

F. No.31018/49/2013-ONG-III(Vol.I)
Government of India
Ministry of Petroleum and Natural Gas

Shastri Bhawan, New Delhi
Dated 20th May, 2014

To,

The Director General,
Directorate General of Hydrocarbons,
C-139, Sector-63,
Noida-201301.

Sub: Policy for Geo-Scientific Data Generation for Hydrocarbons in Indian Sedimentary Basins.

Sir,

I am directed to enclose herewith a copy of the Agreement duly vetted by the Deptt. of Legal Affairs wherein some suggestions relating to Dispute Resolution given by the Deptt. of Legal Affairs have been carried out.

2. Necessary action in the matter may please be taken as per the modified agreement.

Yours faithfully,



(Rakesh Mishra)

Under Secretary to the Government of India

Tele: 2338 5557

Encl: As above.



POLICY FOR GEO-SCIENTIFIC DATA GENERATION FOR HYDROCARBONS IN INDIAN SEDIMENTARY BASINS

1. INTRODUCTION

- 1.1 The hydrocarbon sector plays a vital role in the economic growth of the country as oil and gas continue to play a pre-eminent role in meeting the energy requirements of the nation. The 'India Hydrocarbon Vision 2025' (**Annexure-IV**) outlines the overall prospective and vision for this purpose.
- 1.2 The growth of the economy would automatically lead to growth in energy consumption. The gap between demand and supply of crude oil, natural gas and petroleum products from indigenous sources is likely to increase over the years. This calls for an increased emphasis on domestic hydrocarbon exploration and production. A significant part of the Indian sedimentary basins still remain unexplored. Inviting private investors for exploration is handicapped due to non availability of data for such unexplored areas. Hence there is a pressing need to acquire geo-scientific data in respect of all the sedimentary basins so as to accelerate Exploration and Production (E&P) operations.
- 1.3 The total area of sedimentary basins in India is 3.14 million Sq Km. Despite the best efforts, a significant part of these sedimentary basins are not explored / well explored and some parts do not have any geo-scientific data. There is virtually no geo-scientific data for hydrocarbons in 48% of the sedimentary basin area in the country.

2. BACKGROUND

- 2.1 The blocks offered in the bidding rounds need to be supported by data packages for assessment of oil and gas potential by the prospective bidders. Therefore the geo-scientific data made available to bidders prior to bidding is the most essential technical input in the search for hydrocarbons. In order to generate such data, GOI adopted a non-exclusive Multi-client Speculative Model based on post cost recovery profit sharing in 2005. Accordingly Speculative Geophysical Survey / Reprocessing Agreements were executed with eight Service Providers for undertaking nine geophysical surveys/reprocessing activities under this model till 2009. However, for the last four years, no speculative

geophysical agreement could be executed due to difficulties in implementing the cost recovery model.

2.2 In view of the requirement for generation of geo scientific data to support E&P activities, it was decided in the 19th Administrative Council meeting of DGH held on 27th September 2012, to make the speculative survey model more attractive and easier to implement. A policy paper on “Case for National Data Policy in E&P of Hydrocarbon Sector in India” circulated by the Power & Energy division of the Planning Commission in February 2013, has also highlighted the importance of generation of geo scientific data, and the need for a re-look at the existing models. Main observations of the said policy paper are given below:

- a) Due to high cost of drilling, accurate selection of well locations becomes very important, and this in turn is entirely dependent on seismic and related data, which is the starting point for exploration.
- b) It is well acknowledged that there is a need for a faster vehicle of awarding blocks in order to bring more area under exploration. Open Acreage Licensing Policy (OALP) is one such vehicle which is under consideration of the Government wherein blocks may be offered round the year to the interested companies. The selection of the block would be left to the interested player as opposed to NELP where blocks are carved out by the Government. However, launch of OALP would directly depend upon the availability of the data for both the awarded and un-awarded acreages.
- c) As India has vast unexplored sedimentary basins, a strategy which facilitates a time bound full coverage has become a necessity. Moreover, even the OALP pre-supposes offering of data to the interested companies for them to submit their bids/ interest. Hence, availability of data is no longer an option, but a pre-condition.
- d) National Government is not expected to earn profits out of sale of geo-scientific data to E&P companies because this raises the cost of exploring oil and gas. The Government is set to achieve much higher commercial gains as well as energy security through enhanced exploration and production, which may get dampened by a high cost of entry into the hydrocarbon sector through profit sharing on data.

- e) On the other hand, the data acquisition companies are in the business of multi-client speculative data for a commercial gain, and would make an enthusiastic debut only if the terms are attractive. They would take the risk of cost recovery for which they would seek exclusivity period for license of data thus acquired.

The Planning Commission therefore observed that the existing multi-client speculative survey policy will not serve the desired objective. Hence, the policy prescription must provide for a definite strategy -one for proven basins wherein the data companies could acquire multi-client data at their own expense and risk, and offer the data to interested companies who may be able to obtain the chosen acreages through an OALP process. As regards the un-proven basins, other models based on PPP may be considered by the Government.

3. POLICY

In view of the above background, it has been decided to formulate a Geo-scientific Data Generation Policy for Hydrocarbons in the country which will be a cornerstone for the launch of **Open Acreage Licensing Policy (OALP)** to promote E&P activities. This Policy envisages two basic models for generation of geo-scientific data for Indian basins

- (i) **Non-exclusive Multi-client Model:-** In areas where there are expressions of interest by Service Provider to carry out Survey.
- (ii) **Funding by Government:** For area for which no offer to Conduct Survey under (i) is received even after two years of its launch, Government may initiate Survey with own funds.

Significant Feature of the Non Exclusive Multi Client Model:-

- 3.1.1 Permission for conducting GEO Scientific data Survey/Activities will be granted by way of a Non Exclusive Multi Client Survey Agreement.
- 3.1.2 Government would retain the option for offering the same area to more than one company, should an interest be expressed by another data company for any reason including induction of superior technology.
- 3.1.3 This model replaces the earlier fiscal term of profit Sharing after cost recovery with the payment of one time project fee.

- 3.1.4 One time project fee of US\$10000 and extension fee equal to 60% of one time fee would be paid by the Service Provider. An application fee of US\$ 1000 would also be levied. In addition, the service provider will have to furnish a Data Delivery Bank Guarantee of US\$ 100,000.
- 3.1.5 Period of Survey under the agreement would be two years, with a provision for one extension for maximum one year.
- 3.1.6 The Service Provider will have exclusive rights to license data generated as a result of the Survey to interested parties for a period of twelve years (including the survey period), subject to the provisions of this Agreement.
- 3.1.7 Service provider assumes all operational and financial risks, invests his funds and resources for acquiring and/or processing and/or interpreting geo-scientific data and can license such data to interested E&P investors, subject to provisions of this Agreement.
- 3.1.8 The offer to undertake such studies through a multi-client business model will be open throughout the year. Under this model, the service provider may make attempts to recover the investments by seeking pre-commitment and pre-funding from E&P companies before the start of the survey and/ or by license of such geo-scientific data when acquired and/or processed and/or interpreted, subject to provisions of this Agreement.
- 3.1.9 This Model enables generation of high quality geo-scientific data in a speedy manner with Government ownership of data and also encourages deployment of advanced/proprietary technologies in upgrading the geological models and understanding the petroleum systems in sedimentary basins of India without involving expenditure and risk on the part of Government of India.
- 3.1.10 Government of India reserves the right to reject any application on grounds of national security, Govt. policy or fraud committed by the applicant.
- 3.1.11 Service provider and the licensee shall use the data solely for the purpose of E&P activities. Licensee will also be subject to Indian laws and the jurisdiction of Indian Courts. Service Provider will make provisions in this regard in their contract Agreement with licensees.

3.2. Funding by Government:

3.2.1 In frontier basins and in areas posing higher financial risk, the above model may not attract service providers to invest their funds for data acquisition. In such areas, the government may undertake data acquisition at its own expense and use this data to encourage bidding for exploration acreages.

