

Report of National Working Committee on developing strategy to encourage global E&P technology & oilfield service providers to consider India as a hub

National Working Committee

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National Working Committee

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1 Executive Summary

1.1 Importance of E&P Service Provider Industry to India

1.1.1 E&P service providers have played a key role in enabling success for E&P operators worldwide. Since the late nineties, the balance in technology development and intellectual property has clearly shifted towards service providers. E&P companies leverage on latest technology and specialist services of oilfield service providers to reduce underground risks thereby improving chances of success in E&P operations.

1.1.2 India meets less than 30% of its crude oil requirement and is mainly dependent on crude oil imports which are expected to grow in future. The reliance on external sources makes India extremely vulnerable to insecurity. As oil and gas prices remain well above historical levels for so long, it becomes necessary to try to reduce consumption of crude oil as also to increase domestic production. To achieve the latter objective, Government of India is undertaking number of initiatives to intensify exploration activities. In order to undertake the committed exploration activities, there is a need for Technology and oilfield services.

1.2 Criticality of Service Industry Growth

1.2.1 Exploration and Production (E&P) activity in India grew at a slower pace till end nineties when only 0.23 Million Sq km area was under licence for exploration. After implementation of New Exploration and Licensing Policy (NELP) in the year 2000, however, now exploration licence has been awarded for more than 1 Million Sq km.

1.2.2 Companies have committed considerable seismic data acquisition and drilling of wells under various rounds of NELP bidding and it is challenging to accomplish that. Much more than committed today is estimated to be undertaken due to following reasons :

- Additional fields have been awarded in NELP V with minimum work program commitments
- New discoveries would trigger an additional requirement of drilling services, technology & other oilfield services.
- Additional licensing rounds and acreages that will be awarded under open acreage policy will generate additional work requirement.
- Seismic acquisition, processing & interpretation activities undertaken by DGH *suo-moto* as a part of speculative surveys or otherwise, to promote exploration acreages will generate additional oilfield services requirement.

- 1.2.3 Most of the specialised E&P services are sought from foreign E&P services companies. Typically, E&P operators spend in excess of 60% of their total expenses on outsourced work to service providers. It is estimated that E&P companies will spend over US\$ 10 billion in next 5 years in exploration and development activities. Based on this, the estimated foreign exchange outgo would be US\$ 6 bn in next 5 years on account of payments to overseas service providers. If the services are available from within India, part or full of this foreign exchange outgo would be saved.
- 1.2.4 Only handful of global service companies has set up base to execute the contracts in India. The companies have not invested in the form of:
- Technology development
 - Technology transfer and implementation
 - Expertise and Competency development
 - Quality Assurance and Quality control
- 1.2.5 Lack of investment by service providers has a direct impact on the operating expenditure of E&P companies since the cost of servicing India in that case is higher in comparison to servicing places which are closer to their base offices.
- 1.2.6 The E&P industry is already facing the bottleneck of services on cost, quality and timeliness front. Unless India is prepared to facilitate growth of service industry to be able to address to the above described growth in service requirement, the development of E&P industry and energy security would be compromised.

1.3 **Challenges faced by E&P companies**

- 1.3.1 The rig demand has generally risen globally in response to the relatively high energy prices and the service companies are operating at their fullest capacity. Other oilfield service providers are also facing similar situation. In the present scenario and future requirements, timely implementation of the work program using advance technology, is getting affected, quite often.
- 1.3.2 Further, regulatory and tax compliance procedures involve long lead time and often considered as constraint by oilfield service providers. Only a few international service companies in the field of drilling, seismic data acquisition, processing, mud logging etc. have established themselves in India. This has left very limited choice of service providers available to E&P companies with maximum unfavourable impact on small operators in the current scenario.

1.3.3 Rising demand for services has also led to escalation of service related costs leading to higher operational costs.

1.4 **Constraints faced by technology & other oilfield service providers in India**

1.4.1 The concerns of service providers discussed in detail in the report are of the following categories-

- **Fiscal** levies are high, constantly varying and non-uniform in states leading to inability take firm mid or long term business decision apart from its unattractiveness;
- **Regulatory** provisions are complex and often micro-managed leading to delays and unforeseen costs resulting into lower working environment rating of India;
- Personnel health, safety and environment (**HSE**) specially in fields is compromised to a great extent thereby human resources and companies reluctance coming in the way of business endeavours;
- **Infrastructure and logistics** links being weak, response to E&P companies can not be prompt and efficacious.

1.4.2 It is acknowledged that these or similar constraints are not faced only in India. Countries with developing economies and poor infrastructure also suffer from these aspects. Some developing countries, however, are privileged to receive attention of E&P companies as well as the service providers, due to the sheer proven prospectivity. Given the necessity to explore to prove the prospectivity and achieve higher production, India, at least in near term would not receive technology and cost benefits unless attractive ground is provided to service providers.

1.4.3 All the four category of constraints can be overcome by the Government through specific measures, should the service industry be decided to be given special attention and benefits. This report tries to provide specific recommendations around these four constraints, which the Government may like to consider. The confidence that these constraints can be overcome is owing to the fact that the industry despite being large value, can effectively operate from one or two locations in the country. This would uniquely position India for service providers to set-up facilities, not only to service E&P companies in India but also in the region.

1.5 Destination India for Hub for Service Providers - Opportunities

- 1.5.1 To blend with the facilities the Government may provide to service providers, India has unique advantage of educated human capital, low costs and IT services to attract the service providers.
- 1.5.2 Information Technology (IT) is the platform and it propels new 'Technologies' of the future. India with its advanced cutting edge IT capabilities, is poised to become the prime hub for the 'New Technologies' of the Knowledge Society. Technology and Oilfield service providers can take advantage of cost arbitrage of manpower and IT development to provide services in and from India, Asia Pacific, Middle East and other parts of the worlds.
- 1.5.3 India is geographically well located and well connected with rest of world as is surrounded by sea on three sides and also close to South East Asian countries.
- 1.5.4 The global emerging scenario is that of growing dearth of E&P professionals for operators as well as service providers. Weak energy prices in the mid 80's and 90's has caused acute shortage of E&P professional in the West
- 1.5.5 India offers following advantages/incentives to international companies who are providing technology and services to their clients globally which can also be leveraged by E&P services providers.
- Availability of highly talented labour pool
 - Cost Arbitrage - "One Singaporean worker costs as much as 3 in Malaysia 8 in Thailand 13 in China 18 in India."- *Source: The Straits Times/August 18, 2003*
 - Leapfrog increases in Telecom reliability
 - Faster Time to Market
 - 24 Hour Service Window
 - Large pool of intellectual capital
 - Rapid approach to globalization
 - English as a medium of education
 - Important source of high quality IT manpower

1.6 SEZ Model in India

- 1.6.1 One of the most attractive business models with fiscal concessions offered by the Government of India through Ministry of Commerce is that of "Special Economic Zone (SEZ)". The SEZ concept has certain characteristics which make it superior to competing concepts like EPZs as a framework for industrial development, export

promotion and investment attraction. It packs in all that's best and latest in thinking on industrial policy and strategy - a "big push" in creating world class infrastructure to attract MNCs and large investors, area-focused infrastructure development, a business-friendly operating environment, private investment orientation, private partnership in economic development, exploitation of core competence and inherent strengths, en-masse employment creation - in one potent bundle.

1.6.2 This being so, the SEZ may represent the future of E&P service industry development strategy, specially since all the services are most suited to be located together in near vicinity of the upstream industry.

1.7 The Proposed PEZ

1.7.1 The National Working Committee (NWC) has conceptualised a hub of E&P service providers. The Government having enacted the SEZ Act and that being very attractive for International companies to invest into India in a hub model, it is suggested that this hub be on the lines of SEZ. This hub may be christened as "Petroleum Economic Zone" (PEZ). The PEZ(s) would be able to house all categories of service providers to service the E&P sector and is proposed to be granted concessions as described elsewhere in this report.

1.7.2 The determinants for setting up such a PEZ would largely be the following-

- Strong support by the local government,
- Quantum of projected activity of absorption of services in that location,
- Easy access and proximity to active location,
- Convenience to service the region (neighbouring countries)
- Infrastructure including port facility, Road, Rail links, Airports
- Robust communication facilities including telephones, network, IT enablement, data transfer network, etc
- Logistics facilities like ware housing, material handling, etc

1.7.3 The location of blocks being explored and to be explored is largely expected to be offshore, both on West and East coast. Regional market combined with this, leads us to explore a coastal or near coast location for such a PEZ. At present most of the service providers, big or small have naturally been operating from Mumbai or around since the hub of activity rests there. A location near Mumbai may also be considered to encourage existing companies to expand/relocate into the PEZ.

1.7.4 Service providers located in PEZ would have following benefits:

- Income tax holiday is available to a unit within the PEZ not only for exports but for income from providing services in India
- Exemption from Capital Gains
- Exemption from Minimum Alternate Tax
- Exemption from customs duty on goods/ services imported into or exported by E&P service provider;
- Exemption from excise duty on goods procured from India by E&P service provider;
- Drawback or any other admissible benefits on goods brought or services provided from India or services provided from outside India;
- Exemption from service tax on taxable services provided to E&P service provider
- Exemption from levy of Central Sales Tax Act, 1956 on interstate sales or purchase of goods
- Exemption from various cess and levies
- Single window clearance for all regulatory approvals
- Special courts/ single enforcement agency
- Foreign Exchange Earning to domestic earnings received from domestic E&P companies will be considered for NFE+ condition evaluation
- Potential of highly talented labour pool and skilled resources in India
- 24 Hour Service Window
- Preference by Indian E&P companies for E&P services opportunity
- Preference by Indian E&P companies for overseas E&P services opportunity
- Easy access to Middle East, South East Asia etc.

1.8 **Indian SEZ regime needs to be customised to attract technology and oilfield service providers in PEZ model**

Recommendation	Benefits	Ministry
<p>Prescribe the E&P Technology & other service provisioning as eligible for the purposes of the SEZ Act</p> <p>One of most important requirements for the service providers to qualify for SEZ benefits is that the Government needs to prescribe the E&P Technology & other service provisioning as eligible for the purposes of the SEZ Act. It is learnt that the Government is in the process of announcing the services which qualify for benefit under SEZ Act. The plea is to include the E&P sector related services in</p>	<p>E&P Technology & other service provisioning will be eligible for the purposes of the SEZ Act.</p>	<p>Ministry of Commerce</p>

Recommendation	Benefits	Ministry
that list.		
<p>Earnings received from rendering E&P services in India to be considered for NFE+ condition evaluation</p> <p>In the case of E&P service providers, as regards SEZ model, a special dispensation needs to be given with respect to “Net Foreign Exchange Earning – Positive” condition. Since the service providers are being encouraged to be based in India to service E&P companies in India, the earnings are expected to be in Indian Rupee rather than in Foreign Exchange. These earnings, in the opinion of service providers are however, displacing the Foreign Exchange outgo of E&P companies in India. If these services are available within country, the outgo is saved and therefore deserves to be treated as deemed Foreign Exchange earning. The Government therefore needs to allow treatment as Foreign Exchange Earning to domestic earnings received from domestic E&P companies for NFE+ condition evaluation.</p> <p>Preliminary assessment of the SEZ Act indicates that such treatment is available to supplies/services to Refineries.</p>	<p>It is estimated that foreign exchange outgo would be US\$ 6 billion in next 5 years on account of payments to overseas service providers. If the services are available from within India, part or full of this foreign exchange outgo would be saved.</p>	<p>Ministry of Commerce</p>
<p>Fiscal Benefits</p> <p>Income tax holiday is available to a unit within the PEZ not only for exports but for income from providing services in India</p> <p>Exemption from Capital Gains</p> <p>Exemption from Minimum Alternate Tax</p> <p>Exemption from customs duty on goods/ services imported into or exported by E&P service provider;</p> <p>Exemption from excise duty on goods procured from India by E&P service</p>	<p>Most of the benefits are similar as those available to units located in SEZ. Additional benefits sought for units in PEZ are exemption for India sourced income to make it attractive proposition for them to undertake investments in PEZ.</p>	<p>Ministry of Finance</p>

Recommendation	Benefits	Ministry
<p>provider;</p> <p>Drawback or any other admissible benefits on goods brought or services provided from India or services provided from outside India;</p> <p>Exemption from service tax on taxable services provided to E&P service provider</p> <p>Exemption from levy of Central Sales Tax Act, 1956 on interstate sales or purchase of goods</p> <p>Exemption from various cess and levies</p>		
<p>Regulatory approvals</p> <p>Single window clearance by Development Commissioner for all regulatory approvals</p>	This benefit is similar to benefit already available to units located in SEZ.	Ministry of Commerce
<p>Legal Proceedings</p> <p>Special courts/ single enforcement agency</p>	This benefit is similar to benefit already available to units located in SEZ.	Ministry of Commerce
<p>India Advantage</p> <p>Availability of highly talented labour pool in India</p> <p>24 Hour Service Window</p> <p>Preference by Indian E&P companies for E&P services opportunity</p> <p>Preference by Indian E&P companies for overseas E&P services opportunity</p> <p>Easy access to Middle East, South East Asia etc.</p>	These benefits would be available to units setting in PEZ in India	None

1.9 **International Success stories – Oilfield service industry in Special Economic Zones**

1.9.1 Trade Zones do play a strategic role in the development of trade and many of such zones exist in the world today. Depending upon the ultimate objectives of the host

country, there exist different forms of Trade Zones, the common ones being, Export Processing Zones (EPZs), Free Trade Zones (FTZs), Special Economic Zones (SEZs), Export Processing Units (EPU) and Special Customs Privileged Facilities.

