion cubic feet LPG) in 2004; in 2011 it has become six largest importers of LPG. With shortfall of production of K-G basin, now India has to find gas sectors in abroad. Before, 2004 India's natural gas consumption was just equal to its' domestic production, after that import has been increase with domestic demand in power and fertilizer sectors (fig: 3).

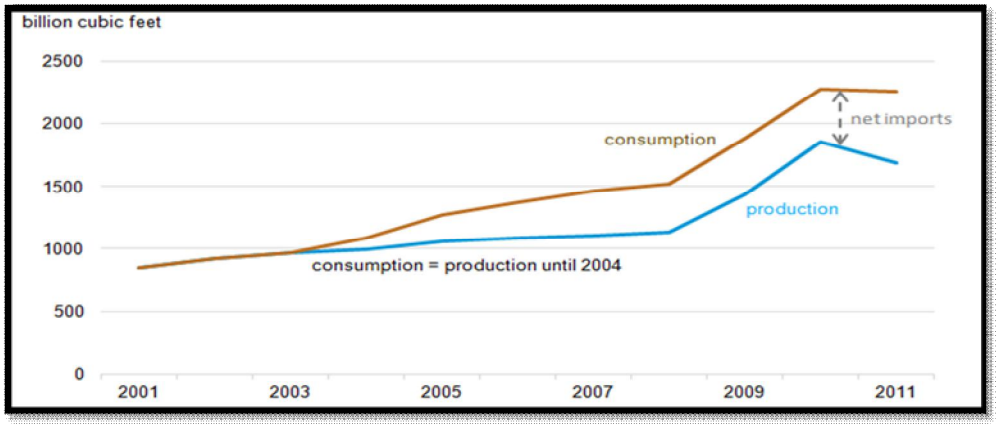

Figure: 3 India's Natural Gas Production and Consumption, 2001-2011
Source: U.S Energy Information Administration, International Energy Statistics

Presently, power generation is a key factor for rapid industrialization and urbanization in India. Environmental friendly power generation is major concern and in this scenario gas based thermal power is being produced in West India. North and South India are also experiencing the same. Among the forty two Gas Thermal Power station of India ten are located only in Gujarat. [Central Electricity Authority 2012.07.31] Government of India is encouraging mix consumption of natural oil and gas. Gas based vehicles are being launched by the car companies and in metro cities Auto rickshaw; buses are being run with CNG. So, domestic gas market is booming and India has to think broadly for uninterrupted supply of Natural Gas. Moreover, as an agro based economy India is very much depended on Egypt, Saudi Arab and Iran for Urea because it has no significant natural gas production. Huge amount of foreign currency is spent for importing natural oil, gas and fertilizers in each financial years.

In 2005 Government of India decided to make strategic storage of 37 millions of crude oil at three places, Visakhapatnam, Mangalore and Padur. The Indian Strategic Petroleum Reserves Limited (ISPRAL) yet has not achieved the goal. However, in 2011 the Govt. again planed to reach a crude reserve capacity of 132 million barrels by 2020. [U.S Energy Information Administration, March 18, 2013] However, India is not self sufficient in crude oil production but it is boosting refining capacity and would be leading exporter of petroleum products. Govt. of India is encouraging energy companies to invest in refining sectors to take the benefit of strategic location. India is located in between Middle East and Pacific regions so it could be exporter in petro goods. In 11th plan, the Govt. of India took a goal to make India as a global petroleum product exporting hub. According to the Oil& Natural Gas Journal at the end of 2012 India achieved the capacity to refine 4.3 million barrel/day. Now India is the third largest refining capacity after China and Japan. Reliance has set up two refineries at Jamnagar with capacity of 660 thousand barrel/ Day and 580 thousand barrel/ Day and Essar oil established a refinery at Vadinar with capacity of 405 thousand barrel/ Day exclusively for export purpose to Singapore, UAE and Indonesia. Reliance has a plan to export U.S market too and it leased a storage space in New York harbor. [U.S Energy Information Administration, March 18, 2013]

So, it is clear that to enhance the strategic storage of crude oil and to enhance the gas based power, fertilizer sectors; India needs continue supply. India also has to reduce its' dependency over politically instable Middle East. Latin American and West African nation are far away from Indian coast line and they won't be good alternative. In this situation, Central Asia, extended neighbor of India, could be an alternative. These countries are close to India, bountiful of Petro-Reservoirs, could be joined with pipelines.