4. Role of Director General of Hydrocarbon (DGH):

4.1.1 DGH will administer this Policy on behalf of the Government of India. GOI will continue to be the owner of the data acquired under this Policy. The approval process to be followed is detailed in Para 4.1.2 -4.1.4.

4.1.2 In the first stage, the DGH will issue a “Provisional Letter of Consent” (**Annexure-I**) after receiving the proposal in the prescribed Application Form (**Annexure-II**) along with an application fee of US\$ 1,000 (one thousand dollars). The purpose of this Provisional Letter of Consent is to enable the applicant company to approach and tie up pre-funding to the extent possible with the prospective buyers of the data to be generated. The DGH will seek clearances from Ministry of Defence and Ministry of Home Affairs for the areas to be offered and the companies/ entities to be granted letter of consent. The Provisional Letter of Consent would be valid for six months. The DGH will have powers to extend the validity up to a maximum period of one year.

4.1.3. In the second stage, after firming up the data acquisition requirements and the related work programme, the applicant company would submit a draft copy of the Non-exclusive Multi-client Agreement with all the necessary details. The company would also pay a Project Fee of US \$10,000 (ten thousand dollars) and furnish a data delivery bank guarantee of US \$ 100,000 (one hundred thousand dollars).

4.1.4 DGH will examine the agreement submitted and if found in order, execute the same on behalf of the Government of India with the Service providers. Model agreement for Non Exclusive Multi Client Survey is enclosed at **Annexure-III** (subject to final legal vetting).

Letter No.....

Date:

XXXXXXXX.....

.....

.....

..... Attn: Company Secretary

Provisional Letter of Consent

(Prior to entering into Agreement to carry out Non-Exclusive Multi-client Geo-Scientific Survey/ Activities)

This has reference to proposal No.....dated.....submitted by M/s for Geo-scientific Survey/ Activity under the Non-exclusive Multi-client Model as per the Policy for Geo-scientific Data Generation for Hydrocarbons. The proposal consists of the following elements (indicating type and extent of Geo-scientific survey / activities, Area coverage, Volume of Geo-scientific Data to be generated) :

- (i)
- (ii)
- (iii)

The area proposed to be covered is indicated in the map enclosed alongwith the coordinates.

2. The DGH has provisionally proposed to enter into an Agreement for allowing the applicant to carry out the Non-exclusive Multi-client Geo-scientific survey/ activities as indicated above. The applicant is required to submit the following :

- (i) Details of firmed up work program and its deliverables.
- (ii) Submission of the required Project Fee and the Bank Guarantee for the delivery of data to DGH.
- (iii) Draft agreement (as per prescribed format).

3. This Provisional Letter of Consent is valid for six months from the date of this letter, unless extended further by the competent authority.

DG
Directorate General of Hydrocarbons
Noida, India

Application Form

(To carry out Non-exclusive Multi-client Geo-Scientific Surveys/activities relating to hydrocarbons in offshore/onshore part of India)

1. Company details	
Name of the company	
Registered office Address	
Email	
Contact telephone	
Fax No.	

2. Survey details (Use separate sheet if necessary)	
Details of the survey	
Area	
Location	
Proposal	

3. Application fee details	
Demand Draft No.	
Name of bank	
Amount	
Date of issue	

4. Contact person details	
Name	
Position	
Nationality	
Address in India	
Email	
Contact telephone	
Fax No.	
Signatures	

5. Authorised signatory details	
Name	
Position of Signatory	
Nationality	
Email	
Address	
Contact telephone	
Fax No.	
Signatures	

6. Additional details (if any)	

(Signature)

Name:

Designation:

Date:

Note:

- i. The full registered name of the company shall be mentioned in the Application Form precisely as mentioned in its Certificate of Incorporation and the copy of valid Certificate of Incorporation shall be enclosed.
- ii. The Application Form shall also enclose the proposal details mentioned at Sl No 2 with all relevant documents.
- iii. The Application Form must be accompanied with a fee of **US \$ 1,000/-** . The payment of the non refundable Application fee should be payable by crossed A/c Payee's Bank Draft / Banker's Cheque drawn in favour of Directorate General of Hydrocarbons at New Delhi, India or Telegraphic Transfer through :.....
- iv. The Contact person is an authorized representative of the company in India and his address must be a valid physical address within India for correspondences relating to this Application. Letter of Authorization to this effect shall also be enclosed.
- v. The Application Form must be signed by the authorized signatory of the company and Letter of Authorization to this effect shall also be enclosed.
- vi. By signing the Application Form, the authorized signatory declares that the information provided in the Application Form is true and correct.
- vii. In case the space in this Application Form is insufficient to include all relevant details,, state "see attached sheet" in the appropriate space, and attach the sheet to the Application Form.
- viii. The duly completed Application Form should be forwarded to " The Director General, Directorate General of Hydrocarbons (DGH), OIBD Bhawan, Plot No. 2, Tower-A, Sector-73, Noida – 201 301,India"

**AGREEMENT TO CARRY OUT NON-EXCLUSIVE MULTI-CLIENT GEO-SCIENTIFIC
SURVEYS/ACTIVITIES RELATING TO HYDROCARBONS**

**IN..... (OFFSHORE and/or ONLAND)PART
OF INDIA**

(Project No.....)

[This Agreement has been scrutinized by Ministry of
Law & Justice, Government of India]

BETWEEN

THE DIRECTORATE GENERAL OF HYDROCARBONS, a body constituted under the Ministry of Petroleum & Natural Gas, Government of India, having its office at OIDB Bhawan, Tower A, Plot No. 2, Sector- 73, Noida-201301, India, hereinafter referred to as "DGH", which expression shall mean and include all its officers, employees, consultants, nominated third parties, agents, successors and assigns thereof.

AND

M/S.....(Name of Service Provider), a corporate entity registered under the laws of (Name of country) having its offices at (Provide full addresses with e-mails and telephone numbers)..... Hereinafter referred to as "Service Provider" which expression shall mean and include all its officers, employees, consultants, nominated third parties, agents, successors and assigns thereof.

(DGH and Service Provider shall herein after referred to as such or collectively as "Parties" or singularly as "Party")

WHEREAS

The Ministry of Petroleum & Natural Gas, Government of India, has entrusted the DGH with the responsibility for getting Geo-scientific surveys/ activities conducted by any foreign/Indian company to generate new data and upgrade the available data on hydrocarbon potential of India, with the purpose of attracting foreign and Indian companies to explore and develop oil and gas fields in India.

AND WHEREAS

The Service Provider has agreed, under the terms of this Agreement, to carry out NON-EXCLUSIVE MULTI-CLIENT GEO-SCIENTIFIC SURVEYS/ ACTIVITIES RELATING TO HYDROCARBONS, including acquisition and / or processing (including reprocessing) and/or interpretation (including re-interpretation) of geo-scientific data, and to provide such Project Data to DGH free of cost while licensing the Project Data to interested parties or persons.

THEREFORE, DGH and M/s..... (Name of Service Provider) have entered into this Agreement on this (Day) of (Month), 201..... Under the terms and conditions more fully described hereunder.

2.0. DEFINITIONS

- 2.1. **“Agreement”** shall mean and include this entire document together with all its attachments, annexure and appendices, and all mutually agreed amendments made in writing hereafter.
- 2.2. **“Area”** shall mean the area described in Annexure 1 attached hereto.
- 2.3. **“Agreement Data”** shall mean the geo-scientific data, information, reports and maps proposed to be generated and are to be acquired as described in Annexure-1 to this Agreement, as a result of geo-scientific surveys/ activities relating to hydrocarbons, including acquisition and/or processing (including reprocessing) and/or interpretation (including re-interpretation) of geo-scientific data.
- 2.4. **“Agreement Duration”** means the 12-year validity period of the Agreement from the Effective Date, or till the termination of this Agreement, whichever is earlier
- 2.5. **“Bathymetry”** is the study of underwater depth of water body or ocean floor. The data obtained by measuring of ocean depth through depth sounding so as to map the seafloor relief or terrain is termed as Bathymetric Data.