- 1.9.2 Onne Oil & Gas Free Zone located in the heart of Nigeria's main Oil and Gas production areas appears to be the most successful initiative as regards attracting the global service providers into the country.
- 1.9.3 The Onne Oil & Gas Free Zone was established by the Nigerian Federal Government to provide the ideal infrastructure from which to create a distribution 'Hub Base' to service not only Nigerian onshore and offshore fields but also to provide easy access to the entire West African and Sub Saharan oilfield operating areas. Other similar zones either specific to development of activities in oil & gas sector or not, have been discussed. Singapore, Malaysia, China and Poland models have been covered in the report as examples along with analysis of reasons for their success.

1.10 **Conclusion**

- 1.10.1 The rig demand has generally risen globally in response to the relatively high energy prices and the service companies are operating at their fullest capacity. Other oilfield service providers are also facing similar situation. Availability of services in India is becoming constrained and expensive.
- 1.10.2 E&P service providers are facing constraints in providing services to Indian E&P companies viz. high fiscal levies, complex and time consuming regulatory process, and weak infrastructure and logistics in providing services efficiently. Only a few international service companies in the field of drilling, seismic data acquisition, processing, mud logging etc. have established themselves in India. This has left very limited choice of service providers available to E&P companies with maximum unfavourable impact on small operators in the current scenario.
- 1.10.3 Oilfield service providers specific SEZ or PEZ may be considered to represent the future of E&P service industry development strategy, specially since all the services are most suited to be located together in near vicinity of the upstream industry. PEZ model is expected to attract international companies' investments in India.
- 1.10.4 Successes achieved in places like Nigeria have proven that the support by the Government for service industry promotion, not only help the domestic E&P industry but also boost counties GDP by servicing the regional activity.
- 1.10.5 The E&P industry is already facing the bottleneck of services on cost, quality and timeliness front. Unless India is prepared to facilitate growth of service industry to be

able to address to the above described growth in service requirement, the development of E&P industry and energy security would be compromised.

2 Background and Methodology

2.1 Background

- 2.1.1 India currently meets only about 30 per cent of its crude oil requirement from domestic production and is mainly dependent on imports. The dependence on imports is only expected to grow in future. Oil and gas prices remaining around US\$ 60/bbl for so long, Government of India is well founded in adding thrust to already strengthened activity of undertaking number of initiatives to intensify exploration activities in India. While these efforts have already shown some results in the form of licensed out area and exploration undertaken, India is continuing its effort to attract exploration investments and that would allow more and more companies making larger investments in exploration.
- 2.1.2 It goes unsaid, for the accelerated growth of the E&P sector in the country, it is of paramount importance that service industry of international standards with state-of-the-art technology becomes readily available locally.
- 2.1.3 The Minister of Petroleum and Natural Gas & Panchayati Raj, Shri Mani Shankar Aiyar, in order to encourage global E&P technology & oilfield service providers to set up Technology and Oilfield service providers hub in India, formed a National Working Committee (NWC), under the chairmanship of Mr. Sanjay Barman Roy to suggest a strategy to facilitate such an initiative.
- 2.1.4 In the above background PetroFed, a member of the NWC approached PwC to prepare and submit a preliminary approach paper as one of the inputs for NWC to submit its paper to MoPNG to suggest ways to promote India as a global hub for E&P Technology and E&P oilfield service providers.

2.2 Approach

- 2.2.1 PwC based the study upon the secondary research, feedback by E&P and service companies and the discussions had in meetings with the service providers and with the NWC.

2.3 Methodology

- 2.3.1 In order to seek views and suggestions from various Technology and Service providers, PetroFed circulated a questionnaire, which some companies responded to.
- 2.3.2 PetroFed also held a meeting of the companies on the November 11, 2005 wherein PwC presented future potential for E&P services business in India and concept of Special Economic Zone and its applicability to Oil field service providing business.

Companies expressed their views and discussed various aspects for encouraging technology and service providers to consider India as a hub. The meeting organised by PetroFed was attended by representatives of companies besides PwC representatives, PetroFed and NWC.

- 2.3.3 Views of companies expressed through responses to questionnaire or in the meeting held on November 11 and views of NWC members after due analysis by PwC were incorporated in the draft report.
- 2.3.4 PwC concurrently carried out research on various subjects including provisions of SEZ Act, volume of service activity currently being provided and that expected in near future and the factors which may provide impetus to the service provider business operations in India.
- 2.3.5 The National Working Committee held detailed deliberations with PwC on the analysis and research carried out and then adopted the final observations.
- 2.3.6 This report based outcome of activities mentioned above, is being submitted for kind consideration by the Ministry of Petroleum and Natural Gas.

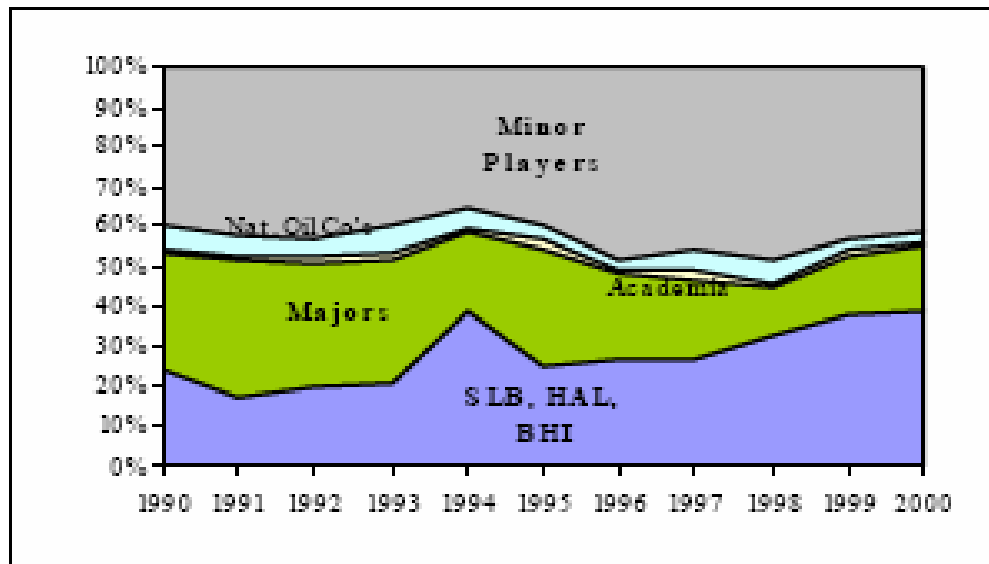
3 Challenges faced by E&P companies in receipt of service

3.1 Need for Technology & oilfield service providers

- 3.1.1 Technology and oilfield services industry consists of data analysis & interpretation, contract drilling and oilfield services. Each sector comprises of several sub sectors and areas of specialized expertise; each area of specialized expertise has its own leading players. Many global service companies participate in several market segments in order to offer a wide range of products and services. In this way, they have become total-solution providers to the oil and gas industry. Smaller companies frequently develop expertise in particular niches of the oilfield services industry.
- 3.1.2 The lifeblood of the Technology and oilfield services sector is the upstream capital spending by the E&P companies. It is the E&P companies to whom the offshore and drillers contract out their rigs, and it is to these producers that oilfield services companies offer related services, such as pressure pumping, casing, crew transportation, well servicing, and other ancillary services. E&P companies set aside significant amounts of money each year for exploration and development activities. Because its revenues depend entirely on the fortunes of oil and gas production companies, the technology and services industry is tied to the volatile cycles of oil and gas demand and pricing. However, investments in the oil and gas industry are characterized by long lead times (sometimes exceeding 10 years). As a result, investment decisions are based on the long-term trend of commodity prices; decisions that were made years ago are affecting current production and reinvestment.
- 3.1.3 In the eighties when oil prices were very low, many international E&P companies hived-off services component from their portfolio. As a result many service companies came into the business and through intensive R&D developed state of the art technology in the field of well logging, advance drilling techniques, seismic data acquisition, processing and interpretation, deepwater drilling, IOR/ EOR techniques, as well as developed capabilities related to almost all other operational aspects of hydrocarbon industry. All the new techniques evolved during the last two decades by the services industry, allowed E&P companies to succeed in the search of hydrocarbon in such areas, formations and reservoirs which were otherwise not thought for hydrocarbon occurrence or production. Moreover, due to easy access to services through outsourcing, the E&P companies could focus on their main business of search of hydrocarbons and its production.

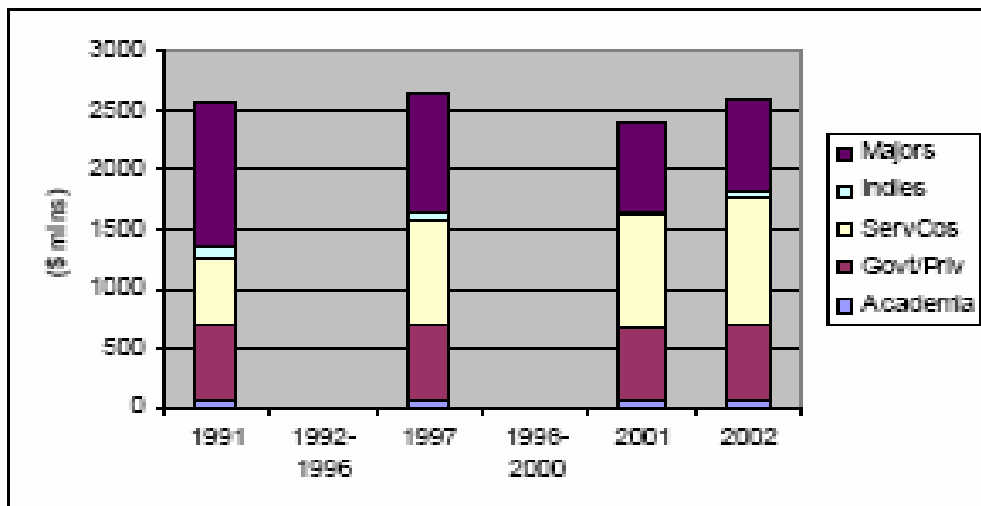
3.1.4 E&P service providers have played a key role in enabling success for E&P operators worldwide. Since the late 90's the balance in technology development and intellectual property has clearly shifted towards service providers as per the survey conducted by Lehman Brothers.

Technology Ownership



Source: American Patent Office

E&P R&D Expenditure – 1991to 2002



Source: Presentation by Shell in SPE Foundation

3.1.5 It is indicated above that service providers are technology developers and owners with a combined market share in excess of 35% in intellectual property and investments. In

a recent technology survey by Lehman Brothers, when asked as to “what are the most important technologies influencing your E&P business?” and when responses were ranked from a survey of technology of 327 operators, 3-D/4-D Seismic still continues to be most important technology influencing E&P business.

Most Important Technologies (Ranked by # of Responses in a survey)

	2005	2004	2003	2002	2001	2000
3-D/4-D Seismic	110	121	106	146	129	155
Fracturing/Stimulation	61	88	52	74	24	30
Horizontal Drilling	60	62	54	58	39	31
Drill Bit Technology	34	22	16	15	7	6
Directional Drilling	33	48	42	44	9	12
Reservoir Recovery Optimization	30	39	35	NA	NA	NA
Intelligent Well Completions	16	23	20	25	3	2
Wireline Logging	12	17	8	13	3	10
Underbalanced Drilling	6	17	13	10	4	7
Measurement-While-Drilling	5	6	10	10	3	4
Deepwater Technology	4	6	9	10	3	11
Expandable Products	2	3	1	NA	NA	NA

Source: Lehman Brothers estimates

3.1.6 E&P companies leverage on latest technology and specialist services of oilfield service providers to reduce underground risks thereby improving chances of success in E&P operations.

3.1.7 Few service companies have set up site offices in India to execute the contracts in India. There is no capital investment in India in the form of:

- Technology development
- Technology transfer and implementation
- Lack of expertise and competency development
- Quality Assurance and Quality control

3.1.8 Lack of investment by service providers has a direct impact on the operating expenditure of E&P companies since the cost of servicing India in that case is higher in comparison to servicing places which are closer to their base offices.

3.2 Technology and oilfield services activities to be undertaken in India

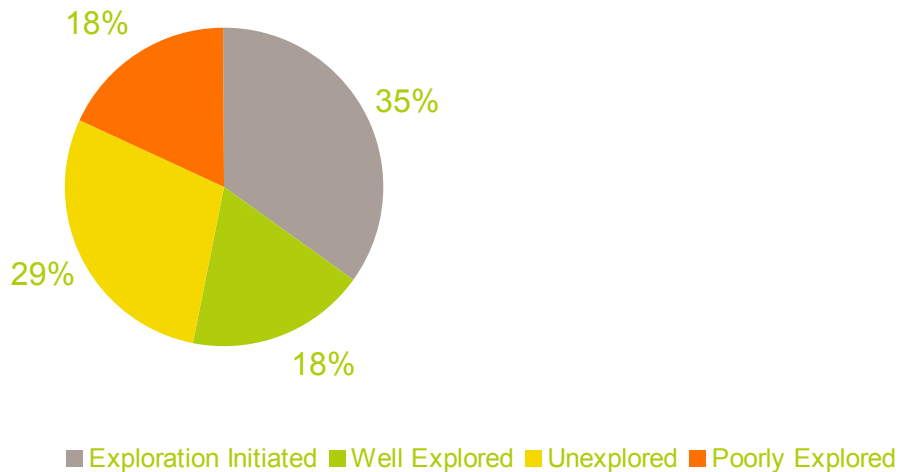
3.2.1 India meets less than 30% of its crude oil requirement and is mainly dependent on crude oil import which is expected to grow in future. The reliance on external sources makes India extremely vulnerable to insecurity. As oil and gas prices remaining well above historical levels for so long, it become necessary to try to reduce consumption of crude oil as also to increase domestic production. To achieve the latter objective,

Government of India is undertaking number of initiatives to intensify exploration activities.

