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INDIA'S ENERGY SECURITY: CHALLENGES & PROSPECTS

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ABSTRACT

This Paper attempts to explore the contemporary Energy situation in India. It take account of India's present Oil & Gas production scenario and explore the dependency on foreign import of Oil & Gas for its growing Energy demand. The paper also attempts to explain the present on-going energy crisis and find out the energy alternatives apart from Middle Eastern Region. As the continuous disruptions in the Middle East Region, Indian Leadership ventured towards other alternatives to secure the Oil & Gas imports to meet its energy demands. Africa turned out to be a great energy alternative for India with its vast potential and newly discovered oil fields in Nigeria, Sudan, Algeria Libya etc. it suddenly become a hot topic of discussion and interest among powerful nations of the world. Keeping in context of the historical relationship of India with Africa, it paved the way for India to venture into African market. Political leadership has played a definitive role in bringing two nations together with focus on oil partnership among these two nations. In terms of energy consuming, India is at the sixth position in the world. India's dominantcommercial fuel is coal (55%). Other energy sources are oil (31%), natural gas (8%), hydro (5%)and nuclear (1%). Due to limited domestic resources of oil and gas on the one hand, and rapidly increasing demand on the other hand, India is dependent on foreign energy supply.[1]

In the beginning of the 21st Century, India had the second highest oil demand growth after China. The country currently imports 85% of its oil and this share is expected to pass 90% by 2030[2].

By the end of the first half of this century, India is expected to become one of the top five consumers of petroleum products, ahead of developed countries like France and the UK and just behind Russia and China. According to the Oil and Gas Financial Review, "by the year 2021, China and India are expected to have overtaken Japan as the two largest consumers of primary energy, followed by South Korea, Indonesia and

Taiwan."[3] Infact, the approximate projected

[1] Mathur T. Das C. and F.J. Richter (2005), India Rising, p.134.

[2] "External Policy and Oil Security", Vision 2025 at http://.pi.energy.gov/Indo-USconference/vision2025.pdf accessed on 25th July 2013.

[3] Kanai, Hirofumi and Gainer Kwan (1997), Future Market of LNG in Asia cited in Michaela Crissell (eds.) International Oil and Gas, Financial Review, p. 108

growth of oil consumption of India is even higher if compared to China; India is at 4 percentwhile on the other hand China is at 3.3 percent.[4]

1.1 India's Energy Situation

India with having a growing economy and expecting a GDP of 8%-9% in the upcoming years, desires a continuous demand of energy.[5] This is a result of India's growth in recent years which creates the high demand of energy. Energy security is often been linked with securing of access to continuous oil supplies for long-term development of any country. With an increase in the use of natural gas, security concern also arose for natural gas resulted in widening the concept to cover other sources of fuels.

In 2008-09 India imported about 128 MMT crude oil worth US$ 75 Million. At present, India is the second largest oil importer in the world after China with a total of 210.4 metric tons surpassing USA, Canada and rest of the developed countries. According to a report by IEA (International Energy Agency), "India needs to invest a total of 800 billion dollars in various stages by 2030 to meet its energy demand. India accounts to around 2.4% of the annual world energy production, but on the other hand consumes 3.4% of the world energy supply. Andthis imbalance is estimated to surpass Japan and Russia by 2030 placing India into the third position in terms of annual energy consumption."[6]

[4] "External Policy and Oil Security", Vision 2025 at http://.pi.energy.gov/Indo-USconference/vision2025.pdf accessed on 25th July 2013.

[5] Anil Kamboj (2013), "Energy Security: Indian Perspective", World Focus vol.399 March 2013 p.18.

[6] * IEA, Findings of recent IEA work 2005, p.67.

1.2 India's Internal Oil Production

There is a vast gap between India's oil consumption and its production. While with the domestic production of crude oil standing only at just 28.4 MMT in the year 2022, contributing only 1 percent of the world's total oil output, the bulk of India's energy needs are satisfied mostly outside India.[7] Domestic production is expected to remain constant, if not decline, in upcoming time. "There have been a few new discoveries, but production from these fields is merely replacing that of older oilfields. Thus, while oil is expected to account for a smaller portion of India's energy supply, India is likely to import a greater portion of the oil it does use. In 2004 India imported 68 percent of its oil which now stands at whopping 85% as of today."[8]

Today, 65 percent of oil requirements are being met from West Asia, and with the problems goes on with West Asia there is a need to diversify its oil import from West Asia to a nearby and secured alternative source.