- 2.6. **“DGH Data”** shall mean the geo-scientific data including geological and geo-chemical samples and core samples, provided by DGH to the Service Provider free of cost to support the objectives of the Project.
- 2.7. **“Effective Date”** is the date of signing of the Agreement.
- 2.8. **“Geo-Scientific Data”** shall mean data and information relating to surface and sub-surface characteristics of the sedimentary basins and geological structures which lead to assessment of hydrocarbon prospectivity in the area to which the data and information pertain.
- 2.9. **“Geo-Scientific Survey/Activity”** shall mean such operations which lead to generation of geo-scientific data, where such operations shall include acquisition and /or processing (including re-processing) and /or interpretation (including re-interpretation) of such data by way of, but not limited to, on-land/ offshore/airborne/satellite investigations using seismic, gravity, magnetic, electric, magneto-telluric and /or geochemical and /or geological surveys. However, such operations shall not include drilling of deep exploratory wells.
- 2.10. **“LKM/GLK/SKM”** shall mean Line Kilometer/ Ground Line Kilometer/Square Kilometer, a terminology commonly used in offshore/onshore seismic activities relating to hydrocarbon sector.
- 2.11. **“Physical Oceanographic Data”** shall refer to vertical thermal, salinity, underwater sound velocity, current, density and conductivity profile data collected, if any, during offshore geo-scientific surveys.
- 2.12. **“Project”** means all activities undertaken under the Agreement.
- 2.13. **“Project Data”** shall mean and include all the geo-scientific data, information, reports and maps actually generated and processed/ reprocessed, and/or interpreted/ reinterpreted pursuant to this Agreement.

Note: For the sake of clarity, it is clarified that the Project Data will normally be the same as “Agreement Data”, or a sub-set of it.

- 2.14. **“Proprietary Information”** means any technical and/or commercial information (whether in visual or machine readable form) disclosed by one party to the other and identified by a suitable legend or marking as being “Proprietary” as well as Proprietary Information disclosed orally by one party to the other which was described as being proprietary at the time of disclosure and thereafter is reduced to writing, appropriately identified and a copy thereof sent to the receiving party within 15 working days of the original oral disclosure PROVIDED HOWEVER that

Proprietary Information shall not include any information which the receiving party can show that:

- i. is in or comes into the public domain otherwise than through a breach of this Agreement or the fault of the receiving party; or
- ii. has been lawfully received from a third party without restriction as to its use or disclosure; or
- iii. was already in its possession free of any such restriction prior to receipt from the disclosing party; or
- iv. was independently developed by the receiving party without making use of the Proprietary Information; or
- v. has been approved for release or use (in either case without restriction) by written authorization of the disclosing party.

Provided further that the Project Data shall remain the Proprietary Information of the Government/DGH at all times.

2.15. “Raw Data” shall mean the original acquired unprocessed field data as recorded during acquisition by the Service Provider within the proposed Survey Area in the industry standard format, and copies thereof, including reformatted data and navigation merged field data.

2.16. “Survey Period” shall mean a period of two years from the Effective Date, or as extended under the provisions of this Agreement.

3.0. DURATION

3.1. The Service Provider shall complete the survey within a period of 2 years from the Effective Date, hereinafter referred to as Survey Period. The Survey Period may be extended for maximum period of 12 months on payment of Project Extension Fee as stipulated in Clause 4 and on extension of Bank Guarantee for safe delivery of Project Data.

3.2. This Agreement shall remain valid for a period of 12 years from the Effective Date, hereinafter referred to as Agreement Duration (including the extended period).

4.0. Fees structure for Project execution:

4.1. The Project Fees will be US\$ 10,000 for the Survey Period of two years. The Survey Period can be extended for maximum 12 months by paying 60% percent of the Project Fees (Project Extension Fee), or pro rata thereof.

- 4.2. Data Delivery Bank Guarantee will be US\$ 100,000 and the same shall remain valid for 180 days after expiry of the Survey Period (or extended survey period).
- 4.3. The Service Provider shall apply for extension of Survey Period, if required, 2 months prior to expiry of the Survey Period, along with the extended Data Delivery Bank Guarantee.

5.0. PROJECT AND DELIVERABLES

- 5.1. The Service Provider shall be permitted to carry out Geo-Scientific Survey/Activity in the manner and in the Area described in Annexure 1 at its own risk and cost and with its own resources, personnel and equipment in consideration of the payment of fee laid out in Clause 4.
- 5.2. The Service Provider shall deliver the Project Data free of cost to DGH as provided in Clause 6.1.
- 5.3. Subject to the provisions contained herein, the place of processing, interpretation and report generation will normally be at Service Provider's offices at(name of location). Any other formalities essential for the safety of Project Data as may be specified by the Government of India and its agencies from time to time shall be complied with.
- 5.4. The Service Provider shall be free to conclude the Geo-scientific Survey/Activity at any time within the Survey Period without completing the work relating to Agreement Data by providing a Declaration of Survey Completion through a letter on plain paper along with specifications and details of Project Data actually generated. No penalty will be levied for such premature closure of Geo-scientific Survey/Activity. However, the Project Fee once paid will not be refunded.

6.0. PROJECT DATA DELIVERY BANK GUARANTEE

- 6.1. The Service Provider shall, within 30 days of the end of Survey Period or within 30 days of furnishing the Declaration of Survey Completion, whichever is earlier, deliver to DGH all the Project Data free of cost.
- 6.2. To ensure compliance with the provisions of Clause 6.1. of this Agreement, the Service provider shall deposit with DGH a Bank Guarantee (BG) from a scheduled Commercial Bank in India for delivery of DGH Data and Project Data to DGH. Such Bank Guarantee shall be furnished before the Effective Date.
- 6.3. The Project shall commence only after the Effective Date

- 6.4.** DGH shall have the right to encash the Bank Guarantee in case of failure to comply with Clause 6.1, 7.12, 15.4 and 15.5
- 6.5.** The Bank Guarantee shall be for an amount of US \$ 100,000 in the format as per Annexure 2. The Bank Guarantee shall be valid till six months beyond the Survey Period/ extended Survey Period and will be released within thirty days of compliance with clauses 6.1,7.12, 15.4 and 15.5

7.0. RIGHTS AND OBLIGATIONS:

- 7.1** The Service Provider shall be entitled to carry out Geo-scientific Survey /Activities in the manner and in respect of the Area defined in Annexure 1, on a non-exclusive basis. DGH shall be free to allow any other party (ies) to carry out Geo-scientific Survey/Activities for the same Area at any point of time.
- 7.2.** Service Provider shall have the exclusive right to license the Project Data (excluding Raw Data, Physical Oceanographic Data and DGH Data) during the Agreement Duration, provided that license of such Project Data to companies incorporated in neighbouring countries of India or countries as notified by DGH from time to time will require prior permission of DGH. However, DGH shall not be precluded from using the Project Data internally, or making a part of the Project Data available in the manner indicated in clause 7.3 below for the limited purpose of data viewing by any company or investor. No Project Data will be incorporated in data packages of individual exploratory blocks, for the duration of the Agreement without the prior consent of the Service Provider.
- 7.3.** The DGH will have the right to make digital PDF images, without location details, from the Project Data for the purpose of promoting/ licensing acreages under bidding rounds/ open acreage licensing policy. In addition, a 'demonstration package', which is a subset of the full Project Data set, is to be provided by Service Provider to DGH along with deliverables (Annexure-1). The "demonstration package" should include the highlights of geological features to enable DGH to promote the licensing acreages and data viewing by interested E&P companies. Both the PDF images as well as the demonstration package will only be used for viewing by the interested E&P companies during promotion of acreages, and these will not be sold to them by DGH.