3.2.2 The E&P activity was primarily undertaken by the National Oil Companies till end nineties which after the implementation of New Exploration and Licensing Policy (NELP) in the year 2000 made a quantum leap forward. NELP has resulted in increase in participation by various E&P companies in India and firm commitments for E&P survey and drilling activities by them. In order to undertake the committed E&P activities, there is a need for Technology and oilfield services.

3.2.3 The sedimentary basins of India including onland and offshore up to the 200m isobath and deep waters beyond the 200m isobath have been estimated to be about 3.14 million sq. Km. area, of which about 30% is unexplored. At present hydrocarbons are being produced from seven out of 26 sedimentary basins. Total hydrocarbon resources, inclusive of deep waters, are estimated at around 28 billion tonnes oil and oil-equivalent of gas (O+OEG). More than 75% of total prognosticated resources are still required to be established. Diagram given below indicates that only 72% of the total 3.14 million sq. Km. needs to be extensively explored.

Extent of Exploration of Sedimentary Basins



Source : DGH, India

3.2.4 Companies have committed considerable seismic data acquisition and drilling of wells under various rounds of NELP bidding and it is challenging to accomplish that. The following paragraphs attempt to estimate, based on work programmes committed E&P companies operating in India upto NELP IV, the 2D, 3D, exploratory wells, cementing & logging jobs during the period 2005-12. Actual work requirement will be much more

that the estimates due to following reasons leading to additions to the tabulated estimates in following paragraphs :

- Additional fields have been awarded in NELP V with minimum work program commitments
- New discoveries would trigger an additional requirement of drilling services, technology & other oilfield services.
- Additional licensing rounds and acreages that will be awarded under open acreage policy will generate additional work requirement.
- Seismic acquisition, processing & interpretation activities undertaken by DGH *suo-moto* as a part of speculative surveys or otherwise, to promote exploration acreages will generate additional oilfield services requirement.

2D Seismic Survey

3.2.5 Estimated Line KM of 2D is as follows:

	2005 & 06	2007 & 08	2009 & 10	2011 & 12	Total
Onland	4,250	3,810	700	100	8,860
Shallow Water	5,200	1,000	0	0	6,200
Deep Water	19,350	15,200	0	2,400	36,950
Total	28,800	20,010	700	2,500	52,010
<i>Source: DGH, India</i>					

3D Seismic Survey

3.2.6 Estimated Square KM of 3D is as follows:

	2005 & 06	2007 & 08	2009 & 10	2011 & 12	Total
Onland	660	3,758	1,210	1,350	6,978
Shallow Water	5,500	2,550	500	0	8,550
Deep Water	23,450	15,640	2,500	500	42,090
Total	29,610	21,948	4,210	1,850	57,618
<i>Source: DGH, India</i>					

Drilling

3.2.7 Estimated exploratory wells to be drilled is as follows:

	2005 & 06	2007 & 08	2009 & 10	2011 & 12	Total
Onland	51	116	82	60	309
Shallow Water	37	83	67	65	252
Deep Water	106	102	29	9	246
Total	194	301	178	134	807
<i>Source: DGH, India</i>					

Cementing

3.2.8 Typically 3 cementing jobs are required for each drilling well. Estimated number of cementing Jobs is as follows:

	2005 & 06	2007 & 08	2009 & 10	2011 & 12	Total
Onland	153	348	246	180	927
Shallow Water	111	249	201	195	756
Deep Water	318	306	87	27	738
Total	582	903	534	402	2,421
<i>Source: DGH</i>					

Logging

3.2.9 Typically 2 logging jobs are required for each drilling well. Estimated number of runs of Logging Jobs is as follows:

	2005 & 06	2007 & 08	2009 & 10	2011 & 12	Total
Onland	102	232	164	120	618
Shallow Water	74	166	134	130	504
Deep Water	212	204	58	18	492
Total	388	602	358	268	1,614
<i>Source: DGH</i>					

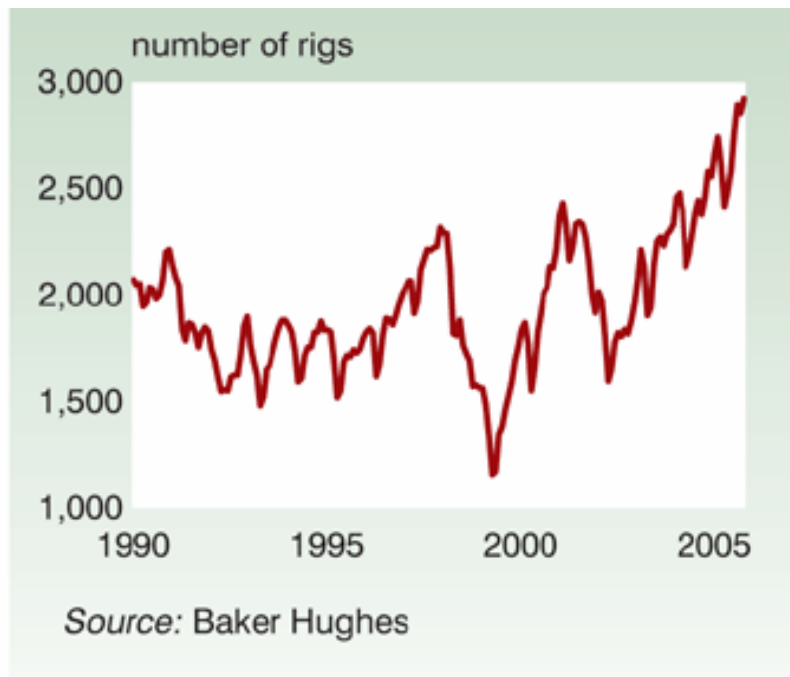
3.2.10 Most of the specialised E&P services are sought from foreign E&P services companies. Typically, E&P operators spend in excess of 60% of their total expenses on outsourced

work to service providers. It is estimated that E&P companies will spend over US\$ 10 billion in next 5 years in exploration and development activities. Based on this, the estimated foreign exchange outgo would be US\$ 6 billion in the next 5 years on account of payments to overseas service providers. If the services are available from within India, part or full of this foreign exchange outgo would be saved.

- 3.2.11 Unless India is prepared to facilitate growth of service industry to be able to address to above quantified and non-quantified growth in service requirement, the development of E&P industry and energy security would be compromised.

3.3 **Challenges faced by E&P companies**

- 3.3.1 High crude oil prices and big-spending budgets among upstream producers mean plenty of work opportunities for international oilfield services companies and equipment suppliers. Rig rates and contractor fees have increased sharply over the last year or so in energy-producing states as demand for services squeezes supply.
- 3.3.2 The frenetic pace of drilling, reflected by the surge in rig activity, recent seismic, logging and well-testing contracts also point to a renewed interest in exploration work, both in new and existing areas. From a geographical perspective, activity increased in virtually every corner and is expected to continue to grow.
- 3.3.3 Crucially, higher energy prices have unlocked a whole new batch of projects that might otherwise be deemed marginal, meaning oil companies can press on with new production and development plans, as well as exploration.
- 3.3.4 There is certainly no denying the jump in rig activity over the last 12 months (see Figure below on Worldwide rig count), a major factor contributing to the higher rig rates.



- 3.3.5 Like the major oilfield services companies, rig suppliers are also enjoying prosperous times, with buoyant day rates and high utilisation rates reflected in recent results. At the top end of the market, Transocean's fifth generation deep-water drill ships were posting contract day rates ranging from \$110,000 to \$375,000 at the end of October, while jack-up contract day rates ranged from about \$40,000 to \$120,000.
- 3.3.6 And despite the high pricing, there is no shortage of customers. Continued demand growth, combined with recent attrition in the worldwide drilling fleet, is stimulating significant day rate increases and greater urgency among customers to secure future rig time. Other firms are also benefiting from the healthy global oil and gas market, aside from rig contractors.
- 3.3.7 The thirst for oil has driven up interest and activity across the board, with the fastest growing markets, such as Russia, drawing more than their share of interest. The high growth of some of these emerging markets is leading a number of players to refocus their activities. Major organisations such as Halliburton are shifting more resources to the country, particularly in the far-eastern area, in readiness for greater business volumes.
- 3.3.8 The Middle East also represents a fast-growing market, led by opportunities in Saudi Arabia. Saudi Aramco continues to expand its operations in line with increased spending plans. A rising rig count in Kuwait and Bahrain suggests even wider potential. And in Qatar, it is the development of the gas industry that is capturing the imaginations of services firms and contractors.

- 3.3.9 Energy companies are rushing to pump as much oil and gas as possible out of the ground and into the pipelines to take advantage of high energy prices. Because most of the big, easy-to-reach reserves have already been tapped, operators must drill more wells more deeply in order to maintain production levels. Not surprisingly, the demand for drilling rigs has also reached a record level. However, the supply of viable rigs is already becoming scarce.
- 3.3.10 The fleet of active rigs, which exceeded 4,500 during the early 1980s, shrank to an all-time low of fewer than 500 in 1999. Although it was back up to almost 1,500 by late October 2005, there are still not enough rigs available to meet the growing demand for oilfield services. Exacerbating the shortage, few land rigs have been constructed locally in the last two decades and the ageing fleet is more susceptible to breakdowns. Furthermore, competition for equipment is intensifying as new drilling firms pop up to capitalise on the high-price environment.
- 3.3.11 Oil and gas firms often have to wait for rigs to come available – and when they secure a rig, they have to pay considerably more than they did just a few months ago. To keep day rates in check, larger energy firms are signing longer-term contracts that lock in prices for up to three years instead of booking rigs on a well-by-well basis. That trend is making it even tougher for smaller firms to contract the equipment they need.
- 3.3.12 The rig demand has generally risen globally in response to the relatively high energy prices and the service companies are operating at their fullest capacity. Other oilfield service providers are also facing similar situation. In the present scenario and future requirements, timely implementation of the work program using advance technology, is getting affected, quite often.
- 3.3.13 The absence of many international service industry players and low growth of the local service industry in India may be attributed to the fact that, the E&P since its inception was largely undertaken by National Oil Companies and not many E&P Service providers were willing to meet requirements of NOCs. Further, regulatory and tax compliance procedures involve long lead time and often considered as constraint by oilfield service providers. Only a few international service companies in the field of drilling, seismic data acquisition, processing, mud logging etc. have established themselves in India. This has left very limited choice of service providers available to E&P companies with maximum unfavourable impact on small operators in the current scenario.
- 3.3.14 Rising demand for services has also led to escalation of service related costs leading to higher operational costs.

3.4 The Concern

3.4.1 It may be appreciated that, despite relatively lesser demand for services upto NELP V award, the inconveniences and cost, quality and timeliness issues faced by E&P industry was felt prominently. As mentioned above, the demand for services are to grow substantially hereafter. If the situation is not reviewed, if the service providers are not provided an attractive ground to operate from and if the constraints faced by service providers are not addressed to in near future, the E&P services could prove to be bottleneck to E&P industry development. Therefore, for accelerated growth of the E&P sector in the country, it is of paramount importance that competitive service industry of international standards with state-of-the art technology becomes readily available locally.

4 Constraints faced by service providers in India

4.1 The Constraints

4.1.1 India is geographically well located and well connected with rest of world as it is surrounded by sea on three sides and also close to South East Asian countries. Technology & other service providers are, however, experiencing constraint during execution of E&P service contracts in India. These constraints are of the nature of non-availability of transport and other infrastructure, long lead time in processing number of regulatory approvals by different bodies, expensive and time consuming fiscal procedures which do not provide for business convenience. Following are major constraints by Technology & other service providers in India.

- Oilfield service providers feel that India lacks good infrastructure facilities for conducting operations, transportation and living.
- Long lead time is involved in regulatory process related with movement of men, material and machine e.g. Visa for nationalities, offshore passes for crew, etc. Moving equipment from one contract to another for two different companies within the country needs approval.
- Explosive Import Regulations are numerous and involve long lead time; presently taking almost 10-12 weeks to import. Multiple agencies and Ministries make the affair complicated.
- Radio Active Import Regulations also involve long lead time. The requirement of seeking permission from DGCA and BARC even before sources can be air lifted discourages airlines carriers to carry sources to India.
- Indian taxation is complex with multiple taxes as compared to other locations like Dubai, Singapore, Malaysia etc. There are multiple Central taxes viz. Income tax, fringe benefit tax, personal taxation, Customs duty, Service tax, VAT etc.
- Service tax law is in developing stage and needs more clarification. Service tax is major concern for oilfield service providers as it is open to several conflicting interpretations on the levy of service tax on oilfield services in India.
- In addition to the above, there are State levies like octroi, entry tax, stamp, works contract tax, lease tax etc. The rates of taxes vary from state to state.

- Custom clearance process takes long lead time and sometimes results in demurrage cost. Equipment brought in a particular custom zone cannot be freely shared among various operators. Also the current custom rate is on higher side. These aspects make it unattractive for companies to move assets in and out of India freely and slow down new technology introduction.
- Rig valuation methodology for customs duty calculations is not clear. Second Hand rig prices fluctuate significantly due to regional & global demand-supply scenario which leads to ambiguity and creates situations of litigations with customs authority. This is considered as disadvantage (additional cost) in mobilising rigs to India vis a vis other countries.

4.1.2 It may be noted that the concerns of service providers are of the following categories-

- **Fiscal** levies are high, constantly varying and non-uniform in states leading to inability take firm mid or long term business decision apart from its unattractiveness;
- **Regulatory** provisions are complex and often micro-managed leading to delays and unforeseen costs resulting into lower working environment rating of India;
- Personnel health, safety and environment (**HSE**) specially in fields is compromised to a great extent thereby human resources and companies reluctance coming in the way of business endeavours;
- **Infrastructure and logistics** links being weak, response to E&P companies can not be prompt and efficacious.