5. Petro Potential of Central Asia

Central Asia is the core of the Asia, stretched from Caspian Sea to China in the East and Afghanistan in the south to Russia in the north. There are five countries and all are post Soviet space. These five states are Kyrgyzstan, Turkmenistan, Tajikistan, Uzbekistan, and Kazakhstan. With the fall of Soviet Union these countries have been evolved as indigenous states. All these, states are land locked, far away from sea access. In spite of this obstacle they could transform their economy using their petro-potentiality (Table: 1). Kazakhstan is the only state which is bountiful in both natural oil and gas. Whereas, Turkmenistan has one of the world highest natural gas reservoirs and Uzbekistan also has satisfactory reservoir of natural gas. Transforming Petro wealth by pipe lines towards Europe, East Asia and South Asia, these countries can meet the goal of 21st century.

Name of the Country	Natural Oil Reserve in Billion Barrels	Natural Gas Reserve in Trillion Cubic Feet
Kazakhstan	30.0	45.7
Turkmenistan	0.6	618.1
Uzbekistan	0.6	39.7
Kyrgyzstan	0.4	0.20
Tajikistan	0.01	0.20

Table: 1 Proved Reserve of Natural Oil and Gas of Central Asia States at end of 2012
Source: Indian Petroleum & Natural Gas Statistic 2012-13 & U.S Energy Information Administration, International Energy Statistics

6. India's Central Asia Policy, Limitation and Challenges

In present condition India is becoming a global leader and facing scarcity of energy materials. India's recent foray towards Central Asia is for hunting energy like China. So, India's energy ambition is directly clashing with China. As per recent study of International Energy Agency (Understanding Energy Challenges in India Policies, Players and Issues, IEA 2012), after 2020 India's per day petroleum consumption would be reached .5 million ton to .7 million ton and gas needs would be 51 billion cubic meter per day after 2015. Presently India is the sixth largest energy consumer and could be ranked third within 2030. It gets 64 percent crude supply from Middle East but for future energy security Indian government must concentrate over Central Asia. There is satisfactory petroleum reservoirs in Central Asia, basically in Kazakhstan and Turkmenistan.(table: 1) which could be useful to India. India's economic interest is not only in Natural oil and Gas of this region but also in other valuable minerals. India is also interested in Central Asian market for its' finished goods.

India has lately started strategic and economic relations with Central Asia than Russia, China and U.S-European Union. Now India has to face strong challenges from these Global Giants to establish itself in Central Asian Energy field. However, it had warm cultural relation with Central Asian Nations during Cold War as it was closely associated with Soviet Union. After the fall of Soviet Union China, U.S- European Union tried to strengthen their presence in Central Asia with common interest i.e. harnessing petro wealth. Russia has great interest in Central Asia as it was former Soviet territory, but presently China is playing vital role in hydro carbon sector of this region. Until 2005 these Central Asian States were largely depended on Russia for exporting their petro goods. But this scenario has been changed after introducing of Kazakh-China oil pipeline (2005) developed by joint consortium of China National Petroleum cooperation and Kaz-Muanay Gas Company, Turkmenistan-China gas pipeline. These pipelines are running from different areas Turkmenistan, Uzbekistan and Kazakhstan to Xinjiang of China directly. [*Du Ruoxi*, 2011]