- 7.4.** DGH shall have the right to depute geoscientists to Service Provider's work place and Service Provider shall provide such access to its existing geo-scientific Data, geological understanding for line placements and geological inputs as may be deemed necessary by DGH for completion of the Project. The Service provider shall also provide DGH full access to their nominated geoscientists as well as unrestricted access to all the Project Data.
- 7.5.** Service Provider shall be solely responsible to obtain all necessary permissions, approvals and permits from the appropriate authorities, State Government and Government of India agencies such as Ministry of Environment and Forest, Ministry of Home Affairs, Ministry of Defence, Ministry of Mines, Directorate General of Civil Aviation, Chief Controller of Explosives, etc depending on the type of geo-scientific survey/ activity undertaken by the Service Provider, in accordance with the applicable laws / procedures / orders on the subject. While carrying out geophysical surveys in on-land areas, District Magistrate of the District / Superintendent of Police shall be informed by the service provider in advance. Separate permission will be sought from the State Forest Authority wherever applicable. Service Provider shall bear the cost of all such fee, guarantee bonds and other costs related to obtaining such permissions. Any loss or damage suffered by the Service Provider on account of delays or rejections of such permission, approval or permits shall be borne exclusively by the service provider.
- 7.6.** The service provider shall carry out the operations in compliance with Indian law for the prevention and control of pollution and protection of marine environment. The service provider shall be liable for any pollution or any damage to the marine environment as a result of these activities. The service provider shall also comply with such directions as the Central Government may issue from time to time for the conservation and systematic development of offshore minerals, prevention of pollution, protection of marine environment, prevention of coastal erosion or prevention of danger to life or property including the marine life.
- 7.7.** The Parties agree that any subsequent improvements made to the said Project Data during the Agreement Duration shall constitute an integral part of Project Data and shall not confer any rights on the Service Provider which have not been granted herein unless mutually agreed upon in writing. The Service Provider shall provide DGH with a copy of any improved Project Data free of cost within thirty days of completion of the aforementioned improvements. Any failure to deliver such improved Project Data within the specified period shall render this Agreement null and void, and DGH shall then be

free to license the available Project Data thereafter without any limitation arising on account of confidentiality or proprietary nature of such Project Data.

- 7.8.** The Service Provider will be allowed to take the original unprocessed raw Project Data tapes out of India subject to prior approvals from Government of India and its agencies after fulfilling the terms and conditions for such approvals and DGH shall render necessary assistance in this regard. However, Service Provider shall be solely liable to bear the cost for transporting the said Project Data out of India as well as for bringing the same back to India and for complying with all such terms and conditions which may be imposed by Government of India and its agencies while granting such approvals.
- 7.9.** DGH shall not sell the Project Data during the currency of this Agreement without prior consent of the Service Provider. However, the DGH shall have the right to use all the Project Data free of charge for the purpose of carving out the blocks and for promoting/licensing acreages under bidding rounds/open acreages licensing policy as provided in clause 7.2 and 7.3. DGH shall also have the right to provide the Project Data to Ministry of Defence and Ministry of Home Affairs in the interest of national security, subject to confidentiality of data being maintained.
- 7.10.** Service provider shall allow at his own cost unrestricted access to representatives of Government of India to its Project site(s) and offices at any point of time during the “Agreement Duration” to fulfil the requirements under laws, guidelines, notifications or permissions of any agency granting approval under Clause 7.5 in the manner indicated below:-
- (i) In the course of acquisition of Project Data, transportation from nearest railway station/ port/ airport to worksite/ vessel as well as board and lodging facility at the worksite/ vessel are to be provided by the Service Provider at its own cost.
 - (ii) In the case of Project Data Processing/ Interpretation at Processing/ Interpretation Centres outside India, the Travelling & Daily Allowance and Lodging expenses are to be paid in advance to DGH by Service Provider as per the applicable rates of DGH.
- 7.11.** The Service provider shall transfer to DGH the location map of geo-scientific data to be acquired and /or processed and/or interpreted prior to commencement of the Project. The Service provider shall also submit to DGH the Daily Progress Report (DPR) and Monthly Progress Report summarizing the survey activities and its navigational details etc. during the survey period.

- 7.12.** The DGH will provide DGH Data free of cost to the Service Provider to support the Project, and the same shall be returned to DGH at the earliest opportunity, before the completion of Survey Period. To-and-fro transportation and insurance of DGH Data tapes to Service Provider processing center, for processing / reprocessing, shall be at the cost of Service provider.
- 7.13.** Service provider agrees that it shall not keep the original or copies of any DGH Data in any form whatsoever nor shall he license the same. Further, any such DGH Data which is transported outside India shall be brought back to India at the earliest possible time which in any case shall be before completion of the Survey Period.
- 7.14.** After the termination or expiry of this Agreement, the DGH shall be free to use the Project Data in any manner whatsoever, including its sale/license without requiring any permission from the Service Provider.
- 7.15.** DGH may advise the Service Provider for additional data acquisition and/or processing and/or interpretation, wherever needed, to fill in the Project Data gaps, at the cost of the Service Provider. All other terms and conditions agreed to herein shall remain unchanged for carrying out the aforesaid additional work. However, the Service Provider shall have discretion regarding acceptance of DGH's advice in this regard.
- 7.16.** On request, the Service Provider may be given an opportunity to promote Survey Data during road shows and promotional events organised by DGH.
- 7.17.** If the service provider participates in any of the E&P bid rounds for the area for which he has undertaken geo-physical survey he shall license data collected to all the other E&P bidders without any discrimination. In the event of this not being done, the DGH shall have the right to license such data to bidders denied this data by the service provider.

8.0. OWNERSHIP OF DATA AND CONFIDENTIALITY

8.1. Ownership

The Service Provider shall, as soon as possible, provide to DGH, free of cost, all Project Data obtained in pursuance of this Agreement, but not later than the timelines stipulated in clause 6.1. Such Project Data shall be the property and Proprietary Information of the Government of India, provided that the Service Provider shall have the right to make use of such data under this Agreement and to license the Project Data to interested parties, subject to the provisions of this

Agreement. Such license shall be subject to the condition that the Project Data continues to be the property and Proprietary Information of the Government of India at all times.

8.2. Confidentiality:

The receiving party (i.e. the DGH/GOI or the Service Provider) of an item of Proprietary Information undertakes:

- i. to keep such Proprietary Information confidential;
- ii. not to use such Proprietary Information otherwise than for the purposes of the Project unless such use is specifically authorized in writing by the disclosing Party;
- iii. not to disclose such Proprietary Information to any persons employed in its business other than those having a need-to-know for the purposes of the Project, and then only on the understanding that such persons are made aware of and undertake to observe the provisions of this Agreement.
- iv. not to disclose Proprietary Information to any third party except for the purposes of the Project and with the prior written consent of the disclosing party (which consent shall not be unreasonably withheld) and then only on the understanding that such third party is made aware of and undertakes to observe the provisions of this Agreement;
- v. not to copy or reduce Proprietary Information to writing except as may be strictly necessary for the purposes of the Project; and
- vi. to return to the disclosing party on demand all copies of Proprietary Information reduced to writing (or other permanent form) and to destroy all notes and any other written reports or documents which may have been made by the receiving party to the extent they contain any part of or reference to the Proprietary Information in whole or part except as authorized in writing by the disclosing party or as is strictly necessary to complete any outstanding obligations relating to the Project where after such Proprietary Information shall be returned or destroyed as aforesaid.

8.3. This Agreement shall not be construed as granting expressly or impliedly any rights under patents, copyright or other form of intellectual property rights belonging to the

Government of India to the receiving party in respect of Proprietary Information, the ownership of which shall remain vested in the Government of India at all times.

- 8.4.** Should any party named in this Agreement hereto be the subject of merger or any other form of reorganization, it is agreed that the successor in law to such party shall also be bound by the terms of this Agreement as if such party were an original part hereto. Subject as aforesaid, no party shall assign its interest under this Agreement without the prior written consent of the other party.
- 8.5.** Notwithstanding the return or destruction of Proprietary Information as herein provided, the Service Provider and the licensee of the Project Data will be bound by the obligations of confidentiality and all other obligations which will survive the termination of the Agreement. A confidentiality agreement will be executed between the service provider and the licensee and a copy of the same will be furnished to DGH for record.
- 8.6** Service provider and the licensee shall use the data solely for the purpose of E&P activities. Licensee will also be subject to Indian laws and the jurisdiction of Indian Courts. Service provider will make provisions in this regard in their contract Agreement with licensees.