4.1.3 It is acknowledged that these or similar constraints are not faced only in India. Countries with developing economies and poor infrastructure also suffer from these aspects. Some developing countries, however, are privileged to receive attention of E&P companies as well as the service providers, due to the sheer proven prospectivity. Given the necessity to explore to prove the prospectivity and achieve higher production, India, at least in near term would not receive technology and cost benefits unless attractive ground is provided to service providers.

4.2 **The Solution**

4.2.1 All the four category of constraints can be overcome by the Government through specific measures, should the service industry be decided to be given special attention and benefits. This report tries to provide specific recommendations around these four constraints, which the Government may like to consider. The confidence that these

constraints can be overcome is owing to the fact that the industry despite being large value, can effectively operate from one or two locations in the country. This would uniquely position India for service providers to set-up facilities, not only to service E&P companies in India but also in the region. To blend with the facilities, India has unique advantage of educated human capital, low costs and IT services to attract the service providers.

5 Special Economic Zone Development in India

5.1 Requirement of Fiscal Benefits to Service Providers

5.1.1 In the dynamic market scenario, with strain on all resources of service providers and the untested business environment in India, most of the service providers are unable to see merit in dedicating special efforts to India. This includes opening up new technology centres, creating assets in India and recruiting and developing manpower resources. Under such a scenario, this report has examined providing attractive fiscal regime to these companies, to promote investment in India.

5.1.2 One of the most attractive business models with fiscal concessions offered by the Government of India through Ministry of Commerce is that of “Special Economic Zone (SEZ)”. The SEZ concept has certain characteristics which make it superior to competing concepts like EPZs as a framework for industrial development, export promotion and investment attraction. It packs in all that’s best and latest in thinking on industrial policy and strategy - a “big push” in creating world class infrastructure to attract MNCs and large investors, area-focused infrastructure development, a business-friendly operating environment, private investment orientation, private partnership in economic development, exploitation of core competence and inherent strengths, en-masse employment creation - in one potent bundle.

5.1.3 This being so, the SEZ may represent the future of E&P service industry development strategy, specially since all the services are most suited to be located together in near vicinity of the upstream industry.

5.1.4 In this chapter, the finer aspects of the SEZ model are captured to explain the attractiveness of provisions and qualifying criteria for business to avail the benefits. Elsewhere, later in the report the reasons of why E&P service businesses are not currently qualifying for the SEZ model and the special concessions that the Government may like to offer, have been analysed.

Factor	International Trend	India
Funding	Free zones have been “publicly” funded	Indian model envisages private financing of SEZs (Fiscal constraints place limitations on public funding of SEZs)

Main motivations	Economic and indirect benefits	Financial viability a key consideration
Zone marketing	Carried out mainly by governments	Indian model envisages private sector carrying out zone marketing (Unfamiliar experience for private sector)
Benefits / Incentives	Free zones were indeed “special” in their dispensation, as compared to domestic regime	Comparatively, Indian zones are less “special” due to an overall liberalized domestic regime
Investment Driver	FDI has been the main driver of zone investments	Domestic Investment may play an equally prominent role in Indian context.

5.2 SEZ Act Introduction

- 5.2.1 In India, a policy was introduced on 1.4.2000 for setting up of Special Economic Zones with a view to provide an internationally competitive and hassle free environment for exports. The policy provides for setting up of SEZ's in the public, private, joint sector or by State Governments. It was also envisaged that some of the existing Export Processing Zones would be converted into Special Economic Zones. Accordingly, the Government had converted following 7 Export Processing Zones into Special Economic Zones.
- 5.2.2 With SEZs acting as the vehicles of growth, the underlying policy objective of the Central Government was to increase India's economic growth and activity through increased foreign investment. For achieving this objective, the Government encouraged and enabled the establishment of SEZs by the State governments themselves, or in the private or joint sector in association with the State governments.
- 5.2.3 Meanwhile, a lot of time was spent in evolving an all-encompassing legislation called the Special Economic Zones Bill, which was introduced in Parliament earlier this year and passed subsequently. The Special Economic Zones Act, 2005, got the Presidential imprimatur on June 23, 2005. The Act, however, is yet to be notified, even though there

has been a tremendous surge in interest for the launch of SEZs, as is evident from the growing number of big industrial houses applying to the Board of Approval for putting up SEZs in many areas.

5.2.4 Mr. Kamal Nath, Minister of Commerce & Industry while tabling the bill in Parliament said, 'It is anticipated that the new law would trigger a large flow of foreign direct investment as well as domestic investment in infrastructure and productive capacity leading to creation of new employment opportunities.'

5.2.5 He also added, 'introduction and passage of this Bill will provide confidence and stability to domestic and foreign investors and signal the government's commitment to the SEZ policy framework. It is expected that many large format, multi-product SEZs that have so far been unable to achieve financial closure will now quickly move towards such closure.'

5.2.6 Further, approval has been given for setting up of 67 Special Economic Zones in various parts of the country in the private/joint sectors or by the State Government.

Product-wise

Particulars	No. of SEZ
Multi product SEZs	25
Product specific SEZs	42
▪ IT Sector	18
▪ Gems and Jewellery	03
▪ Handicrafts	03
▪ Apparel	03
▪ Auto components	03
▪ Telecom	01
▪ Free Trade Warehousing Zone	02
▪ Others	08

State wise

State	No. of SEZ	State	No. of SEZ
Uttar Pradesh	11	Madhya Pradesh	2
Haryana	3	Chandigarh	1
Punjab	2	Delhi	1
Rajasthan,	2	Gujarat	9
Maharashtra	5	West Bengal	4
Orissa	2	Jharkhand	2
Tamil Naidu,	7	Kerala,	5
Andhra Pradesh	2	Karnataka	7
Pondicherry	2		

5.3 Special Economic Zone - Objectives

5.3.1 In creating the Special Economic Zone (SEZ), the Government is guided by the following considerations:

- Generation of additional economic activity
- Investments promotion (domestic and foreign sources)
- Exports promotion (Goods & Services)
- Creation of employment opportunities
- Infrastructure development
- National interests & Global relations

5.3.2 The objective for setting up of SEZs in the country is to provide an internationally competitive and hassle free environment for exports. Units may be set up in SEZ for manufacture of goods and **rendering of services**. All the import/export operations of the SEZ units will be on self-certification basis. The units in the Zone have to be “net foreign exchange earner” but they shall not be subjected to any pre-determined value addition or minimum export performance requirements. Sales in the Domestic Tariff Area (DTA) by SEZ units shall be subject to payment of full Custom Duty and import policy in force.

5.4 Salient Features of Special Economic Zone

5.4.1 The salient features of the SEZ Act 2005 are as follows:

- The area designated as SEZ is deemed to be a territory outside the customs territory of India
- SEZ can be set up by Government (Central / State) or private sector or jointly
- Income tax holiday is available to a unit within the SEZ only for actual exports
- Multi-product & Sector specific SEZs may be set-up
- There is no restriction on sales to DTA, provided applicable duties are fully paid
- Only criterion for SEZ units is to be NFE +ve at the end of 5th year
- Certain DTA sales would be eligible to count as FE for NFE +ve calculation
- OBUs/ International Financial Services Centre are permitted

5.4.2 The cornerstone of SEZs is to facilitate a single window clearance for hassle free regulatory regime. The legislative framework has been consolidated to provide special courts/ single enforcement agency, with fiscal incentives of enhanced direct and indirect tax incentives, exemption from various cess and levies and liberal conditionality of no export commitments except the unit is to be net foreign exchange earner at the end of 5th year. In order to expedite development of SEZ, fiscal incentives have been extended to SEZ developers.

- Tax holiday for SEZ Units engaged in manufacturing or providing services - The following deduction would be available to units in SEZ which start manufacturing or producing articles/things or which start providing services on or after April 1, 2005:
 - First Five years – 100% of Profits
 - Next five Years - 50% of Profits
 - Next five Years - 50% of reinvested Profits

‘Export’ in relation to tax holiday means taking goods or providing services out of India from a SEZ

- Exemption from Capital Gains - Capital gains arising on transfer of assets (machinery, plant, building, land or any rights in buildings or land) on shifting of the industrial undertaking from an urban area to any SEZ would be exempt from capital gains tax.
 - The exemption would be allowable if within one year before or three years after such transfer:
 - Machinery or plant is purchased for the purposes of business;
 - Land or building is acquired or constructed for the purposes of business;

- The original assets are shifted and establishment of the industrial undertaking is transferred to SEZ; and
- other specified expenses are incurred
- The amount of exemption for capital gains would be restricted to the costs and expenses incurred in relation to all or any of the purposes mentioned above.
- Exemption from Minimum Alternate Tax (MAT) - Income accruing or arising on or after April 1, 2005 from any business carried on, or services rendered by SEZ unit would be exempt from MAT
- Tax holiday for Offshore Banking Units in SEZ - A deduction in respect of certain incomes would be allowed to scheduled banks or foreign banks having an Offshore Banking Unit in SEZ or to a Unit of IFSC.
- Tax holiday for SEZ Developers - A deduction of 100% of profits derived from the business of developing SEZ (notified on or after April 1, 2005) would be available to developer of SEZ for any 10 consecutive years out of 15 years beginning from the year in which SEZ has been notified.
- Exemption under section 10(23G) extended to investors in SEZ development - Exemption available under section 10(23G) to infrastructure capital company and infrastructure capital fund or a co-operative bank on interest and long term capital gains would be extended to investments made in SEZ development qualifying for tax holiday under section 80-IAB.
- Exemption from Dividend Distribution Tax (DDT)- No DDT would be payable by a Developer of SEZ on dividends declared, distributed or paid on or after April 1, 2005 out of current income from SEZ development.
- Exemption from Minimum Alternate Tax (MAT) - Income accruing or arising on or after April 1, 2005 from any business carried on, or services rendered by a Developer of SEZ would be exempt from MAT.

5.4.3 Indirect Tax Incentives - Entrepreneurs/ developers shall be eligible for following indirect tax exemptions, drawbacks and concessions:

- Exemption from customs duty on goods/ services imported into or exported by developer/ SEZ unit;
- Exemption from excise duty on goods procured from DTA by developer/ SEZ unit;
- Drawback or any other admissible benefits on goods brought or services provided from DTA or services provided from outside India;
- Exemption from service tax on taxable services provided to a developer/ SEZ unit;

- Exemption from securities transaction tax leviable, in case of taxable securities transaction entered into by a non resident through IFSC; and
- Exemption from levy of Central Sales Tax Act, 1956 on interstate sales or purchase of goods except newspaper.

5.4.4 To sustain existence in the SEZ, units have only one obligation to achieve i.e. to be net foreign exchange (NFE) positive. There is no requirement for a SEZ Developer to be NFE positive.

5.4.5 Net Foreign Exchange positive (NFE+) calculation shall be done cumulatively for a period of five years from the commencement of commercial production according to the following formula:

$$\text{Positive NFE} = A - B > 0$$

Where:

A: is Free on Board value of exports and permitted DTA sales

B: is the sum total of the CIF value of all imported inputs (raw materials, intermediates, components, consumables, parts and packing materials) and the CIF value of all imported capital goods and the value of all payments made in foreign exchange by way of export commission, royalty, fees, dividends, interest on external commercial borrowings during the first five year period or any other charges.

5.4.6 For this purpose, value of goods obtained from another SEZ or EOU or EHTP or STP unit or from bonded warehouses or procured from international exhibitions held in India or precious metals procured from nominated agencies, shall be included in B. Pro-rata CIF value of capital goods, imported duty free or leased from a leasing company, received free of cost and or on loan basis or on transfer for the period they remain with unit. For annual calculation of NFE, value of imported capital goods and lump sum payment of foreign technical know-how fee shall be amortized during the 1st to 10th year at the rate of 10% every year.

5.4.7 Draft Rules provide that certain supplies, made to the DTA, will be counted towards the purpose of fulfilment of NFE positive. Some of them are:

- Supplies against foreign currency payment (EEFC A/c or inward remittances)
- ITA-1 items (telecom and IT hardware/ software)
- Notified zero duty telecom or electronic items
- Supplies to -
 - Power projects & refineries
 - EPCG license holders or against Advance Licenses etc.

- Projects financed by international funding agencies
- Projects notified for zero customs duty
- Other SEZ/ EOU/ EHTP/ STP Units

5.4.8 Performance of unit shall be monitored by Approval Committee. If the Approval Committee finds that a unit has not achieved positive NFE (or failed to abide by any of the terms and conditions of the approval letter or bond cum legal undertaking, without prejudice to action which may be taken, including cancellation or revocation of Letter of Approval, the said unit shall be liable for penal action by the DC [such as payment of appropriate duties on goods admitted into SEZ (proportionate to the unfulfilled portion of NFE) along with applicable interest, if any].

6 The Proposed PEZ

6.1 Activities in Service Industry

6.1.1 The National Working Committee (NWC) has conceptualised a hub of E&P service providers. The Government having enacted the SEZ Act and that being very attractive for International companies to invest into India in a hub model, it is suggested that this hub be on the lines of SEZ. This hub may be christened as “Petroleum Economic Zone” (PEZ). The PEZ(s) would be able to house the following –

- Service providers' offices,
- Technology development (R&D) centres,
- Data analysis labs,
- Skill development centres,
- Experts hub,
- Repair and maintenance centres,
- Machining facilities,
- Warehouse of speciality materials/equipment/chemicals,
- Terminal operations,
- Drilling related operations,
- Civil Engineering & Construction facility,
- Pipe Coating,
- Supply Boat Services,
- Environmental Services,
- Well-head services,
- Diving support,
- Dredging services,
- Catering services,
- Inventory equipment suppliers,
- Airfreight services,
- Airfreight carriers,
- Shipping agents,
- C&F agents, etc.

6.1.2 In addition to the businesses of service provider industries, the PEZ would house the liaison centres of service providers, allied administrative and logistics support agencies and utility supply stations.