While the domestic oil production has now decreased from 39 to just 28.4 million metric tonnes, the domestic consumption has multiplied from 55 to 210 mmt. At the time of opening up of its economy, India was importing 50 percent of its gas and oil needs, but during last fifteen years India's dependence on import of gas and oil has increased to nearly 77 percent. 'India has significant reserves of coal; it is relatively poor in oil and gas resources. Its oil reserves amount to 5.9 barrels,[9] only 0.5 percent of the total world's oil reserve. India imports nearly 85 percent

[7] Ibid., p. 6.

[8] BP, BP Statistical Review of World Energy (June 2005), p. 37.

[9] www.meet-asia.com accessed on 28.09.2012.

of its oil needs, much from the Middle East Region because of the stagnated domestic crude production.

"India's dependence on foreign oil is longer standing than that of China. India either buysits oil through spot purchases (for example, from Nigeria), short-term contracts (generally of three months) or longer-term contracts (of a year, for example, from Saudi Arabia). It imports its oil mainly from the Middle East, which in 2004–05 was the source of roughly 65 percent of India's foreign oil purchases. India's largest oil suppliers are Saudi Arabia (providing 25 percent), Nigeria (15.7 percent), Kuwait (11.9 percent), Iran (10 percent) and Iraq (8.7 per- cent)."[10]

Natural Gas - India is a latecomer in the use of natural gas. In the 1970s and 1980s, it doesn't even accounted as a part of Indian energy consumption; the use of natural gas on regular basis has been risen after the Bombay High field went into production in 1987. Most recently it accounts for about 29 mtoe, contributing just about 8 percent of India's total commercial energy consumption. While the International Energy Agency (IEA) estimates that by 2020–30 Indian oilconsumption is expected to grow at the rate of 2.9 percent per year, it expects that the use of natural gas in India to grow at a rate of 5 percent a year in the same period.[11] By the year 2030, natural gas is expected to be accounted for more than 10 percent of India's energy consumption.

"To ensure energy security various risks are to be handled. The threat of energy security not only arises from the lack of supply, but also due to the uncertainty of availability of imported

[10] Expert Committee on Energy Policy, Draft Report, p. 63.

[11] BP, BP Statistical Review of World Energy (June 2005), p. 3.

energy."[12] "As the major sources of energy are imported, there is a threat due to lack of storage facilities in India. The major part of crude oil is been imported and there are hardly any steps taken for its storage. During the economic crisis, India may suffer from shortfall of crude oil for refining and will eventually purchase it at higher prices leading to decline in country's economy."[13]

Demand for energy is rising worldwide and in India. Rising demand is caused by several factors, one of them being sequential industrialization. Sequential industrialization refers to one- by-one industrializations of the countries in the world.[14] As we know, successful industrialization results in increased economic growth and thus increased energy demand. After the industrialization of Great Britain, the European continent and the United States, it was China and India's turn to industrialize. As such they account for a significant proportion of increasedenergy demand during the last decade.

By the above discussion it is now clear that how the demand for energy, especially for fossil fuels, has increased and is projected to increase. This increase only leads to scarcity if supply cannot keep up with demand. As such, it is important to assess the available supply. In this subjection, we will discuss dwindling stocks, the geographical distribution of supplies and Indian dependency on foreign imports.

[12] See https://www.ukessays.com accessed on 13.06.2013.

[13] Ruchita Beri (2003), "India's Africa Policy in the Post – Cold War Era: An Assessment", Strategic Analysis, vol. 27,no. 2, April – June, p.224.

[14] Mehdi Parvizi Amineh and Henk Houweling (2010), 'China and the Transformation of the post-Cold War Geopolitical Order' in State, Society and International Relations in Asia (eds.), Amsterdam: Amsterdam UniversityPress.