9.0. TAXES, LEVIES AND DUTIES

Service Provider shall be solely liable for payment and shall pay all taxes including service tax, if any, fees or charges for the services rendered, customs duties, stamp duties, registration fees, taxes on property, levies, fees or charges generally applicable from time to time in India or in the Country where any activity mentioned in this Agreement is conducted. The taxes shall include all personnel and corporate taxes as well as all other taxes including service taxes arising out of this Agreement and shall be borne by the Service Provider, and the DGH shall have no liability in this regard.

10.0. ADDRESSES FOR NOTICES

- a) **Directorate General of Hydrocarbons (DGH)**

OIDB Bhawan, Tower A, Plot No. 2,
Sector- 73,

Noida-201301

INDIA

Fax: 0120-2472000

Attn: Director General (Hydrocarbons)

b) Service Provider

.....

.....

..... Attn: Authorised Person (specify)

11.0. TERMINATION AND / OR CONCLUSION OF AGREEMENT DURATION:

11.1. In case of breach of any of the obligations and conditions stipulated in this Agreement, the DGH shall have the right to terminate the Agreement without compensation, for which DGH will first issue a show cause notice giving 30 days time to the Service Provider to reply.

11.2. DGH may at any time terminate the Agreement by giving 30 days notice to Service provider, without compensating the Service Provider, if the Service Provider becomes bankrupt or otherwise insolvent or for reasons of national security.

11.3 This Agreement will be liable to be terminated in the event of non validity of the Bank Guarantee. Such non validity, prior to compliance with Clauses 6.1, 7.1, 15.4 and 15.5 of the Agreement, if not rectified expeditiously by the Service Provider on his own, may result in seizure and/or confiscation of the Project Data along with vessels, equipments etc., besides appropriate legal action being taken.

11.4. Either party shall have the right to terminate this Agreement on account of Force Majeure as set forth in Clause 14.

11.5 The Agreement shall be liable for termination without any compensation if it is found at any stage that the Service Provider has furnished false information.

11.6. Upon termination under any Clause of this Agreement, all data (both DGH Data and Project Data) and reports or any other material shall be returned to DGH at no cost within a period of 30 days from the date of termination and all the rights of the Service Provider under this Agreement shall cease from the date of termination.

11.7. Notwithstanding the termination or conclusion of the Agreement, the parties shall continue to be bound by the provisions of this Agreement that require some action after the termination or conclusion of this Agreement.

12. SAFETY

The service provider undertaking the survey shall be responsible to ensure that the concerned operation is conducted with due regard to the safety and health of persons including divers and safety and security of property engaged in the operation.

13.0. INDEMNIFICATION

13.1. The Service provider hereby agrees to indemnify and hold DGH harmless from any loss or liability, (including all/any of attorney's fees and related legal expenses), arising out of any claim for damages to Service Provider's property and injuries to or death of Service provider's employees and agents caused by, or incidental to Service provider's performance under this Agreement, regardless of reasons or causes of any such loss, liability, injury, or death.

13.2. The Service Provider agrees to indemnify and hold the DGH harmless for any direct, indirect punitive, incidental or consequential damages to anybody including, without limitation, loss of production or business interruptions which result in any manner, directly or indirectly, from the performance of this Agreement.

14.0. FORCE MAJEURE

14.1. In the event of either party being rendered unable by Force Majeure to perform any obligation required to be performed by them under the Agreement, the relative obligation of the party affected by such Force Majeure shall be suspended for the period during which such cause lasts. The term "Force Majeure" as employed herein shall mean "natural phenomena or calamities, earthquakes, typhoons, fires, wars declared or undeclared, hostilities, invasions, blockades, riots, strikes, insurrection and civil disturbances but shall not include the unavailability of funds"

14.2. Where a Service Provider is claiming suspension of its obligations on account of Force Majeure, it shall promptly, but in no case later than fifteen (15) days after the occurrence of the event of Force Majeure, notify the DGH in writing with full particulars of the Force Majeure, the estimated duration thereof, the obligations affected and the reasons for its suspension.

14.3. The Service Provider affected shall promptly notify DGH as soon as the Force Majeure event has been removed and no longer prevents it from complying with the obligations which have been suspended and shall thereafter resume compliance with such obligations as soon as possible.

14.4. The Service Provider asserting the claim of Force Majeure shall have the burden of proving that the circumstances constitute valid grounds of Force Majeure under Clause 14.1 and that Service Provider has exercised reasonable diligence and efforts to remedy the clause of any alleged Force Majeure.

15.0. PROCEDURE FOR CLEARANCE FROM MINISTRY OF DEFENCE

15.1. The Speculative Multi-client survey in the area will be carried out under the direct supervision of representative of DGH/Government in order to ensure security of physical oceanographic data. It would be mandatory for all seismic survey vessels and aircrafts deployed by Joint venture/foreign/private companies to have such representatives embarked onboard from the time for inspection of the vessel/aircraft till the completion of Geo-scientific Survey.

15.2. The Service Provider will be required to seek clearance from Ministry of Defence and other Government Agencies whenever such data is sought to be sent out of India, provided however that if the processed data is based on the raw data already cleared by such agencies, no fresh clearance will be required. For this purpose the service provider will have to submit a self-contained proposal to DGH who will forward the same to Ministry of Petroleum and Natural Gas for taking it up with other Government Agencies.

15.3. The Service Provider is required to ensure that all foreign personnel onboard vessels have been duly cleared by the Ministry of Home Affairs and any other Government Agency designated for this purpose. Particulars of employees of Indian origin shall also be furnished to Ministry of Home Affairs.

15.4. The Service Provider will forward raw data within one month of completion of Geo-scientific survey(s), through DGH, to Integrated Headquarters of Ministry of Defence (Navy)/Naval Hydrographic Office (NHO), Dehradun and to Air HQs, free of cost.

- 15.5.** The Geo-scientific Data of coastal and sea floor surface including geo-physical, geo-magnetic and seismological data, geo-chemical characteristics (rocks & sediments etc.) and bathymetric data, as and when collected by the Service Provider, must be shared with DRDO and Integrated Headquarters of the Ministry of Defence (Navy), in processed form free of cost. The DGH will facilitate sharing of this data.
- 15.6.** Vessels and aircraft will operate in the Exclusive Economic Zone of the country in accordance with the provisions of the Territorial Waters, Continental Shelf, Exclusive Economic Zone and other Maritime Zones Act., 1976, and other rules and regulations in force in this regard.
- 15.7.** NAVAREA warnings issued by Chief Hydrographer to the Government of India will be strictly followed by the Service Providers in the Area cleared for Geo-scientific Survey/Activities. In case of any failure to vacate the area covered by NAVAREA warning within specified period, the Government or the DGH will not be liable for any damage, and the entire liability shall rest with the Service Provider.
- 15.8.** Vessels and aircraft detained for violating the existing rules and regulations are liable to be escorted to the nearest port and detained till investigations are completed or fresh clearance is accorded. All such actions will be at the Service Provider's cost.
- 15.9.** The Service Provider would continue to apply for a case-by-case approval of the Ministry of Defence and related Agencies for the deployment of vessels and aircraft for Geo-scientific Survey/Activities in the Area cleared by Ministry of Defence as per laid down regulations.
- 15.10.** All flights to /from vessels (if any), when within or likely to be within Air Defence Identification Zone (ADIZ), will operate strictly in accordance with the provisions of rules/instructions issued by DGCA/IAF, especially in respect of the requirement for Flight Plan clearance, Air Defence clearance and clearances under other rules and regulations in force.
- 15.11.** The conditions and restrictions specified for acquisition, processing and interpretation of data, if any, by Ministry of Defence and related Agencies would be adhered to by the Service Providers.