6.2 Locations for PEZ

6.2.1 The PEZ would be inclined to be set up where the E&P activity centres are. The current state policies and the benefits provided by the SEZ Act would tend to decide the location of the PEZ. If the current E&P activity is any indication, the maximum activity is on the Western coast. The Eastern coast has also attracted attention of E&P companies due to gas discoveries in KG basin. The determinants for setting up such a PEZ would largely be the following-

- Strong support by the local government,
- Quantum of projected activity of absorption of services in that location,
- Easy access and proximity to active location,
- Convenience to service the region (neighbouring countries)
- Infrastructure including port facility, Road, Rail links, Airports
- Robust communication facilities including telephones, network, IT enablement, data transfer network, etc
- Logistics facilities like ware housing, material handling, etc

6.2.2 The location of blocks being explored and to be explored is largely expected to be offshore, both on West and East coast. The necessity of servicing them and also encouraging service providers to use the benefits to excel in their businesses by servicing the regional market as well, leads us to explore a coastal or near coast location for such a PEZ. The coastal location offer logistic value chain advantage. For the purpose of getting infrastructure, communication, and connectivity, proximity to an urban location may also help.

6.2.3 At present most of the service providers, big or small have naturally been operating from Mumbai or around since the hub of activity rests there. A location near Mumbai may also be considered to encourage existing companies to expand/relocate into the PEZ.

6.3 Advantage available in PEZ

6.3.1 Service providers located in PEZ would have following benefits:

- Income tax holiday is available to a unit within the PEZ not only for exports but for income from providing services in India
- Exemption from Capital Gains
- Exemption from Minimum Alternate Tax
- Exemption from customs duty on goods/ services imported into or exported by E&P service provider;

- Exemption from excise duty on goods procured from India by E&P service provider;
- Drawback or any other admissible benefits on goods brought or services provided from India or services provided from outside India;
- Exemption from service tax on taxable services provided to E&P service provider
- Exemption from levy of Central Sales Tax Act, 1956 on interstate sales or purchase of goods
- Exemption from various cess and levies
- Single window clearance for all regulatory approvals
- Special courts/ single enforcement agency
- Foreign Exchange Earning to domestic earnings received from domestic E&P companies will be considered for NFE+ condition evaluation
- Availability of highly talented labour pool in India
- 24 Hour Service Window
- Preference by Indian E&P companies for E&P services opportunity
- Preference by Indian E&P companies for overseas E&P services opportunity
- Easy access to Middle East, South East Asia etc.

6.3.2 Indian direct tax regime offers attractive provisions for R&D companies and it will be available to companies who carry out technology development in SEZ, subject to the provisions of tax laws. This would also be a benefit for technology and service provider companies when they invest in technology development in India provided it is approved by prescribed authority as per Section 35 (2AB) of Income Tax Act. Section 35 (2AB) of Income Tax Act, 1961 providing weighted deduction on scientific research expenditure is reproduced below.

6.3.3 *Section 35 (2AB)(1) Where a company engaged in the business of [bio-technology or in the business of] manufacture or production of any drugs, pharmaceuticals, electronic equipments, computers, telecommunication equipments, chemicals or any other article or thing notified by the Board incurs any expenditure on scientific research (not being expenditure in the nature of cost of any land or building) on in-house research and development facility as approved by the prescribed authority, then, there shall be allowed a deduction of [a sum equal to one and one-half times of the expenditure] so incurred.*

[Explanation.—For the purposes of this clause, “expenditure on scientific research”, in relation to drugs and pharmaceuticals, shall include expenditure incurred on clinical drug trial, obtaining approval from any regulatory authority under any Central, State or Provincial Act and filing an application for a patent under the Patents Act, 1970 (39 of 1970).]

(2) No deduction shall be allowed in respect of the expenditure mentioned in clause (1) under any other provision of this Act.

(3) No company shall be entitled for deduction under clause (1) unless it enters into an agreement with the prescribed authority for co-operation in such research and development facility and for audit of the accounts maintained for that facility.

(4) The prescribed authority shall submit its report in relation to the approval of the said facility to the Director General in such form and within such time as may be prescribed.

(5) No deduction shall be allowed in respect of the expenditure referred to in clause (1) which is incurred after the 31st day of March, 2005.

7 Attracting Service Providers

7.1 Indian SEZ regime needs to be customised to attract oilfield service providers

7.1.1 One major indicator of the level of development of an economy is the percentage of the GDP that is contributed by the Services sector. As the economy grows, the contribution of the services sector increases, and manufacturing and other sectors share declines. Most SEZs have been set up in developing countries, and the focus has been on the manufacturing sector. However, India's case is different – its highly educated workforce has enabled India to achieve a 50% contribution to its GDP – a level that may not sit well with the traditional model of the sector's contribution to GDP being an indicator of development level.

7.1.2 Given its unique characteristics, India must devise its own policies to further foster and grow the critical services sector – there really are no easy beaten paths to follow from the SEZ experiences of other developing countries

7.1.3 Policy for Special Economic Zones in India provides an internationally competitive and hassle free environment for exports. Units may be set up in SEZ for manufacture of goods and rendering of services.

7.1.4 SEZ Act 2005 defines "Services" : "Services" means such tradable services which,-

- are covered under the General Agreement on Trade in Services annexed as IB to the Agreement establishing the World Trade Organisation concluded at Marrakesh on the 15th day of April, 1994;
- may be prescribed by the Central Government for the purposes of this Act; and
- earn foreign exchange

7.1.5 Implication of the Definition:

- All services that are not exclusively provided by the state become tradable services under SEZ legislation.
- Government needs to list all the "services" to meet the requirements of SEZ legislation
- The unit in SEZ needs to earn Foreign Exchange

7.1.6 Since the main objective of attracting Technology & other oilfield service providers is to facilitate domestic E&P activities, SEZ policy needs to be customised to attract technology & other oilfield service providers to set up base in India.

7.2 E&P Services be Qualified for SEZ

7.2.1 In view of the foregoing, one of most important requirements for the service providers to qualify for SEZ benefits is that the Government needs to prescribe the E&P Technology & other service provisioning as eligible for the purposes of the SEZ Act.

7.2.2 It is learnt that the Government is in the process of announcing the services which qualify for benefit under SEZ Act. The plea is to include the E&P sector related services in that list.

7.3 E&P Services in India be Qualified for NFE+ Condition

7.3.1 Central Government needs to clarify the meaning of the clause in the Act; “earns foreign exchange” for the companies to enjoy the benefit of SEZ under NFE+ condition. Especially in the case of E&P service providers, a special dispensation needs to be given.

7.3.2 Since the service providers are being encouraged to be based in India to service E&P companies in India, the earnings are expected to be in Indian Rupee rather than in Foreign Exchange. These earnings, in the opinion of service providers are however, displacing the Foreign Exchange outgo of E&P companies in India. Currently, most of these services received by E&P companies are imported, necessitating payment in Foreign Exchange. Indian as well as foreign service providers, in case of international competitive bidding, bid for such services in Foreign Exchange and get paid accordingly. If these services are available within country, the outgo is saved and therefore deserves to be treated as deemed Foreign Exchange earning.

7.3.3 The Government, therefore needs to allow treatment as Foreign Exchange Earning to domestic earnings received from domestic E&P companies for NFE+ condition evaluation.

7.3.4 Preliminary assessment of the SEZ Act indicates that such treatment is available to supplies/services to Refineries.

7.4 Other Fiscal policies and compliances to facilitate E&P service industry

7.4.1 Taxation of expatriates rendering technology & other oilfield services in India is considered comparatively high vis a vis Dubai, Singapore, Malaysia etc. and needs to be rationalised and simple.

7.4.2 Currently there is different custom duty regime in different parts of the country which makes it necessary for the Government to ensure that there is no cross utilisation of equipment among different regimes. The notifications under customs act related to

customs duty exemptions needs to be rationalised to provide uniform exemptions throughout the country. This will lead to ease in movement of equipments and administratively convenience to Government in monitoring the activity.

7.4.3 Service tax applicability on drilling and exploration activity lacks clarity and is open to several conflicting interpretations. Oil field services being priority sector and capital intensive and is eligible for customs exemptions. Similarly, it may also be considered for Service tax exemption. Some Common Issues that need to be addressed for Service SEZs are as follows -

Issue	Suggested Treatment
SEZ Service Unit to be NFE+	Consumers from abroad (Foreigners, NRIs/PIOs) to pay for services in foreign exchange. DTA consumers to pay in Rs (except for predefined list of "import substitution" or "deemed export" services for which RBI would permit release of foreign exchange.
Customs Duty/ Excise etc exemptions on Capital goods and development activities	To be fully exempt as in case of all SEZ developers/units
Customs Duty/ Excise etc exemptions on consumables and other goods needed for operation of the Unit	To be exempt pro-rata. Portion used for export of services to be exempt. Portion sold to DTA consumers to be taxable at par with DTA units.
Service Tax (on Input services)	Accordingly, the exclusion of educational institution, hospitals, hotels etc from availing input duty benefits on procurements for operation and maintenance (as stated in the Draft Rules) would need to be removed for all such facilities operating as SEZ units in the processing area of the service SEZ.
Income Tax Holiday	At par with normal SEZ units/developers
Administration – DC/ Unit Approval Committee	At par with normal SEZ units/developers
Division of the SEZ into processing and non-processing Zone	Since the focus is on service, there should be no barriers within the Zone – free access would be essential for excellent service. The whole Zone to be treated as a processing Zone
Education – AICTE/UGC etc	These would need to be relaxed (in terms of fixation of fees, treating education as a for-profit activity) etc – to be

guidelines	able to attract the best education providers and students from abroad. If the SEZ rules and regulations provide for these, would the over-riding powers in Section 51 of the SEZ Act ensure that this is achieved?
FTWZ	Rules to explicitly provide that CFS/ICDs are permitted activities in the FTWZ

7.5 Easing up Regulatory and other Clearances

- 7.5.1 By virtue of PEZ being a centre for E&P service provider activities, it is expected that the customs and other clearances relating to importing material, equipment and consumables either for trading purposes or for return after usage, would ease up to quite some extent. This is owing to the possible single window clearances and by virtue of similar types of trades occurring resulting into the official familiarity with usage, categories and deployment patterns.
- 7.5.2 As regards the policies by virtue of which the clearances are required to be obtained by E&P companies and/or service providers, from MoPNG and/or other Ministries, a separate review may be undertaken to facilitate removal of constraints with an objective to minimise time required for obtaining these clearances. To the extent possible, allowing Self Certification may also be explored and policies amended accordingly.
- 7.5.3 The MoPNG is evaluating single window clearances for the operations for E&P companies and may also explore ways to extend that facility to service providers.

8 Destination India – Hub for Technology and Oilfield Service Providers

8.1 Advantage India – Potential, People & Cost

8.1.1 The global emerging scenario is that of growing dearth of E&P professionals for operators as well as service providers. Weak energy prices in the mid 80's and 90's has caused acute shortage of E&P professional in the west with the following implications:

- Fewer graduates emerging from Universities in developed nations with Petroleum related degrees
- 50% reduction in the talent pool of E&P professionals over the last 18 years
- Ageing workforce: Average 44+
- Survey by API of 22 companies in E&P indicates by 2009 hiring needs for Earth Scientists and Engineers to escalate by 38% of current workforce:

Disciplines	Hiring Needs	% of current staff	22 companies surveyed
Engineers & geosciences <i>(includes analysts or Technologists)</i>	8,957	38%	Oil Service Baker Hughes, Halliburton, Schlumberger, Varco Independent Anadarko Petroleum Company, Apache Corporation, Burlington Resources, Devon Energy Corp, EOG Resources, Occidental Petroleum Corp, Sunoco Inc., Tesoro Petroleum Company, Unocal Corporation, Valero energy Integrated
Operations, Maintenance & instrumentation/ Electrical	12,729	28%	Amerada Hess, BP plc, Chevron Texaco, Marathon Ashland, ConocoPhillips, Marathon Oil Company, Murphy Oil Company, Shell Oil Company
HSE Professionals	525	26%	

8.1.2 Most frequently identified scarce skills by participating companies:

- Geology
- Geophysics
- Petroleum/ Production operators
- Mechanical/ Electrical Engineering

8.1.3 Over 100 of Fortune 500 Companies have set-up R&D bases in India. These R&D bases have been remarkably cost-effective. 100 Fortune 500 companies - including Delphi, Eli Lilly, Hewlett Packard, General Electric, Daimler Chrysler and others - have put up R&D facilities in India over the past five years.

8.1.4 India offers following advantages/incentives to International companies who are providing technology and services to their clients globally which can also be leveraged by Technology & Oilfield services providers.

- Availability of highly talented labour pool
- Cost Arbitrage - "One Singaporean worker costs as much as 3 in Malaysia 8 in Thailand 13 in China 18 in India."- *Source: The Straits Times/August 18, 2003*
- Leapfrog increases in Telecom reliability in 90's
- Faster Time to Market
- 24 Hour Service Window
- Strong growth Potential for E&P services.
- Large pool of intellectual capital
 - 250 universities and 12,600 higher education institutions
 - 5,000 PhDs and 200,000 engineers
 - Indian youth has greatest interest in Science and Technology
 - Nine Indians among top 100 young innovators of 2004 identified by MIT's - *Technology Review Magazine*
 - IITs, IISc and NITs feature among the world's best institutes Global recognition of Indian brains and skills
- Rapid approach to globalization
- English as a medium of education

8.1.5 Today the world recognizes India as an important source of high quality IT manpower. 75 out of total 116 SEI CMM level 5 certified companies worldwide are Indian. Further, over 300 Indian computer software and services have already obtained ISO 9000 or CMM level 2 certification. One third of the e-commerce start-ups in the Silicon Valley continue to be by Indians. Over half of the Fortune 500 companies are outsourcing their software requirements to India. India has now emerged as the hub of the sun-rise knowledge based and technology driven industries such as information technology, bio-technology, bio-informatics, telecommunications, aerospace.