1.3 India's Efforts to meet the Energy Security

India pursues a holistic approach to meet its energy requirements, harmonizing commercial economic, development needs with geopolitical, military and strategic interests. While India remains heavily dependent on coal for energy generation, transport barriers, health and environment concerns from coal usage have prompted India to adopt a multi-pronged approach towards meeting its energy requirement. This includes diversifying the types of energy uses, including growing consumption of oil, natural gas, nuclear power and renewable power along with improvement in energy efficiency and conservation. With regard to oil and gas, India has diversified sources by increasing indigenous exploration and growing imports from number of regions and making significant investments in equity oil.[15]

India's vision of energy security thus aims, "to meet reliably the demand for energy services of all sectors

including the lifeline energy needs of vulnerable households in all parts of the country, with safe and convenient energy at the least cost in a technically efficient, economically viable and environmentally sustainable manner."[16] The broad vision behind such energy policy is to have access to the guaranteed supply of such energy resources and technologies at all times without fail, considering the shocks and disruption that can be reasonably expected is essential to providing energy security to all. At its broadest level, India's energy security has to do with the continuous availability of primary commercial energy at an affordable price. Therefore, India has adopted a very balanced energy security strategy to meet out its energy needs.

[15] Arun Mohanty (2013), "Russia in India's energy security strategy", World Focus, vol. 399 March 2013, p.32.

[16] See www.indiaenergycongress.in, The Economist Intelligence Unit, "Empowering growth perspectives on India'senergy future". P.10, www.managementhinking.edu.com/sites/dc, accessed on 01.03.2013.

Strengthening ties with existing energy supply sources, most obviously with the Middle East countries. For that reason, India needs to revisit its relations with Iran which supplies almost 12% of India's oil imports from abroad and to see them actively maintained.[17] India must work with the secular and democratic forces in the region as also the dominant world powers which have vast stakes in the region to maintain security and stability so very essential to protect our vital interests and also to prevent the spread of violence and terrorism from this volatile region to India in future. Hence India needs to enhance its interaction with the countries to seek greater role in cooperation with the states vital to our interests especially to enhance our energy security. India should actively encourage the process of political change and modernization because once the Arab regimes become democratic and responsive to popular demands, not only their legitimacy would be enhance but more significantly their dependence on outside states especially the US would come down and this may lead to reduction in outside military and political intervention which has periodically undermined peace, security and stability in the region thereby adversely affecting India's interests as well.

As India's appetite for energy grows, concern about how its energy needs are going to be satisfied has been increasing in the country. This concern stems from India's inability to fulfill the demand for energy from domestic sources, causing Indian companies and officials to look increasingly abroad to meet its requirements.

In the new era of globalization India's foreign policy acquiring an economic orientation. As a result, India's foreign policy makers has been regularly driven towards finding markets, attracting foreign capital and knows – how. Until 1990s the Francophone African countries remained the unexplored part of Indian economic strategy. However, the big leap in Indian

[17] Mathur T. Das C. and F.J. Richter (2005), India Rising, p.134.

thinking occurred in the 1990s when it stopped seeing these countries in terms of the old third world agenda of decolonization and non – alignment. Issues such as disarmament and non – alignment that had brought the two regions together took a backseat in this era of globalization. The recent Indian efforts are about plugging a huge gap in India's strategy of intensifying political and economic contact with these countries. In the 1990s, with a fast globalizing world and the change in the profiles of India and Francophone African countries, Indian foreign policy took new initiatives to rope in them in its new drive for economic and strategic cooperation to achieve the developmental goals.

Now India is a fastest growing country in the world and for any growing economy, there are so many things require for its development like raw materials, natural resources, energy source and market etc. And India also needs such those things, that's why India looks towards Africa for its needs. The very first thing which India wants from Africa is energy because it isthe most essential thing for any country for its development and India has very limited sources of energy and that sources are not enough for India's development requirements. Energy will be theprimary focus of India's Africa policy. According to Pham, "India's Africa strategy is based on the quest for resources, business opportunities, diplomatic initiatives and strategic partnerships', which is seen in the emerging trade, investments and developmental assistance relations that Delhi is crafting with African countries."[18]

Energy is an essential input for sustaining and enlarging the economic development ofany country. There are different types of energy resources in different region of the world andthe energy mix at any region depends on several factors such as the level of development,

[18] www.chathamhouse.org cited in Fantu Cheru & Cyril Obi (eds.) (2010), The Rise of India and China in Africa,London/New York: Zed Books .

technological advancement, environment consideration and availability of domestic resources. In India commercial sources of energy have gradually replaced commercial sources with the gradual modernization

of the society. The Government of India has come out with a statement in 1999 of its Hydro Carbon vision till 2025 which reassesses India's contemporary energy regime and redefines its parameters in the context of long term supply and demand matrix.