16.0. DISPUTE RESOLUTION

- (i) In the event of any dispute or difference between the parties hereto, such disputes or differences shall be resolved amicably by mutual consultation. If such resolution is not possible, then the unresolved dispute or difference shall be referred to arbitration of the sole arbitrator to be appointed by the Secretary, Ministry of Petroleum & Natural Gas on the recommendation of the Secretary, Department of Legal Affairs ("Law Secretary), and Government of India. The provisions of Arbitration and Conciliation Act, 1996 (NO. 26 of 1996) shall be applicable to the arbitration under this clause. The venue of arbitration proceedings, unless Parties agree otherwise, shall be New Delhi. The language of arbitration proceedings shall be English. The arbitrator shall make a reasoned award(the "Award"), which shall be final and binding on the parties subject to provisions of the Arbitration and Conciliation Act, 1996. The expenses of the arbitration proceedings shall be shared equally by the parties to be agreement. However, Expenses incurred by each party in connection with the preparation, presentation shall be borne by the party itself.

- (ii) Pending the submission of and/or decision on a dispute, difference or claim or until the arbitral award is published; the Parties shall continue to perform all of their obligations under this Agreement without prejudice to a final adjustment in accordance with such award.

17.0. GOVERNING LAW AND JURISDICTION

This Agreement, including all matters connected with this Agreement, shall be governed by the Indian Laws in force, both substantive and procedural. Nothing in this agreement shall entitle the service provider to exercise the rights privileges and power conferred upon it by this agreement in a manner which will contravene the laws of India. This Agreement shall be subject to the exclusive jurisdiction of competent Courts at Delhi / New Delhi.

DATED AS OF THE ----- DAY OF ----- 20...

.....

Director General
Directorate General of Hydrocarbons

.....

Head, Multi Client Services
Authorised Signatory of the Service Provider

Work Program and Deliverables:

(The Service Provider has to specify the details, as appropriate, out of the following indicative list based on the requirements of survey/ activities.)

1. Area and Layout:

- 1.1 Location Map (with indicative seismic lines) and the proposed survey Area along with boundary co-ordinates (Latitude, Longitude and XY) and extent of Area in Sq. Km. - One PDF copy; One hard copy.

2. Activities and Modality:

The Service Providers should furnished full details of Geo-scientific Survey/Activities including Onland/ Offshore/ Airborne acquisition of Geo-scientific Data through seismic, gravity, magnetic, magneto telluric, geochemical surveys etc. and activities which may cover processing, reprocessing, interpretation, reinterpretation etc. of Geo-scientific Data. These details should include the volume of Geo-scientific Survey/Activities in appropriate units such as line kilometers, Sq. Km etc.

3. Deliverables on the conclusion of Geo-scientific Survey/Activities*:

- 3.1. Original raw data tapes: One set
- 3.2. Copied tapes of raw data: One set
- 3.3. Processed data tapes: One set.

**The media for submission of Project Data will be as per the latest industry standards (e.g. Cartridges 3592 in case of seismic surveys) or as prescribed by DGH.*

- 3.4. Two sets of each report (both in hard and PDF form) of Acquisition and/or Processing and/or Interpretation incorporating the following:
 - (a) Acquisition report should include daily production reports in compiled form, Calibration and experiment details, actual parameters etc.

- (b) Processing report should include the applied processing sequence with its parameters
- (c) Interpretation report should include fault & horizon interpretation (ASCII) and input from the available geophysical and geological data.
- (d) Lead Identification report with prioritization of identified leads.

3.5. Indicative Deliverables specific to Seismic surveys, if applicable:

3.5.1 One set of intermediate gathers (in digital form):

- (a) Navigation merged Shot Gathers-SEG Y
- (b) PSTM Gathers (unmuted)-SEG Y
- (c) PSDM Gathers (unmuted)-SEG Y

3.5.2 (a) Navigation Data (Final Navigation Data, Source and Receiver Navigation)-ASCII: Soft Copy (One set)

- (b) Base Map: Two sets (Hard Copy), One set (CD)
- (c) Processed (Stack) and interpreted data: One soft copy each
- (d) PSTM Velocity -SEG Y: Soft Copy- One Set
- (e) PSDM Velocity –SEG Y: Soft Copy- One Set

3.5.3 Final Sections with side label and velocity boxes (for 2D survey):

- (a) One set of Black and White Reduced Scale Paper Sections; Horizontal Scale 1:200,000; Vertical Scale: 2.5"/second with side label containing Survey Parameters, Processing Sequence, and Base Map with Line highlighted.
- (b) Soft Copy of CGM plots-One set

Note: Additional Deliverables to be detailed by Service Provider for proposed specific geo-scientific activity in the Agreement

3.6 Deliverables for geo-scientific activities other than seismic survey is to be detailed by the Service Provider.

3.7 Demonstration Package comprising data/ images etc. from the Project Data in soft and hard copy as detailed in clause 7.3.

4. Reference Information:

4.1.1. Technical & geological objective for the placement of proposed lines with co-ordinates in Latitude, Longitude -One PDF copy; One hard copy

4.1.2. Parameters & specifications of proposed geo-scientific activities relating to Acquisition and/or Processing and/or Interpretation- One PDF copy; One hard copy.

BANK GUARANTEE

(To be submitted on non-judicial stamp paper)

Ref. No. Bank Guarantee No.

Date//

Valid up to

To

Directorate General of Hydrocarbons

OIDB Bhawan, Tower A, Plot No. 2,

Sector- 73 ,

Noida-201301

INDIA

Dear Sirs,

In consideration of Directorate General of Hydrocarbons, a statutory body, under the Ministry of Petroleum & Natural Gas, established in 1993 and having its office, at OIDB Bhawan, Tower A, Plot No. 2, Sector-73, Noida-201301 (hereinafter referred to as "DGH", which expression shall unless repugnant to the context or meaning thereof includes all its successors, administrators, executors and permitted assigns) having entered into an Agreement No., dated (hereinafter called "the Agreement " which expression shall include all the amendments thereto) with M/s. having its registered / head office at (hereinafter referred to as " Service Provider") which expression shall, unless repugnant to the context or meaning thereof include all its successors, administrators, executors;

The Service provider having agreed to furnish to DGH a Bank guarantee for an amount of Indian Rupees / US\$for faithful performance of the Agreement;

We (name of the bank along with address, Telex No., FaxNo.) registered under the laws of having head / registered office at

(hereinafter referred to as "The Bank" which expression shall, unless repugnant to the contest or meaning thereof include all its successors, administrators, executors and permitted assigns) do hereby guarantee and undertake to pay immediately on first demand in writing any/all moneys to

the extent of Indian Rs./US\$ (in figures)
..... (in words) without any demur, reservation, contest or protest and/or without any reference to the Service Provider. Any such demand made by DGH on the Bank by serving a written notice shall be conclusive and binding, without any proof, on the bank notwithstanding any dispute(s) pending before any Court, Tribunal, Arbitrator or any other authority and/or any other matter or thing whatsoever, as liability under these presents being absolute and unequivocal. We agree that the guarantee herein contained shall be irrevocable and shall continue to be enforceable until it is discharged by DGH in writing. This guarantee shall not be determined, discharged or affected by the liquidation, winding up, dissolution or insolvency of the Service Provider and shall remain valid, binding and operative against the Bank.

The Bank also agrees that DGH at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance, without proceeding against the Service Provider and notwithstanding any security or other guarantee that DGH may have in relation to the Service Provider's liabilities.

The Bank further agrees that DGH shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Agreement or to extend time of performance by the said Service Provider (s) from time to time or to postpone for any time or from time to time exercise any of the powers vested in DGH against the said Service Provider (s) and to forebear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Service Provider (s) or for any forbearance, act or omission on the part of DGH or any indulgence by DGH to the said Service provider(s) or any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

This Guarantee shall not be discharged by any change in our constitution, in the constitution of DGH or that of the Service Provider.

The Bank confirms that this guarantee has been issued with observance of appropriate laws of the country of issue.

The Bank also agrees that this guarantee shall be governed and construed in accordance with Indian Laws and subject to the exclusive jurisdiction of competent Indian courts of the place from where Agreement has been signed.