In 1992 U.S Congress passed Freedom Support Act (FSA) to provide assistance for five newly independent states of Central Asia and it passed 'Silk Road Strategy Act' in 1999 (modified in 2006). [*U.S. 'Silk Road Strategy Act*, 2006] Moreover, in 1994 Kazakhstan, Uzbekistan, Tajikistan, Kirgizstan joined NATO's Partnership for Peace (PFP) program and 2002 Turkmenistan joined in this program. However, the central Asian Nations have not joined oil and gas field with Europe. But U.S and NATO are encouraging them to create a Trans – Caspian pipeline to link up with Baku-Tilibisi- Ceyhan pipe line avoiding Russia. [*U.S. 'Silk Road Strategy Act*, 2006]

In early nineties India recognized Russia as sole authority of security and stability in Central Asia due to its' closeness with Russia. In such way India lost early opportunity to create economic relation with this region. This situation was changed gradually after the implementation of liberalization policy in Indian economy. Indian policy makers realised the energy potentiality of Central Asian Countries. In the mean time, Central Asian Nations and India have come close due to Afghan issue. These countries are well influenced by Iran, Shia hegemony and they used to support Northern Alliance against Talban Militia like India in later nineties and onwards. India has taken this opportunity to create distance between Pakistan and Central Asian Nations. But India's main obstacle in Central Asian Strategy is the absence of direct access (fig: 4) and it has limited participation to their market. Actually, there is a harmonic bilateral relationship between Central Asian states and India but they have to take initiatives for effective economic and political relations.