8.1.6 India has already received recognition as the outsourcing hub of ITES / business process outsourcing services, cost effective medical lab, diagnostic, and health services, dental services, automotive parts and ancillaries etc in the world.

8.2 **Large talent pool of Earth Scientists/Engineers emerging from Indian Universities**

8.2.1 In India there exists a talent pool of slightly over 400 post graduates in Earth Sciences/ Engineering from leading universities along with 350,000 engineers in various disciplines.

8.2.2

Table: Leading Indian universities and number of post graduates

Course/ Name of Institute	Geophysics	Pet. Eng.	Geology
ISM	10	18	20
IT, Rourkee	20	0	20
IT, BHU	20	0	20
Andhra University	20		20
IIT, Mumbai	12		17
IIT Kharakpur	10		15
Kochin University	11		11
Kurukshetra University	15		15
Osmania University	30		40
MIT Pune		20	
Jadavpur University			25
Kolkata University			28
Total	148	38	231

8.3 **India – The preferred offshore destination for making hub**

8.3.1 India has already been acknowledged by many corporate as a rewarding location to set up bases, so as to be able to leverage on talent pool, low cost and existing IT and other skills. The following citations echo these sentiments. E&P service providers would equally be benefited from operating from India, which would need to be promoted by offering the necessary to remove constraints from their way.

Aker Kvaerner, a Anglo-Norwegian engineering and construction major - Reinstating the confidence in its Indian subsidiary, parent Aker Kvaerner International has decided to make India the hub for design and sourcing of hardware, which also includes deep sea oil exploration equipment. Oslo, Aberdeen and Texas are the other three design hubs for Kvaerner.

General Electric - Jack Welch - "A truly global company will be one that uses the intellect and resources of every corner of the world. India is a developed country as far

as intellectual capital is concerned. The opening of (offshore) development centres mark a new level of commitment by GE in India."

Financial Times, March 6, 2003 "GE is a champion of India's scientists, technicians, business analysts and graduates, thousands of whom work at the U.S. conglomerate's offshore service centres in India. They are the low-cost, high capability vanguard of GE's outsourcing to India. Along the way, GE has transformed its cost structure, enhanced its ability to provide technology services and incubated a rare world-class industry in India."

Motorola - Mike Zafirowski, President and COO -technology company would fail in its IQ test if it did not have anything significant in India. There's quality, speed, process orientation in India and at a cost that's still attractive."

Microsoft - Bill Gates "Three years ago, during my visit to India, the country was emerging as an IT superpower. Today, the country is handling the most sophisticated projects in the world...I am impressed with the talent we have in our India Development Centre and the quality of software being developed."

8.4 Emerging Trends in the last two years

8.4.1 The recent trends as listed below would further reinforce the attractiveness of India :

- Silicon Valley VCs setting shop in India.
- US companies relocating up to 95% of R&D work in next generation technologies especially in the
 - Wireless space & optical networking systems.
 - Intel, Cisco doing core development work on chip design.
 - Texas Instrument has its global centre for wireless LAN & semi-conductors R&D based in India
 - Tech Multinationals have filed 1, 700 global patents for product developed out of India
 - Automotive engineering design services (AEDS) projects – already executed \$ 500 million worth of
 - Global Contacts – Bosch's Indian team does major chunk of Diesel systems development in India

8.5 India - Hub for Technology & Oil field service providers

8.5.1 Information Technology is the platform and motor for the new 'Technologies' of the future. India with its advanced cutting edge technical capabilities is poised to become the prime hub for the 'New Technologies' of the Knowledge Society. Technology and

Oilfield service providers can take advantage of cost arbitrage of manpower and technology development to provide services in India, Asia Pacific, Middle East and other parts of the worlds.

9 International Success Stories – Service Industry in SEZ

9.1 Evolution of SEZs

9.1.1 Trade Zones have emerged as a consequence of recent developments in world trade -- from the era of excessive protectionism to the days of intense competition. The development of export-oriented policies has frequently been considered a pre-condition to successful operation of Zones. Such policies need include incentives, specific subsidies and freedom from selected regulations. Trade Zones do play a strategic role in the development of trade and many of such zones exist in the world today. Depending upon the ultimate objectives of the host country, there exist different forms of Trade Zones, the common ones being, Export Processing Zones (EPZs), Free Trade Zones (FTZs), Special Economic Zones (SEZs), Export Processing Units (EPUs) and Special Customs Privileged Facilities. Although these zones may vary in nature from country to country, some basic features apply. Any Free Zone is a well delineated, enclosed and policed area of a country, which operates under special conditions for the manufacturers of goods, and provisions of services. The characteristic features being geographic separation and focus on export processing activities with mainly foreign participation.

9.1.2 A Special Economic Zone (SEZ) or a Free Trade Zone (FTZ) is a specially delineated geographical region within a country, and is accorded the status of “deemed foreign territory” for the purposes of applicability of some or all economic laws. These laws are either not effective in an SEZ, or are applied differently, so these special policies and flexible measures result in liberalizing the country’s trade and investment environment and increasing foreign investment. The basic economic characteristics of an SEZ are as follows:

- Increasingly, SEZs are being developed primarily by attracting or utilizing foreign capital.
- Largely characterized by foreign joint ventures and partnerships as well as wholly foreign-owned enterprises
- Products are primarily for export
- Economic activities are primarily driven by the market

9.1.3 The evolution of EPZs occurred as a response to changes in the global pattern of investment. The advanced economies faced with declining competitiveness due to rising domestic production cost, which combined with ease of transport and communication, provided the impetus for relocating certain production activities --

particularly labour intensive ones -- to the developing world. Most developing countries have taken advantage of these to advance their economies. Ready examples are Malaysia and Indonesia

- 9.1.4 The SEZ concept has certain characteristics which make it superior to competing concepts like EPZs as a framework for industrial development, export promotion and investment attraction. It packs in all that's best and latest in thinking on industrial policy and strategy - a "big push" in creating world class infrastructure to attract MNCs and large investors, area-focused infrastructure development, a business-friendly operating environment, private investment orientation, private partnership in economic development, exploitation of core competence and inherent strengths, en-masse employment creation - in one potent bundle. This being so, the SEZ may represent the future of industrial development strategy.
- 9.1.5 China, where the SEZ concept originated, has notched up several flagships SEZ-policy-induced successes, including Shenzhen, which was transformed from an outback fishing village into a manufacturing colossus having an annual foreign trade of \$50 billion.

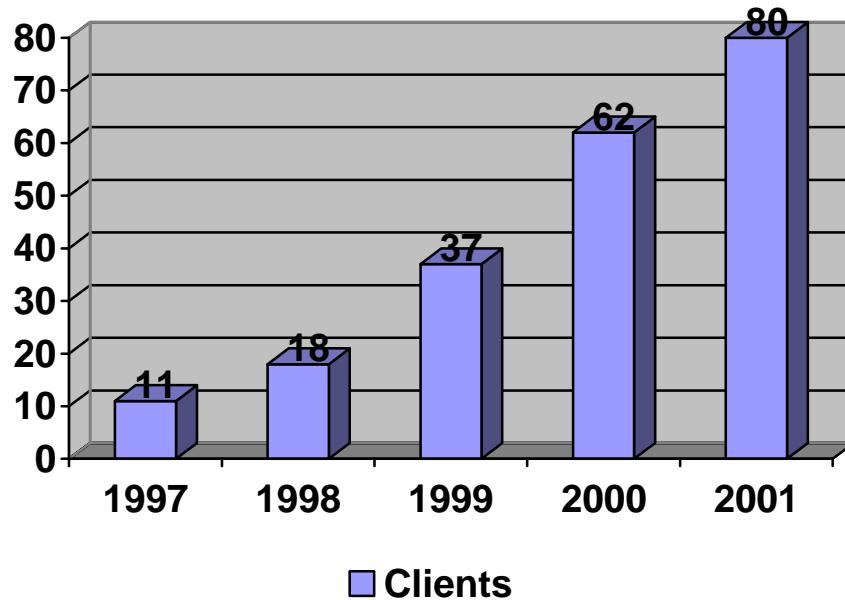
9.2 **Onne Oil and Gas Free Zone in Nigeria**

The only Free Zone in the world dedicated solely to the oil and gas industry

- 9.2.1 Onne Oil & Gas Free Zone which is located in the heart of Nigeria's main Oil and Gas production areas provides the ideal location to establish Sub Saharan 'Distribution Hub'. It is the fastest growing dedicated Oil & Gas Free Zone in the World. It has become the largest Oil & Gas Free Zone – Transit and Supply Base in the World. Also it is considered as the largest Oil & Gas Free Zone Oil Service Centre in the World
- 9.2.2 The Onne Oil & Gas Free Zone, south of Port Harcourt in Rivers State, was established by the Nigerian Federal Government to provide the ideal infrastructure from which to create a distribution 'Hub Base' to service not only Nigerian onshore and offshore fields but also to provide easy access to the entire West African and Sub Saharan oilfield operating areas. The Free Zone became active in early 1997 and quickly took off by attracting many of the major oilfield operators who recognised the distinct advantages that the Free Zone could provide with unique facility. The ability to service the high speed requirements and demands of the Oil & Gas industry has led Onne Oil & Gas Free Zone to the forefront to become the World's Premier Oil & Gas Free Zone
- 9.2.3 This was a 'First' for Africa and, more importantly, became the leading and premier Free Zone facility dedicated to the Oil & Gas sector. All the major Oil producing and Oil

Services Company have their own facilities inside the Onne Free Zone. To date, the Free Zone can claim the following Customers commitment since its inception.

Onne Free Zone, Nigeria - Clients Operating



- 9.2.4 Various planned development programmes of the industry in offshore West Africa required engineering construction companies and other service providers to set up their yards in the region. The oil and gas free zone in Onne had been packaged to facilitate the realization of this, which made Nigeria the hub for servicing the oil industry in the sub-region. One of the primary objectives of seeking improved local content in the oil and gas industry is the transfer of technology that would link the oil industry to other sectors of the national economy.
- 9.2.5 The Onne Oil and Gas Free Zone was officially opened in March 1997 and it has gone from strength to strength. More than 30 international oil and gas companies, including many of the world's largest corporations, are now registered as Free Zone users and cargo throughput has increased rapidly.
- 9.2.6 Onne Oil and Gas Free Zone, managed by DMS International Ltd, is the only Free Zone in the world dedicated solely to the oil and gas industry. This bold initiative is a major success story for Nigeria. It is also very important for the local community, where it supports numerous jobs and has helped to drive forward infrastructural development.
- 9.2.7 Nigeria has invested heavily in the development of Onne Port, upgrading both the Federal Lighter Terminal and the Federal Ocean Terminal and continues to improve

quayside facilities, communication links and other services. At the same time the Private Sector has been heavily investing in the Free Zone. The Onne Oil and Gas Free Zone help to strengthen Nigeria's position as sub-Saharan Africa's leading oil producer. It also places Nigeria at the heart of the current West African oil boom.

9.2.8 The implementation of the Onne Oil and Gas Free Zone was the object of a detailed and thorough process. From promulgation of the Decree in March `96, to its ratification by an Inter-Ministerial meeting in July 97. This involved various Government Arms, collating their efforts through an Inter-Ministerial Technical Sub-Committee. The Committee worked in collaboration with the Free Zone Management Consultants and also the "Potential Users."

9.2.9 The Free Zone is supported by an Oil Service Centre and other facilities to provide oil companies and service companies alike with virtually everything they need to operate. Most importantly, the Free Zone offers a highly competitive range of tax concessions plus other investment incentives including minimal bureaucracy, to ease the flow of business.

9.2.10 The initiative has proved popular so far and is expected to play an important future role in meeting the needs of domestic and foreign firms within the oil and gas sector. Onne Oil and Gas Free Zone is now the largest and fastest growing oil and gas transit and supply base in the world today.

9.2.11 West Africa is expected to see a phase of unprecedented growth over the next few years fuelled by developments in the energy sector. International companies, attracted to the region by its status as a major low cost oil producer and attracted by the growing potential of natural gas, are becoming increasingly interested and ready to commit levels of funds previously unheard of in the African region. It was decided by the Committee that Onne Oil and Gas Free Zone would be a "mix" of various types of Free Zone, at various stages in its evolution:

- Firstly, a Free Port.
- Secondly, a Free Trade Zone.
- Ultimately, a Specialized Export Processing Zone.

9.2.12 It was agreed by the Committee that an "Approved Strategy" needed to be agreed upon for the successful development of the Onne Oil and Gas Free Zone. Firstly analysing and matching Government, and Potential Users objectives.

9.2.13 Government Objectives

- Foreign Investment
- Capital Growth
- Technology Transfer
- Employment Opportunities
- Skills Acquisition
- Revenue Generation

9.2.14 Potential Users' Objectives: All sectors of the Oil Industry, Oil Producing Companies, Oil Service Companies, Oil and Gas Project Companies and Down Stream Companies had specific expectations.

9.2.15 Oil Producing Companies:

- Facilitating their procurement and logistics requirements for Exploration and Development programmes. So as to satisfy their "just in time" policies for offshore requirements.
- Co-ordinating a regional procurement approach.
- Major cost savings due to the reduced inventories required when utilising the "stockist" concept.
- Ability to share both facilities and services.

9.2.16 Oil Service Companies:

- Facilitating specific or specialised services to Oil Producing Companies.
- Regional distribution centre.
- Better environment for development of local content.

9.2.17 Oil and Gas Project Companies: Logistics or regional base.

9.2.18 Down-Stream Industries: Long term objectives for export orientated projects.

9.2.19 Role of Government to be limited to:

- Providing the best possible infrastructure "surrounding" the Free Zone
- Road and Rail Links
- Enhancing Port and Airport
- Electrification
- Communication
- Providing funding for fencing and building of administrative building.