Notwithstanding anything contained hereinabove, our liability under this Guarantee is limited to Indian Rs./US\$ (in figures) (Indian Rs./US\$ (in words) and it shall remain in force until (indicate the date of expiry of bank guarantee) unless extended further. Any claim under this Guarantee must be received by us before the said expiry of this Bank Guarantee. If no such claim has been received by us by within the said expiry/extended date, the rights of DGH under this Guarantee will cease. However, if such a claim has been received by us within the said date, all the rights of DGH, under the Guarantee shall be valid and shall not cease until we have satisfied that claim.

In witness whereof, the bank through its authorised officer has set its hand and stamp on this day of 2013..... at

.....

(Signature)
WITNESS No. 1

(Signature)

Full name and official address Full Name, designation & (in legible letters) official Address (in legible letters) with Bank Stamp

Attorney as per power of Attorney No. _____

Date : _____

WITNESS No. 2

(Signature)

Full name and official address (in legible letters)



Annexure-IV

INDIA
HYDROCARBON VISION
-2025

INTRODUCTION

The hydrocarbons sector plays vital role in the economic growth of the country. It is necessary to have a long-term policy for the hydrocarbons sector, which would facilitate meeting the future needs of the country. The Hydrocarbons Vision - 2025 lays down the framework which would guide the policies relating to the hydrocarbons sector for the next 25 years. Issues such as energy security, use of alternative fuels, interchangeability of technology are vital to ensure that the mix of energy sources used in the economy is optimal and sustainable and that adequate quantities of economically priced clean and green fuels are made available to the Indian consumers. The estimated energy supply mix in India for a period up to 2025 is given at Annexure-I. Oil and gas continue to play a pre-eminent role in meeting the energy requirements of the country 45% of the total energy needs would be met by the oil and gas sector, though some amount of interchange between oil and gas is foreseen.

1.1 The current levels of per capita energy consumption in India are extremely low as compare to the rest of the world. In terms of comparison with the developed countries, the differentials are even more marked. The comparative figures of per capita energy consumption for India and rest of the world are in Annexure-II. Growth of the economy would lead automatically to growth in energy consumption, as there is a direct correlation between the GDP and energy consumption. The per capita consumption of primary energy and hydrocarbons (Annexure-III) reveals that India is amongst the lowest in

consumption of hydrocarbon in terms of kilograms of oil equivalent. Viewed from all angles, therefore, the hydrocarbon sector is most crucial for determining the energy, security for the country.

1.2 The presence of the Public Sector Undertakings (PSUs) in exploration, production and marketing of petroleum products has been pre-dominant in the last four decades. The oil sector PSUs stand out in performance both in terms of operational efficiencies and profitability amongst all the PSUs in India. This pre-eminence of the PSUs in the oil sector is a matter of pride.

1.3 The Vision. 2025 for the hydrocarbon sector has been prepared taking into account the above background. The action required to be taken in the medium term (3 to 5 years) and in the long term (beyond 5 years) to realise the Vision has also been brought out in this Report.

2. Hydrocarbons Vision - 2025

*To assure *energy* security by achieving self-reliance through increased indigenous production and investment in equity oil abroad.

*To enhance *quality* of life by progressively improving product standards to ensure a cleaner and greener India. .

*. To develop hydrocarbon sector as a globally competitive industry which could be benchmarked against the best in the world through technology upgradation and capacity building in all facets of the industry.

* To have a free market and promote healthy competition among players and improve the customer service.

* To ensure oil security for the country keeping in view strategic and defence considerations.

3. Exploration and Production Sector

The gap between supply and availability of crude oil, petroleum products as well as gas from indigenous sources is likely to increase over the years (**Annexure-IV**). The growing demand and supply gap would require increasing emphasis to be given to the exploration and production sector. The objectives of the exploration policy would be as follows:-

3.1 Objectives

a) To undertake a total appraisal of Indian sedimentary basins for tapping the hydrocarbon potential and to optimise production of crude oil and natural gas in the most efficient manner so as to have Reserve Replacement Ratio of more than 1.

b) To keep pace with technological advancement and application and be at the technological forefront in the global exploration and production industry.

c) To achieve as near as zero impact, as possible, on environment.

3.2 To achieve the above objectives the following actions are required to be taken.

3.3 Medium term

i) Continue exploration in producing basins.

ii) Aggressively pursue extensive exploration in non-producing and frontier basins for knowledge building' and new discoveries, including in deep-sea offshore areas.

iii) Finalise a programme for appraisal of the Indian sedimentary basins to the extent of 25% by 2005, 50% by 2010, 75% by 2015 and 100% by 2025. Sufficient resources to be made available for appraising the unexplored/party explored acreages through Oil Industry Development Board (OIDB) cess and other innovative resource mobilisation approaches including disinvestment and privatisation.

iv) Provide internationally competitive fiscal terms, keeping in view the relative prospectivity perception of Indian basins, in order to attract major oil and gas companies and through expeditious evaluation of bids and award of contracts on a time bound basis.

v) Optimise recovery from discovered/ future fields.

vi) Improve archival practices for data management .

vii) Continue technology acquisition and absorption along with development of indigenous Research & Development (R&D).

viii) Ensure adequacy of finances for R&D required for building knowledge infrastructure.

ix) Make Exploration and Production. (E&P) operations compatible with the environment and reduce discharges and emissions.

x) Support R&D efforts to reduce adverse impact on environment.

xi) Acquire acreages abroad for exploration as well as production.

3.4 Long term

- i) 100% exploration coverage of the Indian sedimentary basins by 2025.
- ii) Leapfrog to technological superiority.
- iii) Put in place abandonment practices to restore the original base line.
- iv) Conserve resources and adopt clean technologies.

4. External policy & Oil Security

4.1 Objectives

Supplement domestic availability of oil with a view to provide adequate, stable, assured and cost effective hydrocarbon energy to the Indian economy.

4.2 To achieve the above objective the following actions are required to be taken.

4.3 Medium term

- i) Put in place a comprehensive policy to include total deregulation of overseas E&P business and empowering them to compete with international oil companies with provision of fiscal and tax benefits.
- ii) Evolve a mechanism to leverage India's "Buyer Power" to obtain quality E&P projects abroad.
- iii) Have focussed approach for E&P projects and build strong relations in focus countries with high attractiveness like Russia, Iraq, Iran and North African countries.

5. Natural Gas.

Natural gas is emerging as the preferred fuel of the future in view of it being an environmental friendly economically attractive fuel and also a desirable feedstock. Increased focus needs to be given to this potential sector.

5.1 Objectives

- a) To encourage use of natural gas, which is relatively a clean fuel.
- b) To ensure adequate availability by a mix of domestic gas imports through pipelines and import of LNG.
- c) To tap unconventional sources of natural gas like coal bed methane, natural gas hydrates, underground coal gassification etc.

5.2 To achieve the above objectives the following actions are required to be taken.

5.3 Medium term

- i) Timely and continuous review of gas demand and supply options to facilitate policy interventions.
- ii) Pursuing diplomatic and political initiatives for import of gas from neighbouring and other countries with emphasis on transnational gas pipelines.
- iii) Expediting setting up of a regulatory framework.
- iv) Import LNG to supplement the domestic gas availability and encourage domestic companies to participate in the LNG chain.
- v) Provide a level playing field for all the gas players and ensure reasonable transportation tariffs. .
- vi) Rationalise customs duty on LNG and LNG projects.
- vii) Put in place an effective organisational structure, which would facilitate progress in the National Gas Hydrates Programme.
- viii) Operationalise the Coal Bed Methane Policy with a time bound programme.
- ix) Formulate National Policy on Underground Coal Gassification in a time bound manner.

x) Increase R&D efforts on conversion of gas to liquids.

5.4 Long term

- i) Review of LNG option in the light of economic, political and energy security considerations.
- ii) Exploit the gas hydrates reserves.
- iii) Produce gas from Coal Bed Methane and through Underground Coal Gassification.
- iv) Commercialize the production and use of alternate fuels like Di-Methyl Ether and use of Fuel Cells through increased R&P efforts.