Above mentioned domestic constraints forces India to import oil from other countries of the world.

1.4 India's Dependency of Foreign Oil Imports

Most of the oil requirements of India is being fulfilled by Gulf. "Saudi Arabia is India's largest supplier of crude oil, meeting 25% of its annual requirements."[19] Following the visit to India of King Abdullah bin Abdul Aziz in January 2006, "the two countries have agreed to transform their present commercial ties into a 'strategic energy partnership' through investments in each others' downstream and petrochemicals projects, as also through India's participation in Saudi Arabia's upstream proposals in the gas sector."[20]

India has been enduring its interests in Gulf and the Arab region. Additionally, Gulf and Arab Peninsula are the major source of India's crude oil needs, providing over two-thirds of annual imports. Thus, the security of oil facilities and of the sea routes is an important aspect of securing India's long-term energy security interests.

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[19] D. Sharma & D. Mahajan (2007), "Energizing Ties: the Politics of Oil", South African Journal of InternationalAffairs, special issue: India in Africa, vol. 14, no. 2, pp. 37-52.

[20] Ibid.

1.5 Turmoil in West Asia

To better understand the need of diversification of India from West Asian countries, we need to look back into the time. Few incidents occurred in the last three decades have led to major supply disruptions from West Asian Region.[21] The oil embargo of 1973 lasted for six months at the height of which the net loss of supplies was 4.4 million barrels a day (mbd) for India.[22] This has caused the uncertainly about the future supply of oil from this region, led to panic buying by many other Countries, further increasing the shortage of

oil.

Further, it was supplemented by Iranian revolution in 1978-79 which removed about 3.7 mbd of oil for six months for India. Later, a strike by the oil workers in the country resulted in shutting down the production and halted the exports to other countries including India. Later, in September 1980, Iraq invaded Iran, causing yet another disturbance in the Region. This all resulted in upward increase on the oil prices, which rose from US$ 20 per barrel to US $ 35 per barrel in January 1981.[23]

Later, in August, 1990, Iraq invaded Kuwait causing another oil embargo. The matter was later sort by the collective invasion of 26 countries following United States under United Nation's 'çollective security' cause. Apart from these embargoes – imposed either by the producers or by the borrower – there are many other considerations that had influence security of energy supplies from the region. "The entire region is criss-crossed with oil pipelines and dotted

[21] D. Sharma & D. Mahajan (2007), "Energizing Ties: the Politics of Oil", South African Journal of InternationalAffairs, special issue: India in Africa, vol. 14, no. 2, pp. 37-52.

[22] Ibid, p.38.

[23] M. T. Freund et. Al. (1995), Annex: Identifying Future Courses for Crisis. In Patrick L. Clawson (eds.), Energy and National Security in the 21st Century, Washington, D. C.: National Defence University Press, pp. 151-184.

by oil and gas fields handling facilities, and export terminals in the Gulf and in the Red Sea. All these facilities, which enable the governments to pump enormous amounts of oil everyday, have always been potential targets for anyone intending to inflict damage on the rulers or their trading partners-cum guarantors." [24]

Since last oil embargo in 1990s, there have been reported more than 80 attacks on Iraqi oil facilities, mostly and frequently on the pipeline from Kirkuk to Ceyhan.

Roughly 90 percent of global oil is transported by sea today; and oil tankers are the weakest link in the oil chain supply. An oil tanker usually have a length of aroung 250 meters approx. with a normal speed of 14 knots per hour. Short of shooting and sinking the boat, the tankers are mostly the sitting ducks in the sea. Sea-borne commerce is vulnerable on a second count as well, today there are around 1.2 million seafarers in the world. Saboteurs could infiltrate them any time with intentions of hijacking the tankers or carrying out piracies or suicidebombings to completely destroy them.

India is a fast growing giant that faces the crucial challenge of meeting its rapidly increasing demand for energy.