- Initial funding of the Management.

9.2.20 It being understood that the Free Zone Management would progressively be able to generate its own revenue, with a view to reaching a self-financing situation as quickly as possible.

9.2.21 Onne Oil and Gas Free Zone is playing a major role in the development of the West African oil and gas industry with a unique package of incentives and strategic advantages unrivalled throughout the rest of the sub-region. Ideally located in the heart of the Gulf of Guinea region, the Nigerian government has resolved to create a strategic centre of excellence and efficiency for all oil operating companies and service and equipment suppliers.

9.2.22 A range of financial incentives are available to investors looking to set up operations within the Free Zone similar to those offered by other successful Free Zones throughout the world. The Onne Oil and Gas Free Zone also offer a whole range of other strategic benefits to companies specifically within the oil and gas sector.

9.2.23 Among the general incentives offered by the Onne Oil and Gas Free Zone are quick and simple registration procedures; no red tape; faster services; easy cargo customs clearing procedures; plus fast track procedures at Lagos and Port Harcourt international airports for all visiting and Free Zone expatriate personnel. In other markets around the world, Free Zones have been instrumental in boosting industrial and economic growth and Onne Oil and Gas Free Zone is designed to strengthen Nigeria's future role in the regional oil and gas industry. Among the advantages for Nigeria in establishing the Free Zone are greater levels of foreign direct investment; technology transfer; manpower development; provision of employment opportunities and greater economic self-reliance.

9.2.24 The Nigerian government had invested in the infrastructure to support the Free Zone and is determined to see the facility grow into a major hub of activity. Supporting the region's energy industry, it is located close to major projects such as the Nigerian Liquefied Natural Gas plant at Bonny Island but within easy reach of offshore developments further a field.

9.2.25 Standard Free Zone Incentives

- 100% Import and Export Tax Exemption
- 100% Exemption from Commercial Levies
- 100% Repatriation of Capital and Profits

- 100% Foreign Company Ownership
- Leases available from 5 to 21 years
- No Quotas for Expatriate Employees

9.2.26 Taxation

- No Corporate Taxes
- No Personal Income Taxes
- No V.A.T.
- No With-Holding taxes
- No Levies
- Specific Onne Advantages
- Customs privileges for goods consigned to Onne Oil and Gas Free Zone, including Goods in Transit to other West African Territories.
- No pre-shipment inspection – Goods are not consigned to Nigeria
- Duty Free Stock, Equipment, Spare Parts, Pipes
- No double handling in and out of Nigeria
- Access to major projects On-shore, Off-shore and Regionally
- Cost Efficient Operations
- Sophisticated Oil Service Centre Support

9.2.27 Logistics Centre For West Africa

- Easy Clearing Process
- Duty Free Status for Imports
- Pre-shipment Inspection in the Free Zone
- Duties paid on Goods Exported to Nigeria
- Sea - Air Logistics
- No red tape - faster services
- Minimal Bureaucracy
- Easy Registration

Realisation of Governments objectives

9.2.28 Investments & Capital

- More than \$300m has so far been invested by the Private sector into the Free Zone.
- Ministry of Commerce's direct investment within the Free Zone is less than \$12m.

- Port Authority's considerable investment in the new facilities completed in the last six years, have all been self financing.

9.2.29 Employment

- More than 4,000 people are now employed by the private sector, Free Zone Licensees, at Onne.
- More than 700 public servants are working at Onne for government agencies and authorities.

9.2.30 Skills and Transfer of Technology

- Several of the Free Zone Licensees have taken the Onne Free Zone opportunity to transfer to Nigeria some of the activities previously performed overseas.
- Such transfers have thereby contributed greatly to the increase of "local content" within the Oil Industry.
- These include: equipment stockist; pipe coating; cement plants; waste management; dry dock; specialised maintenance services.

9.2.31 Revenue

- Cost of Oil –indirect, but very substantial, revenue savings by government.
- Made through large savings in the cost of Logistics in the exploration and development of Nigeria's oil fields.

9.2.32 Port Authority Revenue

- Substantial revenue generation for NPA. Including the creation and control of new sources of revenue within the Oil Industry.
- These are self-financing all NPA infrastructure improvements and developments at Onne.

9.2.33 Customs (NCS) Revenue: Improved control and revenue "facilitation" for the Nigerian Customs Service.

9.2.34 Free Zone Management Revenue: Progressively increasing, enabling the Free Zone Management to be self financing by 2003.

9.2.35 Services (companies present) provided in The Free Zone

- Terminal Operators: (Brawal, AMS, WACT, INTELS)
- Drilling Chemicals And Mud: (Baroid, Baker Hughes, MI Drilling Fluids, Star AP, Best Land and Sea)
- Cement And Additives: (Halliburton, BJ Services, Schlumberger)

- Drilling Contractors: (Global Marine, Saipem, Transocean, Sedco Forex, Mallard Bay, Noble Drilling, R&B Falcon)
- Project Companies: (JB, B & B, Nuova Cimi Montubi, Soimi, Saipem , Daewoo, Dresser Kellogs, Brown & Root)
- Civil Engineering & Construction: (Murray & Roberts, Prodeco, Ascot Oil),
- Cement Factory And Distributor: (Rock Cement, Atlas Cement,)
- Pipe Coating: (Socotherm, Bredero Price)
- Supply Boat Services (Seacor, Maersk, Tidex, Surf, Interoil, Sea Bulk, Edison Chouest, Walvis, Smith, Lamnalco, Adnan, Adamac)
- Service & Tool (Anadrill, FMC, Baker Oil Tools, Geoservices, Cooper Cameron, Weatherford, BJ Tubulars, Wasco, Frank's)
- Environmental Services (Delta, ITS, CNA)
- Well-Head Services (Cooper Cameron, ABB, FMC, Kvaerner)
- Driving (Oceaneering, Sea Weld, Nigerian Submarine Divers, Hydrodive)
- Dredging (JB)
- Inventory Equipment Supplier (Wasco, McJunkin, Pressure Valve, Unistockists)
- Catering (Sodexo/Universal Catering, Pellegrini, West Africa Catering Services)
- Shipping Lines (Maersk- Sealand, Torm, HMT/UAL, Saima, Safmarine, Baco Liner, OTAL & ASB)
- Airfreight Carriers - Air France, DAS, Panalpina
- Airfreight Services - ASB, Panalpina & SDV
- Shipping Agents - Maersk, SDV, Murphy, Comet, Interserve Gulf Agency & PWT
- Clearing & Forwarding Agents - SDV, PWT, Joe-Eboje & Murphy

9.2.36 Fast Track Airfreight Service

- Implemented June 1999
- Cargo arrives on Aircraft at midnight
- Free Zone cargo is separately manifested
- DMS processes documentation
- Pays Airport dues
- Transports cargo with own vehicles
- Under Customs Escort
- Arrives in Free Zone within 18 hours

9.2.37 Market Access/Strategic Location: Distribution Centre For West Africa

- Nigeria

- Douala - Cameroon
- Malabo - E. Guinea
- Port Gentil - Gabon
- Pointe Noire - Congo
- Malongo - Congo
- Soyo - Angola
- Luanda - Angola
- Saõ Tomé & Príncipe
- Abidjan

9.3 **Malaysia – Hub for Fabricating Platforms and Decks**

9.3.1 Malaysia is one of the favourable locations of oilfield service providers. It provides ease of doing business in form of convenient process for setting up office (local company), absence of customs regulations on Import/Export, suitable location to serve Asia, No Fringe benefit tax, low direct tax rate compared to India, Contractual conveniences in form of simplified legal framework etc.

9.3.2 The resources that the big multinational oil corporations brought to Malaysia including technical skills and experiences in managing complex high risk investments and strong financial assets played a significant role in enabling Malaysia to join the ranks of industrial nations.

9.3.3 The expansion of their industry also boosted the development of steel fabrication in Malaysia as local companies built structures such as platforms and decks to support offshore petroleum operations. Local fabrication has not only created additional employment opportunities for Malaysia but has saved the country substantial foreign expenditures. Working with these multinationals, Malaysians succeeded in gaining knowledge and achieving technology transfer such that they have now mastered petroleum technology sufficiently enough to offer their services elsewhere in the world.

9.4 **Singapore – Oil rig building yards hub**

9.4.1 Singapore is one of the preferred destinations for oilfield service providers as it is considered to be cost effective in terms of operational costs, property costs, taxation benefits, good supply of infrastructure (communications, transportation support, human resources etc.), strategically located and supported for logistics, minimum administrative procedures for import and exports.

9.4.2 Keppel and SembCorp Marine that make most of the world's supply of Jack-ups and semi-submersibles rig are located in Singapore. Together, the pair has orders for rigs

and other vessels for the oil industry worth over 13 billion Singapore dollars (\$7.6 billion).

9.4.3 Rig builders have not seen such a surge in orders since the early 1980s. In the lean years that followed, American and European shipyards dropped out of the business. But the famously far-sighted Singaporean government, which owns stakes in both companies and has long promoted the city-state as a transport and logistics hub, continued to invest in marine services as a natural complement to its busy port. SembCorp and Keppel both expanded overseas, and now operate ship-repair and rig-building yards around the world.

9.4.4 But with business more than doubling this year compared with last, those networks still might not be big enough. The pair will not complete some of their current orders until 2010. SembCorp is considering expanding its main yard in Singapore. Keppel insists it can still take on rush jobs, but only if a “good premium” is offered. On the other hand, investments in extra capacity might sour if the price of oil falls.

9.4.5 The average age of jack-ups currently in use is 22 years, although most were intended to last for only 20. There will still be a market for repairs and conversions no matter how cheap oil gets. Keppel has property and infrastructure divisions to insulate it. SembCorp, for its part, also builds and repairs ships.

9.5 **Jebel Ali Free Trade Zone**

9.5.1 The World Bank has identified the UAE as one of the least cumbersome countries to set up new business.

9.5.2 Jabel Ali is one of preferred centre in Middle East and Asia due to good infrastructure facilities including communication, transportation, accommodation, logistics etc. and fiscal benefits viz. no direct tax, no fringe benefit tax, no personal tax, low levels of customs duty, no service tax, no exchange control regulations etc.

9.5.3 Ideally situated to serve the requirements of the offshore construction market, Dubai's strategic location at the crossroads of Eastern and Western hemispheres allows companies to export their products to the offshore oil and gas industry practically anywhere in the world, efficiently and cost effectively. Dubai is known around the world for the excellent business environment it offers. Rules and regulations for conducting business from Dubai are among the most liberal and attractive in the region. International companies seeking to establish a business presence in Dubai have a host of alternatives. Besides trading, many companies prefer setting up an office in Dubai liaise directly with customers and further expand their area of operations. The growth in

the manufacturing sector has been steady due to rise in population and demand for consumer goods, growth of the free zones and foreign direct investments in the country, according to analysts. According to the statistics provided by the Dubai Customs, Dubai, which handles some 80 per cent share of the total international non-oil trade of the UAE. The financial markets in Abu Dhabi and Dubai recorded growth in these few years and trading volume increased which is also a major factor for business to prosper and make both the emirates a safe haven for investment and trading.

9.5.4 The Jebel Ali Free Zone was established in 1985 with the specific purpose of facilitating investment. Accordingly, the procedures for setting up in the zone are relatively simple. Served by Dubai International Airport and a major road network, the free zone is just a short drive from the centre of Dubai. While Jebel Ali was established to complement and contribute to Dubai's growth and development, its legal status is quite distinct. Companies operating there are treated as being "offshore" or outside the UAE for legal purposes.

9.5.5 The option of setting up in Jebel Ali is therefore most suitable for companies intending to use Dubai as a regional manufacturing or distribution base and where most or their entire turnover is going to be outside the UAE.

9.5.6 Jebel Ali Free Zone Incentives

- 100% foreign ownership;
- Exemption from all import duties;
- 100% repatriation of capital and profits;
- Freedom from corporate taxation on profits, as applied throughout Dubai, for a period of 15 years with a guarantee of an extension for a further 15 years in the event that corporate income tax is introduced in Dubai;
- No withholding taxes;
- Exemption from all import duties on goods imported into the free trade zone;
- Abundant inexpensive energy;
- Simple and efficient recruitment procedures ensuring the availability of a competitive skilled and experienced workforce;
- A high level of administrative support from the Free Zone Authority.

9.5.7 Following are the advantages offered to companies (particularly oil and gas) to make Jebel Ali Free Zone as their destination

- Location: Dubai is strategically located at the crossroads of Eastern and Western hemispheres;
- Absence of red tapism and corruption;
- Large Oil and Gas deposits;
- Booming tourism industry in UAE means more flights in and out of Dubai. Hence big oil companies have a strong presence here;
- Logistics at the Jebel Ali port: Largest port in the world; has the capacity to handle different size / types of containers and vessels. Excellent storage facilities for oil;
- Ease of setting up operations in the country;
- Visas are easily obtainable;
- Favourable tax benefits and political stability in the region;
- Excellent banking and credit facilities available to investors;
- Overall infrastructure: Power, IT services, manpower etc. Excellent living facilities all over. Elaborate transportation system;
- Openness to foreigners as compared to other areas in the region. Foreigners are allowed to own land in the free zone.