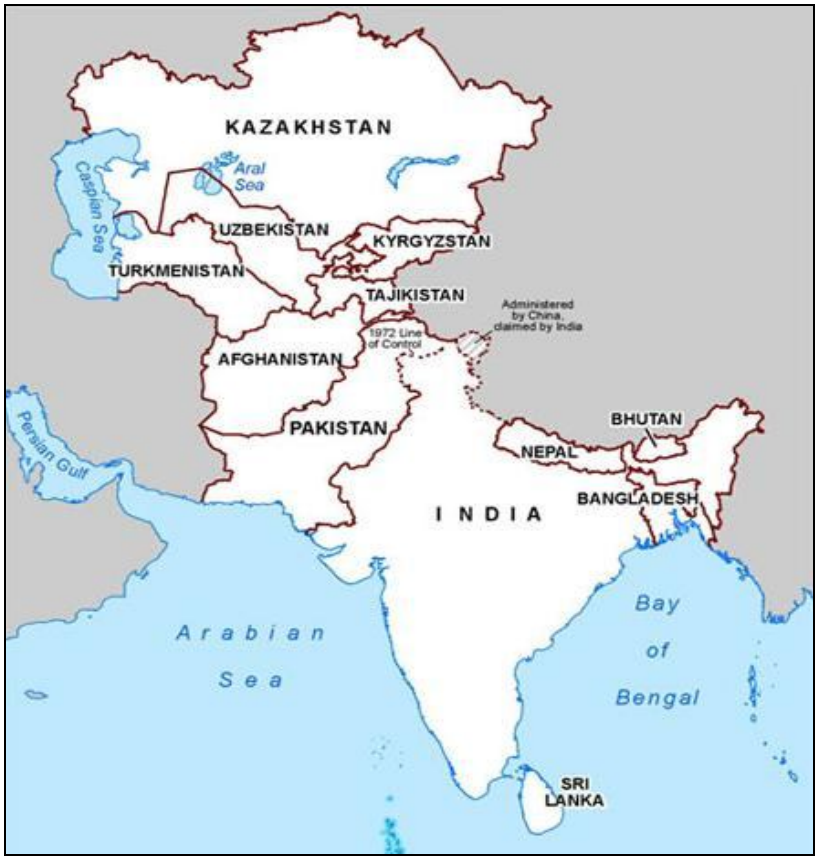

Figure: 4 Land Lock Central Asian Nations and India

7. India's Participation in Central Asian Energy Field

It is true that India has limitations in Central Asian policy due to absence of direct land access and it is facing strong challenges from China in this region. In spite of that several initiatives have been taken by India. ONGC has got the hydro-carbon exploration right of Caspian Sea coast in Turkmenistan and it has also limited presence in Uzbekistan for same reason. But in 2005 India lost to China in the bidding for control of petro-Kazakh of Kazakhstan [*Sahgal Arun & Anand Vinod,* 2010]. Now, India is very much interested in Turkmenistan-Afghanistan-Pakistan- India (TAPI) pipeline projects (fig: 5) which will supply Caspian Sea gas of Turkmenistan towards Pakistan and India through Afghanistan. Asian Development Bank is playing important role in this project and Indian cabinet allowed GAIL to sign Gas sell and purchase Agreement with TurkmenGaz, Turkmenistan's national oil company. [*The Gazette of Central Asia (Satrapia).* 2012-05-18] Though Indian presence in energy sectors in Central Asia is not satisfactory in respect of China but a few Indian company have competed with Chinese companies. For example, Punj Loyd has gained bids for building crude oil pipeline in Kazakhstan, Jagson-Oil, a subsidiary of Indian Jagson International Limited invested over1million $ US for marketing petroleum products and own fueling stations in Osh region of Kirgizstan [*Sahgal Arun & Anand Vinod, 2010]*. GAIL, ONGC have signed several MOU with these countries for exploration oil and gas but they will have to bid out Chinese companies for stake right in future. With the improvement of bilateral relation with Kazakhstan, India got assurance for joint exploration of Uranium. Kazak authority committed that it will supply 2000 tons of uranium by 2014 [*Energy Daily,* January 16, 2009] and ONGC will get 25 percent stake in Satpayev oil field in Caspian Sea [Gateway House, 28 April 2011]. However, due to absence of reliable and secure land route, these natural oil-gas and uranium will not reach India directly.

Figure: 5 TAPI & IPI Pipe Line Projects
Source: Eurasian Energy Agency, 2012

8. Conclusion and Suggestions

India is a vast nation. India's unity and sovereignty could be hampered with insufficient supply of hydro-carbons. Long term energy assurance is also very important for India to maintain economic and political influence in global scenario. Now, India is moving towards mix consumptions of Natural oil and gas like other developed nations to check pollution rate. India is one of the biggest importers of Hydro-Carbon in the World. India has direct access to Middle East and it has great dependency on this region for Crude Oil and it has very limited supply chain of natural gas. It mainly imports Natural Gas from Qatar as India has signed a contract with Qatar's Rasgas to supply 360 billion cubic feet LPG. Except this India has no significant gas assignment with any other country. Still there is no positive sign for natural gas of Bangladesh, Myanmar due to political instability. More over domestic production is decreasing with fall of production from D6 field of K-G basin. In present context, natural gas is also used in India for thermal power in those areas which are away from coal mines. Moreover, with secure supply of natural gas India could be self sufficient in Urea production and can save foreign money. In financial years 2012-13 India has imported 8.04 million ton of urea. [The Hindu 21st February 2014] In this context Central Asian States mainly Turkmenistan, Kazakhstan, Uzbekistan could be a new avenue to India. To get this hydro-carbon India has to overcome some serious problems and geo-strategic challenges;

- India has no land access with Central Asia Nations. In present condition, Pakistan won't allow India to use its' soil to get access in Central Asia. So, India has to create an alternative route by passing Pakistan. India can use Afghanistan as strategic bridge as it has friendly relation with Afghanistan. Now, India is one of the contributors in infrastructural development of Afghanistan since 9/11 events. India has invested a lot in transportation, power, and health sectors of Afghanistan for improvement of bilateral relations. After the withdrawal of U.S lead NATO force, India could play vital role in transformation of modern Afghanistan. India is also interested on huge mineral deposits of Afghanistan especially iron ore of Hajigak in Bamiyan province. But Afghanistan is also a land- lock Nation.