India faces two major problems concerning its energy imports; the first is heavy dependence on imports from the Middle East; and the second is India's tensed relationship to its neighbouring countries. Concerning the first problem, as it was mentioned before, the largest part of Indian oil and gas imports comes from the Middle East. Apart from harbouring the world's greatest oil reserves, imports from the Middle East are favoured by the low transport costs due to geographical proximity. Nevertheless, as it is the case for China, the political instability of the

[24] Ibid, p.152.

region and the high competition from other importing countries force India to seek other sources of supply.

This quest for diversification of imports is partly hindered by the second problem. Theoretically, India is geographically well-placed for oil and gas imports from the Middle East, Central Asia and Southeast Asia.[25] Nevertheless, the geopolitical situation in South Asia must be taken into account: Difficult neighbour relationships are challenging India's energy security because they hinder imports transported over-land. In the first place, tensions with Pakistan complicate India's energy cooperation with Iran and Central Asia. The dispute has blocked in particular gas pipeline projects from Iran or Turkmenistan to India.

Concerned more about its growing dependency of oil from the Persian Gulf -65% of its energy needs – India is in a need to follow the footsteps of other major oil-importing economies of the world by seeking supplies

from elsewhere. With growing energy needs, India may be forced to settle disputes and improve relations to its neighbours. In the meanwhile, however, India opted to establish ties to more remote regions in order to secure its energy supplies, namelyin Africa, Latin America and Australia.

In recent past terrorism and the increased activities of sea pirates in supply sea lines have increased the apprehension of Government of India. With these problems India cannot depend only on West Asia for its energy requirements therefore, Indian policy makers decided to find an alternative source of energy for the long-term interest of India which is dependable in terms of supply without any disruptions for long-term and Africa has become the first choice for India in

securing energy.

[25] D. Sharma & D. Mahajan (2007), "Energizing Ties: the Politics of Oil", South African Journal of InternationalAffairs, special issue: India in Africa, vol. 14, no. 2, pp. 37-52.

1.6 India's Growing Energy Needs

It is no wonder that India with an economy growing at the rate of over 5 percent a year[26] for the next 25 years—has developed an enormous appetite for energy. By the year 2022, India has already became the second largest Oil consumer and exporter in the world after China surpassing any other country.

India's heavily dependence on import has intensified the concerns that without reliable, secure and affordable energy India will not be able to sustain high economic growth. This situation is further complicated by a number of factors: 1) major oil suppliers are mostly in unstable regions in the Middle East and Africa; 2) rates are very high; 3) geopolitical situation of india stokes fears of a possible supply disruption and increase in oil prices; 4) slow market reform has limited investment from other private players within India; and 5) few or no viable energy alternatives currently exist.

As India's appetite for energy grows, concern about how its energy needs are going to be satisfied has been increasing in the country. This concern stems from India's inability to fulfillthe demand for energy from domestic sources, causing Indian companies and officials to look increasingly abroad to meet its requirements. The country imports 12 percent of its coal need- despite the fact that it has some of the largest

coal reserves in the world. By 2030 India is expected to look abroad for almost one-third of its coal requirements.[27] Meanwhile, with only

0.4 percent of the oil reserves and 0.6 percent of proven gas reserves, domestic supply of oil and natural gas – projected to account for almost one-third of consumption by 2030 – will not be

[26] Ibid.

[27] V. S. Sheth (eds.) (2008), India Africa Relations: Emerging policy and Development perspective , New Delhi: Academic Excellence, pp. 61-62.

able to keep up with demand. As things stand, more than two-thirds of the oil consumed in the country is imported; this dependence on oil imports, which is greater than United States and China, is only expected to increase, reaching close to 90 percent by 2025.

While on the other hands, Africa has an oil reserve of 9.7%, natural gas reserve of 7.8% and about 6% proven coal reserves of the world. "Recently, Africa has become home to several oil producers countries such as Algeria, Angola, Chad, Cameroon, Republic of Congo, Egypt, Equatorial Guinea, Gabon, Libya, Nigeria, Sudan and Tunisia. The natural gas producers in the continent include – Algeria, Egypt, Libya and Nigeria."[28]

India has marched on a policy to balance its need for accessing energy resources from the African continent by offering Africa the greater skills and sustainable development. Sudan and Nigeria has turned out to be the gateway for India's energy quest in Africa.[29] India's age-old ties with Sudan and historical relationship with Nigeria have been crucial in accessing oil from these countries. Within a few years, India has invested $740 million in oil. At present, Nigeria is the largest trading partner of India in Africa in terms of oil and energy resources. With more investments from the ONGC and other private partners, India needs to develop a long-term strategy to deal with the security threats while continuing to maintain strong relations with both countries in the continent. And to achieve this goal, Sudan and Nigeria are the only and the best options for India in securing its energy security goal.[30]

[28] Ruchita Beri (2010), "Prospects of India's Energy Quest in Africa: Insights from Sudan and Nigeria", StrategicAnalysis, Winter, p.67.