9.6 Chinese Experience

9.6.1 SEZs made their debut in 1979-80 when China embarked on their SEZ experiment. China's objective was much wider than trade and investment promotion - it tried to open its essentially closed economy and experiment with foreign investment, and chose the SEZ framework as a dominant instrument of policy. Key changes were first tested in a few SEZ "pilot areas" before being introduced elsewhere. SEZs can serve a similar purpose as crucibles of radical reform in India, given our large population, social disparities and high dislocation potential of radical reform. Later, countries of the Soviet bloc experimented with the SEZ concept, mainly with a view to using FDI to solve their unemployment problem. It is in China that the concept of SEZ turned out to be the most successful. There, open zones were gradually extended from the South and coastal areas (which were originally opened to market economics) to the inland regions. The Chinese Government continues to increase the number of open zones, which now number around 1,500. These have been given many different names: coastal economic open zones, economic and technological development zones, new areas, free trade zones, high technology development zones, etc. The flow into different open areas kept changing. In the 1980s, Shenzhen (north of Hong Kong) and Xiamen (opposite Taiwan) were most important. By the 1990s seven coastal SEZs gained importance, and attracted 80% of the foreign investment flow into China.

9.6.2 Chinese SEZs have the following distinguishing features:

- The geographical area of the SEZ is astronomically large. (Shenzen - 327 sq. Km, Zhunan - 121 sq km, Xiamen - 131 sq km, Hainan - 34000 sq km (entire island), Shantou: 234 sq km)
- The designated SEZ territory is usually a portion of a larger municipality (for instance, while the entire Shantou is 2064 sq km, the Shantou SEZ is 234 sq km).
- They are not just industrial parks. Rather, they are entire parts of cities or areas containing all the usual community features such as residential areas, commercial and recreational facilities, transport infrastructure, education, health and other social services. This helps to avoid many of the social problems experienced by less organic zones. City-scale zones have the advantage of promoting a more comprehensive and integrated investment profile and facilitating backward and forward linkages between zone locators and local enterprises.
- SEZs usually enjoy more freedom than other special zones in China.
- There's minimal bureaucratic interference and easy entry/exit procedures. The SEZ authority is independently managed

9.6.3 Fiscal Incentives / Key Tax Concessions:

- The zones constitute separate customs areas. Production inputs, raw materials and intermediate goods may be imported duty-free.
- Corporate income tax benefits:
 - Foreign funded enterprises / joint ventures are taxed at a reduced enterprise tax rate of 15% (against a national rate of 33%). For units with 70% of products exported, and for high-tech industries, enterprise tax rate is 10%;
 - Tax holidays may be available depending upon the degree of export activity. For units scheduled to operate for 10 years, there is exemption from tax for first two profit-making years, followed by 50% tax during next three years. For units scheduled to operate for 15 years, there is exemption from tax for first five profit-making years, followed by 50% tax during next five years¹.
- Exemption from import duty on imported items used for investment in the unit, and inputs for exported items.
- Cheap land

9.6.4 In China, SEZs acted as major FDI boosters, which surged from very low levels in 1980 and just over \$3.5 billion in 1990 (when these zones were in the take-off phase), to

¹ Under Indian law, a presumption seems to be made that the unit will continue to operate indefinitely, and tax holidays are not linked to the life of the unit. The Chinese have prudently ensured that for short-lived units, the government is able to collect full tax for half the life, and for longer lived ones, for at least one third of its life. Two important corollaries follow: (a) units would probably be required to give an undertaking as to how long they will operate (probably, with tax refund provisions for violating this undertaking) (b) units are incentivised to operate for longer durations, as the tax breaks are better for the units with longer operating lives.

current levels of \$50 billion. The free zones have absorbed nearly 25% of the country's Cumulative FDI of USD 300 billion. FDI into the SEZ has also triggered significant domestic investment.

9.6.5 The total area of the five major SEZs in China is less than 1% of the whole country, but the GDP of these zones accounts for more than 7% of China's GDP, a fifth of the country's trade, and one-fifth of FDI. The rate of growth of these zones has been double the national average.

9.6.6 Mainly because of the SEZs and other open zones, foreign investment is a very significant element of industrial development in China. Enterprises with foreign investment employed about 18 million people (10 million in Guangdong province alone) and generated exports worth \$75 billion in 1997, some 41 per cent of total exports that year.

9.6.7 Most of the FDI flow, it may be noted, has come from the neighbouring Chinese dominated countries of Taiwan and Hong Kong. While China had this advantage, which is not so easy to replicate elsewhere, it can also be argued that the SEZ policy, which China fine-tuned to foreign investors' requirement, was the important catalyst to that country's FDI success. However, this should not take away from the spectacular success of the Chinese SEZ experience. Chinese expats invested in the SEZs not on account of some patriotic sense, but because these investments made good economic sense. If India has a similar package to offer, NRIs (who may be at par with the Chinese in terms of affluence, if not better) will not shun more lucrative investment opportunities to invest in India.

9.7 **Service Sector SEZs – Poland and China**

Poland

9.7.1 In March 2005, Poland introduced amendments to its regulations on business activity in Special Economic Zones (SEZ) to permit services in the area of information technology, research and development, accounting, book-keeping and account control, technical research and analysis and call centres to be conducted within SEZs, which previously was not possible.

9.7.2 The recent amendments make investments in SEZs possible by entrepreneurs conducting business activity by "Service Centres" (internal outsourcing) and entitle them to public aid in line with the SEZ scheme's terms and conditions.

9.7.3 Business activity in SEZs offers investors a particularly valuable opportunity to receive public aid. The aid granted as a result of activity in the zone is in the form of a tax

exemption equal to the labour expenditure incurred over a two-year period or defined investment expenditure. The two-year labour expenditure, on which the amount of the public aid is based, comprises of gross labour costs (payroll, social security and related taxation) increased by mandatory charges related to the employment of staff, which additionally increase the available pool of public aid.

9.7.4 Due to the possibility of receiving public aid and the relatively low employment costs in Poland, the new regulations provide for extremely favourable prospects for international companies, allowing them to optimize their operations. In view of this, a number of capital groups, including financial institutions, have already decided to move their accounting and book-keeping centres to SEZ's in Poland.

China

9.7.5 China has recently decided to provide special incentives for the development of its service industry in SEZs. Accordingly, 20 local service industries in Shenzhen SEZ have been opened to foreign investment, including financial services, securities, ports, hospitals, tourism and logistics.

9.8 Models used globally for implementation – A benchmarking

	Shenzhen China	Jebel Ali, Dubai	Saif Zone, Sharjah	Poland
Location	Guang Dong Province, Opposite Hongkong	35 Km from Dubai city	Near Sharjah International Airport, 120 Km from Khortakkan Port	Several Zones
Area	327 Sq.Km	100 Sq.Km (Approx.)	60 Sq. Km (Approx.)	2670 Ha. (26.7 Sq. Km) for all SEZs
Economic Activity Focus	<ul style="list-style-type: none"> ▪ Production of Hi-Tech Products ▪ Real estate, finance and telecommunications ▪ R & D/ Hi-tech 	<ul style="list-style-type: none"> ▪ Trading Light manufacturing : metals, chemicals, rubber, beverages and paper 	<ul style="list-style-type: none"> ▪ Trading Services ▪ Light /Medium Manufacturing ▪ Assembling, packaging 	<ul style="list-style-type: none"> ▪ Employment oriented units ▪ Semi Conductors ▪ Telecom ▪ Automobiles

	Shenzhen China	Jebel Ali, Dubai	Saif Zone, Sharjah	Poland
Fiscal Status	<ul style="list-style-type: none"> ▪ 50% Reduction in income tax for first 5 years ▪ Reduced loan interest rates, water/electricity charges 	<ul style="list-style-type: none"> ▪ No corporate Tax ▪ No income tax ▪ No other duties 	<ul style="list-style-type: none"> ▪ No import /Export duties ▪ No corporate /personal taxes ▪ Low electricity / water rates 	<ul style="list-style-type: none"> ▪ No tax for first 10 years ▪ 50% tax for next 10 years ▪ Tax exemptions on profits ▪ Property tax and stamp duty exemptions
Physical Development Scoping	<ul style="list-style-type: none"> ▪ Special industrial parks developed inside Shenzhen, such as Longgang industrial zone ▪ Furnished offices and light industry structures ▪ Long lease for 30 years ▪ Developed land sites and storage facilities at concessional rate ▪ On site staff accommodations 	<ul style="list-style-type: none"> ▪ Furnished offices and light industry structures ▪ Long lease for 30 years ▪ Developed land sites and storage facilities at concessional rate 	<ul style="list-style-type: none"> ▪ Plots of different sizes ▪ Pre-built warehouses and office spaces ▪ On site staff accommodations 	<ul style="list-style-type: none"> ▪ Choice of different plot sizes ▪ Within bonded area all physical infrastructure available
Policy Framework	<ul style="list-style-type: none"> ▪ FDI ▪ High technology infusion 	<ul style="list-style-type: none"> ▪ Strengthen Dubai's Entrepot status; ▪ Diversify deepen economy 	<ul style="list-style-type: none"> ▪ Competing with Jebel Ali ▪ Diversifying the economy 	<ul style="list-style-type: none"> ▪ FDI ▪ Employment ▪ Economic growth
<i>Source: PwC Research</i>				

10 Conclusions

- 10.1.1 The E&P industry is already facing the bottleneck of services on cost, quality and timeliness front. Unless India is prepared to facilitate growth of service industry to be able to address to the growth in service requirement, the development of E&P industry and energy security would be compromised.
- 10.1.2 The rig demand has generally risen globally in response to the relatively high energy prices and the service companies are operating at their fullest capacity. Other oilfield service providers are also facing similar situation. In the present scenario and future requirements, timely implementation of the work program using advance technology, is getting affected, quite often.
- 10.1.3 E&P service providers are facing constraints in providing services to Indian E&P companies viz. high fiscal levies, complex and time consuming regulatory process, and weak infrastructure and logistics in providing services efficiently, in addition to the Health, Safety and Environment related concerns in fields. Only a few international service companies in the field of drilling, seismic data acquisition, processing, mud logging etc. have established themselves in India. This has left very limited choice of service providers available to E&P companies with the small operators bearing maximum unfavourable impact in the current scenario.
- 10.1.4 For removing bottlenecks in the growth of upstream industry and thereby achieve the necessary exploration targets as step towards energy securitisation, E&P service providers need to be encouraged to consider India as a destination for capital investment and base for Technology development, Technology transfer and implementation, expertise and competency development and Quality Assurance and Quality control.
- 10.1.5 After due deliberations, the National Working Committee has reached a conclusion that encouraging localised operations of various types and kinds of service providers to E&P companies would be the best model. Given the attractiveness of recently legislated SEZ Act, the oilfield service providers be encouraged to invest into India through specific SEZ, say Petroleum Economic Zone (PEZ). Service providers, domestic or international, who are already operating in India, may consider moving into the proposed PEZ. Creating a coastal hub in location with good infrastructure and logistic facility is recommended. PEZ model is expected to attract international companies' investments in India.
- 10.1.6 It is estimated that E&P companies in India will spend over US\$ 10 billion in next 5 years in exploration and development activities. Based on this, estimated foreign

exchange outgo would be US\$ 6 billion in next 5 years on account of payments to overseas service providers. If the services are available from within India, part or full of this foreign exchange outgo would also be saved.

10.1.7 The National Working Committee recommends the following for the proposed PEZ model to become successful and attractive for service providers :

- Inclusion of activities undertaken by upstream technology and service providers in the list of services qualifying for SEZ to be brought out by the Government of India;
- Permitting services provided to companies in India as eligible for Net Foreign Exchange + condition under SEZ;
- Allowing single window clearance;
- A review by Gol to minimise the number of clearances and reduce the time required for obtaining clearances;
- Provide infrastructure, logistics and connectivity assistance to the PEZ developer.

10.1.8 By developing the PEZ, service providers will be advantaged as follows-

- Extremely attractive fiscal regime (Direct tax, Indirect Tax);
- Availability of talent pool of human resources worth developing expertise into for sustained operations in India;
- Extremely good IT talent and infrastructure;
- Low cost of labour, operation, project development and material;
- Geographical positioning most conducive for servicing other countries while operating from India;
- Growing local market;
- Direct tax benefit to R&D companies operating in India, in addition to SEZ fiscal benefit.

10.1.9 Successes achieved in places like Nigeria have proven that the support by the Government for service industry promotion, not only help the domestic E&P industry but also boost county GDP by being able to service activity in the region.

11 Annexure

11.1 Annexure 1 – Abbreviations

2 D	2 Dimensional
3 D	3 Dimensional
API	Acquisition Processing and Interpretation
BARC	Bhabha Atomic Research Centre
BBL/D	Billion Barrel Per Day
CAPEX	Capital Expenditure
CG	Capital Goods
CIF	Cost Insurance Freight
DGCA	Director General of Civil Aviation
DTA	Domestic Tariff Area
E&P	Exploration and Production
ECB	External Commercial Borrowings
EEFC A/c	Exchange Earners Foreign Currency Account
EOR	Enhanced Oil Recovery
EPU	Export Processing Unit
EPZ	Export Processing Zone
FDI	Foreign Direct Investment
FTZ	Free Trade Zone
GDP	Gross Domestic Product
HSE	Health Safety Environment
IEA	International Energy Agency
IFSC	International Financial Service Centre
IOR	Improved Oil Recovery
LKM	Line Kilometre
MAT	Minimum Alternate Taxation
MNC	Multi National Company
MoPNG	Ministry of Petroleum and Natural Gas
NCS	Nigerian Customs Service
NELP	New Exploration and Licensing Policy
NFE	Net Foreign Exchange Earning
NOC	National Oil Companies
NPA	Nigerian Ports Authority

NRI	Non Resident Indian
NWC	National Working Committee
O+OEG	Oil and Oil Equivalent of Gas
OBU	Off-Shore Banking Units
PetroFed	Petroleum Federation of India
PEZ	Petroleum Economic Zone
PwC	PricewaterhouseCoopers Pvt. Ltd.
R&D	Research and Development
RBI	Reserve Bank of India
RM	Raw Material
SEZ	Special Economic Zone
Sq. Km.	Square Kilometres
TCF	Trillion Cubic Feet
TDS	Tax Deducted at Source
UAE	United Arab Emirates
UN	United Nations