  So, India is trying to use Chabahar port of Iran as gate way to Central Asia. The Chabahar (25°17'28" N and 60°38'15" E) Port is located south of Sistan-Baluchistan province of Iran in Oman Sea and it is just 375 km away from Strait of Hormuz. It is the only Iranian deep sea port that provides direct access to Indian Ocean avoiding the Persian Gulf. India began developing Chabahar port in 2002 and it has invested 100 million US dollar. However, until 2012 India postponed the development of the port due to U.S objection and economic sanction. But when Chinese authority took control of Pakistani port Gwadar in 2012, India resumes the work of Chabahar port overriding U.S objection. [Tanchum Michael, 2014] New Delhi has completed a 200 km high way from Iranian border town Zarnanj to Delaram of Afghanistan and it has also assisted Iran to complete Iranian road portion which will join Chabahar from Zarnaj. India also has planned to lay down a parallel 1900 km railway from Chabahar to Hajigak of Afghanistan. [Tanchum Michael, 2014].This road and railway network will not only help India to access the Central Asia (fig: 6) but also improve Indo-Afghan bilateral relation. After, commissioning

this port, road and rail network, India could easily to reach Central Asia through Iran and Afghanistan. So, Central Asianpetro goods could be transported to India without Pakistani interruption.

Figure: 6 Port Chabahar and Road Network from Chabahar to Delaram via Zaranj
Source: http://mrunal.org/2012/08/diplo-delaram.html & Google Earth

- Turkmenistan-Afghanistan-Pakistan- India (TAPI) pipeline project is very important for transmission of Central Asian Natural Gas to Indian market. But there is big question mark on this project as because it will come through Pakistani soil. Yet now Pakistan has not completed IP (Iran –Pakistan) pipe line of own portion due to U.S opposition and immense Saudi pressure. Iran has already built 900 kilometers of the pipeline on its own portion and is waiting for the 781-kilometer Pakistani side of the pipeline to be constructed. Now; the Iranian authority has announced plans to withdraw the IP pipeline project as Islamabad is going to cross deadline of the project within December 2014. [FARS news agency 9th April 2014] Moreover, Iranian authority will penalize Pakistan $ 200 million a month if Pakistan miss the target. Though, initially it was Iran-Pakistan-India pipeline project but after the agreement Civil Nuclear Deals with U.S, India kept itself away from the project in 2009. Now, Teheran is interested in Iran-Oman-India (IOI) pipeline with the fall of IP pipe line project. Indian Foreign Minister Salman Khurshid, Omani Minister for Foreign Affairs Yousuf bin Alawi bin Abdullah and Iranian Foreign Minister Javad Zarif met in New Delhi on February 28, 2014 and discussed the deep sea project of IOI gas line at estimated cost of $4-5bln by putting aside Pakistan.[FARS news agency 9th April 2014]
  In this context, India can take initiative to bypass Pakistan for TAPI pipeline too and make this pipeline project as Turkmenistan-Afghanistan- Iran- Oman-India (TAIOI) pipe line (fig:7). In this project, Pipeline from Turkmenistan will come through Afghanistan, Iran. From Iran it will be under sea pipeline and joining Oman's pipeline it will touch Gujarat (Near Porbandar) and Maharashtra (near Mumbai) cost of India. From Porbandar and Mumbai it could join domestic pipelines of India. In future, this pipeline could be further extended towards Uzbekistan and Kazakhstan. In this way Central Asian Gas could be easily transmitted to India by passing strategic rival Pakistan and India also will get natural gas of Iran and Oman from same pipe line.