[29] For information visit ww.idsa.in.

[30] Izuyama Marie Yoshioka (2008), "India's Policy toward Africa", The National Institute for Defense Studies News,
August and September, p.223.

Indian government is actively making regular investments in these two countries through ONGC and various other enterprises independently. India has a deep-rooted involvement in Sudan and Nigeria's energy sector through ONGC, Reliance, and Mittal Energy Ltd. ONGC Videsh ltd. has been co-operating with several oil companies in exploring oil and gas in Libya, Sudan, Ivory Coast, Egypt, Nigeria and Angola under different terms & conditions. In Africa, OVL is co-operating Sudan National Oil Company, Egyptian General Petroleum Corporation, Vanco Energy Company USA, Mittal Investment Sarl of Mittal Steel, Oil India Limited, Angola

B. V. Subsidiary of Shell. At present ONGC Videsh Limited (OVL) has 38 oil and gas projects in 17 countries all over the world including Africa.

"In 2005, teaming up with world's largest steel maker Mittal (now Arcelor Mittal), OVL formed a new entity, ONGC Mittal Energy Ltd. A report indicate that OMEL, agreed to sign to a

$ 6 billion infrastructure deal with Nigeria in exchange for extensive access to some of the best production blocks in West African countries."[31] Nigeria has become the third largest supplier of oil to India, providing 12.3 percent of crude oil imports. OVL has subsequently acquired stakes in three other blocks in Sudan, and it also expressed it interest in purchasing stakes in two more oil blocks in Sudan.[32]

Subsequently, ONGC is currently involved in **Libya (1 project)** at Contract Area 43. Contract Area 43 is located in Cyrenaica Offshore Basin of Libya and consists of four blocks

[31] "External Policy and Oil Security", Vision 2025 at http://.pi.energy.gov/Indo-USconference/vision2025.pdfaccessed on 25th July 2013.

[32] Izuyama Marie Yoshioka (2008), "India's Policy toward Africa", The National Institute for Defense Studies News,
August and September .

spread over an area of 7449 Sq. Km. with water depth ranging from 20 to 2200 meters. ONGC Videsh acquired 100% stake in exploratory block Contract Area 43 on 17.04.2007.

Mozambique (1 Project) at Rovuma Area-1 Offshore. Rovuma Area-1 Offshore Mozambique (Area-1) is part of the Rovuma Basin, which is located in the northern part of Mozambique offshore and is one of the largest natural gas discoveries in recent times. The water depth in the block ranges from 500 to 2000 meters. The gas discoveries include Prosperidade (which straddles the adjoining Area 4's Mamba field), Golfinho-Atum, Tubarao, Tubarao Tigre and Orca.

ONGC Videsh holds net 16% Participating Interest (PI) in the project. 10% PI is held through ONGC Videsh Rovuma Limited (OVRL), wholly owned Indian Subsidiary of ONGC Videsh, and 6% PI is held through 60% shareholding in Beas Rovuma Energy Mozambique Limited (BREML) whereas remaining 40% shares in BREML is held by OIL. Other Area-1 consortium members are TOTAL (Operator-26.5% PI), MITSUI (20% PI), BPRL (10% PI), ENH (National Oil Company of Mozambique-15% PI) and PTTEP (8.5% PI).

South Sudan (2 projects)

The project was acquired before the secession of South Sudan from Sudan in March, 2003 and consisted of the upstream assets of on-land Blocks 1, 2 & 4. Block 1, 2 & 4, collectively known as Greater Nile Oil Project (GNOP), initially consisted of an area of 49,500 Sq. Km. in the prolific Muglad basin about 780 kms in the South-West of Khartoum, the capital of Sudan. Upon secession of South Sudan from Sudan, Blocks 2A, 2B & 4N are in Sudan and Blocks 1A, 1B as well as 4S are in South Sudan. ONGC Videsh holds 25% PI in GPOC, other partners in the project are CNPC (40%), Petronas (30%) and Nilepet (5%). The Project is jointly operated by all partners through a Joint Operating Company 'Great Pioneer Operating Company' (GPOC).

SPOC (Block 5A)

Block 5A is located in the prolific Muglad basin and spread over an area of about 20,917 Sq. Km. ONGC Videsh acquired 24.125% stake in the block in September'2003. Other partners in the block are Petronas with 67.875% PI &Nilepet with 8% PI. The block is jointly operated byall partners through a Joint Operating Company-SUDD Petroleum Operating Company (SPOC).[33]

CONCLUSION

India has embarked on the journey to secure its energy needs in Africa, mainly in Nigeria and Sudan, the experience faced by the Indian oil companies or private investors is of a different kind. Somewhere they have developed very strong relationship with these countries in different regions and somewhere they have to face the hardship, betray and competition. Political instability in some of the regions which causes insecurity in the region are some of the challenges that Indian national oil companies and private investors will have to deal with in near future. African countries also need to resolve these internal issues to attract more investors in their region.

[33] Greater Nile Oil Project (GNOP) Sudan, Sudan Multi Product Pipeline and Block PEL-0037 Namibia: GNPOC,Sudan Pipeline and PEL-0037 wererelinquishedin FY 2019-20.

REFERENCES

1. IEA, Findings of recent IEA work 2005, p.67.
2. * BP, BP Statistical Review of World Energy (June 2005), p. 37.
3. *Expert Committee on Energy Policy, Draft Report, p. 63.
4. "External Policy and Oil Security", Vision 2025 at http://.pi.energy.gov/Indo-USconference/vision2025.pdfaccessed on 25th July 2013.
5. Mathur T. Das C. and F.J. Richter (2005), India Rising, p.134.
6. Kanai, Hirofumi and Gainer Kwan (1997), Future Market of LNG in Asia cited in Michaela Crissell (eds.)International Oil and Gas, Financial Review, p. 108
7. Kamboj Anil (2013), "Energy Security: Indian Perspective", World Focus vol.399 March 2013 p.18.

8. www.meet-asia.com accessed on 28.09.2012.
9. Beri Ruchita (2003), "India's Africa Policy in the Post – Cold War Era: An Assessment", Strategic Analysis, vol. 27,no. 2, April – June, p.224.
10. Mehdi Parvizi Amineh and Henk Houweling (2010), 'China and the Transformation of the post-Cold War Geopolitical Order' in State, Society and International Relations in Asia (eds.), Amsterdam: Amsterdam UniversityPress.
11. Mohanty Arun (2013), "Russia in India's energy security strategy", World Focus, vol. 399 March 2013, p.32.
12. See www.indiaenergycongress.in, The Economist Intelligence Unit, "Empowering growth perspectives on India's energy future". P.10, www.managementhinking.edu.com/sites/dc, accessed on 01.03.2013.
13. www.chathamhouse.org cited in Fantu Cheru & Cyril Obi (eds.) (2010), The Rise of India and China in Africa,London/New York: Zed Books.
14. D. Sharma & D. Mahajan (2007), "Energizing Ties: the Politics of Oil", South African Journal of InternationalAffairs, special issue: India in Africa, vol. 14, no. 2, pp. 37-52.
15. M. T. Freund et. Al. (1995), Annex: Identifying Future Courses for Crisis. In Patrick L. Clawson (eds.), Energy and National Security in the 21st Century, Washington, D. C.: National Defence University Press, pp. 151-184.
16. Sheth V. S. (eds.) (2008), India Africa Relations: Emerging policy and Development perspective , New Delhi: Academic Excellence, pp. 61-62.
17. Izuyama Marie Yoshioka (2008), "India's Policy toward Africa", The National Institute for Defense Studies News,August and September, p.223.
18. Greater Nile Oil Project (GNOP) Sudan, Sudan Multi Product Pipeline and Block PEL-0037 Namibia: GNPOC,Sudan Pipeline and PEL-0037 wererelinquishedin FY 2019-20.