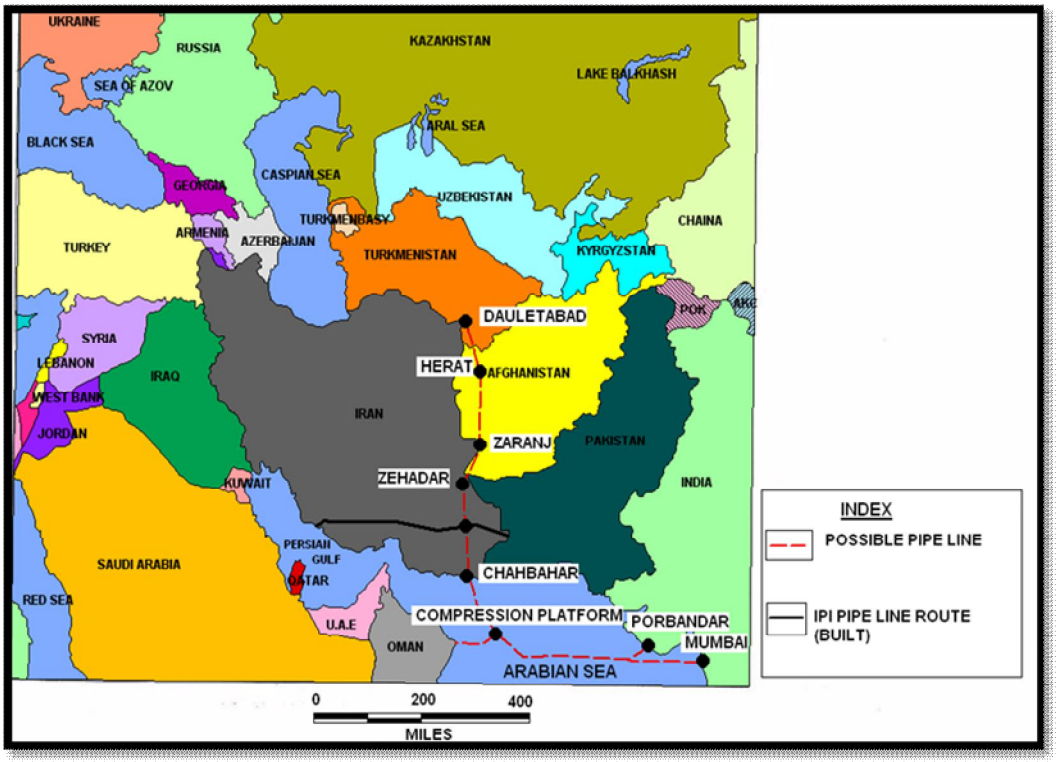

Figure: 7 Possible TAIOI Pipeline.
Source: Author.

- It is also very important for India to take effective policy for Central Asia. India was closely allied with these Central Asian states as they were Soviet Space. This relation has been strengthened due to Afghan issue against Taliban Militia in support of Northern Alliance. India has also very good cultural exchange program with these countries. So, there is scope for India to participate in hydro-carbon sector of Central Asia. Though, India-Iran –Russia are closely aligned for their own strategic needs but after the Civil Nuclear deals agreement with U.S, India has moved away from Tehran in 2009 and onwards. Without Iran's help India could not access Afghanistan as well as Central Asia. So, India has to overcome U.S pressure on Iran issue and develop an effective axis of strategic relation with Oman, Iran, and Afghanistan to access Central Asia. Russia, India's most reliable strategic partner has also same interest as India in Central Asia. But it could not hamper bilateral relation with Russia. Now, Russia is enough lagging behind in Hydro Carbon deals in this region due to Chinese aggression and Russia is trying to get back its' lost position. India can take this as an opportunity and start joint initiatives with Russian Companies to overcome Chinese monopoly. So, India can use Iran-Oman-Afghanistan to bypass Pakistani soil to reach Central Asia and Russia to overcome Chinese aggression.

9. Used Abbreviations

- CNG- Compressed Natural Gas
- EU- European Union
- FSA- Freedom Support Act
- GAIL- Gas Authority India Limited
- GIS - Geographical Information System
- IEA- International Energy Agency
- IPI- Iran-Pakistan-India
- IOI- Iran-Oman-India
- IP- Iran- Pakistan
- ISPRAL- Indian Strategic Petroleum Reserves Limited
- K-G – Krishna-Godavari
- LPG- Liquid Petroleum Gas
- MOU- Memorandum of Understanding
- NATO- North Atlantic Treaty Organization

- OPEC –Organization of Petroleum Exporting Countries
- ONGC- Oil and Natural Gas Commission
- PFP- Partnership for Peace
- TAPI- Turkmenistan-Afghanistan- Pakistan- India
- TAIOI- Turkmenistan-Afghanistan- Iran-Oman-India
- U.S- United States

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