6. Refining & Marketing

This is another important sector and its development is crucial for having self-sufficiency in petroleum products and in moving towards a consumer oriented competitive market.

6.1 Objectives

- a) To maintain around 90% self-sufficiency of middle distillates in the sector with an appropriate mix of national oil companies, foreign players and private Indian players.
- b) To develop a globally competitive industry.
- c) To have a free market and healthy competition amongst players. .
- d) To develop appropriate infrastructure such as ports, pipelines etc. for an efficient hydrocarbons industry.
- e) To improve customer services through better retailing practices.
- f) To make available un-adulterated quality products at reasonable prices.
- g) To achieve free pricing for products while continuing subsidized prices for

some products in certain remote areas, Which are to be identified and reviewed from time to time.

6.2 To achieve the above objectives, the following action is required to be taken:-

6.3 Medium term

- i) Grant operational flexibility to refineries in crude sourcing and in respect of risk management through hedging.
- ii) Set out a timetable for achieving product quality norms to conform to cleaner environmental standards and to global standards by 2010.
- iii) Formulate a clear stable long-term fiscal policy to facilitate investment in refining, pipeline and marketing infrastructure.
- iv) Grant full operational freedom to existing PSUs to establish and maintain marketing networks and allowing entry of new players into the marketing sector through a transparent and clear entry criteria and provide a level playing field for new entrants.
- v) Make marketing rights for transportation fuels conditional to a company investing or proposing to invest Rs.2000 crores in E&P, refining, pipelines or terminals. Such investment should be towards additionality of assets and in the form of equity, equity like instruments or debt with recourse to the company.
- vi) Set up mechanisms to enable new entrants to establish own distribution networks for marketing without encroaching on the retail networks of existing marketing companies.
- vii) Set up a common regulatory mechanism for downstream sector and natural gas.

Viii) To take up with the States for a uniform State level taxation on petroleum products.

ix) Provide for level tax rates for domestic products vis-a-vis imported products.

x) Increase the ceiling of Foreign Direct Investment (FDI) in refining sector from the present level of 49% to 100%.

xi) Provide a level playing field among all market participants.

6.4 Long term

i) Develop an optimal transportation mix keeping in view the existing rail and port infrastructure.

ii) Develop a policy for encouragement of transportation of crude through Indian flag vessels.

iii) Develop a policy for transportation of LNG preferably through Indian flag vessels.

iv) Provide for massive capacity expansion of the refining and marketing infrastructure to be taken up. The total investment in refining sector upto 2025 is estimated at Rs.2, 50,000 crores while the same for the marketing infrastructure is estimated at Rs.1, 35,000 crores.

7. Tariff and Pricing

A rational tariff and pricing policy is vital to ensure healthy growth of the hydrocarbon sector and to protect the consumers as well.

7.1 Objectives

a) To provide incentives for cleaner, greener and quality fuels to promote environment friendly Hydrocarbon sector.

b) To balance the need to boost Government revenue with need to align

duties with Asia - Pacific countries and moving the prices to international levels.

c) To promote new investments, by ensuring adequate protection to domestic producers.

d) To remove subsidies and cross subsidies to promote efficient and optimal utilisation of scare resources and also to eliminate adulteration.

7.2 To achieve the above objectives the following actions are required to be taken.

7.3 Medium term

i) Phase out existing subsidies as early as possible.

ii) Set up a Group of Experts to determine appropriate levels of tariffs and duties for introduction in a phased manner as early as possible.

iii) Transfer freight subsidy on supplies to far flung areas and subsidies on products to fiscal Budget. Necessity for concession is to maintain the supply line to hilly and remote areas, after decontrol of marketing.

iv) Increase linkage of consumer price of natural gas from current level of 75% fuel oil (FO) import parity to near 100%.

8. Restructuring and Disinvestment

8.1 Objective

The core objective of industrial restructuring is to maintain long-term profitability and strengthen competitive edge of the concerned companies in the context of changes in market forces and also to ensure that the consumers benefit by the restructuring.

8.2 To achieve the above objectives the following actions are required to be taken.

8.3 Medium term

The following sequence needs to be followed:-

- i) Announce policy in regard to specific public sector enterprises in alignment with the overall disinvestment policy of the Government.
- ii) Complete the internal restructuring of oil PSUs, making full use of information technology.
- iii) Implement proposals of mergers and alliances of oil PSUs with the objective of enhancing shareholder value.
- iv) Disinvest in a phased manner in oil PSUs down to appropriate level to realise best shareholder value.

9. Conclusion

The Hydrocarbon Vision articulated in this report has to be converted into prioritized action agenda for implementation in the medium and long term. In brief, the main thrust of the activities would be:-

- a) Focus on oil security through intensification of, exploration efforts and achievement of 100% coverage of unexplored basins in a time bound manner to enhance domestic availability of oil and gas.
- b) Secure acreages in identified countries having high attractiveness for ensuring sustainable long term supplies.
- c) Pursue projects to meet the deficit in demand and supply of natural gas, and facilitate availability of LNG.

d) Maintain adequate levels of self-sufficiency in refining (90% of consumption of middle distillates).

e) Establish adequate strategic storage of crude and petroleum products in different locations.

f) Create additional infrastructure for distribution and marketing of oil and gas.

g) Open up the hydrocarbon market so that there is free and fair competition, between public sector enterprises, private companies and other international players.

h) Create a policy framework for cleaner and greener fuels.

i) Have a rational tariff and pricing policy, which would ensure the consumer getting the petroleum products at the most reasonable prices and requisite quality, eliminating adulteration.

j) Announce a long-term fiscal policy to attract required investments in the hydrocarbon sector.

k) Restructure the oil sector PSUs with the objective of enhancing shareholder value and disinvest in a phased manner in all the oil sector PSUs.

l) To develop regulatory and legislative framework for providing oil/gas security 'for the country.

Annexure-I

Share of future energy supply in India (%)

Year	Coal	Oil	Gas	Hydel	Nuclear
1997-98	55	35	7	2	1
2001-02	50	32	15	2	1
2006-07	50	32	15	2	1
2010-11	53	30	14	2	1
2024-25	50	25	20	2	3

Source: Upto 2011 from Technical Note on Energy, Planning Commission, Govt. of India (1998-99). Beyond this period the figures have been extrapolated.

Share of hydel energy remains constant considering the planned capacity addition upto 2012 and projected at the same level upto 2025.

Annexure-II

Per capita Energy consumption in million tonnes of oil equivalent (MTOE)

Country/Region	1987	1997
World	1.5	1.5
India	0.2	0.3
China	0.6	0.7
North America	5.8	6.3
Europe	3.1	3.1
Former Soviet Union	4.7	3.2
Rest of the World	0.6	0.7

Source: British Petroleum Statistics-1998

Annexure-III

Per capita consumption of Energy vis-à-vis Hydrocarbons

(in Kg of oil equivalent)

Country/Region	Primary Energy	Hvdro-Carbons
World	1454	927
India	285	113
China	688	169
Pakistan	264	231
Bangladesh	81	80
Japan	3962	2520
U.K.	3856	2719
Germany	4102	2539

Source: British Petroleum. Statistics - 1998

Annexure-IV

Supply/Demand-Petroleum Products (in MMT)

Year	Demand (without meeting gas deficit)	Demand (with meeting gas deficit)	Estimated refining capacity	Estimated crude requirement
1998-1999	91	103	69	69
2001-2002	111	138	129	122
2006-2007	148	179*	167	173
2011-2012	195	195**	184	190
2024-2025	368	368	358	364

* Assuming 15 MMTPA of LNG import by 2007.

** Assuming that by 2012, adequate gas is available through imports and domestic sources.

Source: Report of the Sub-Group on development of refining, marketing transportation and infrastructure requirements (1999).

As against this requirement the present domestic crude production is 33 MMT. The gap will have to be met through imports and increase in domestic production.

SUPPLY/DEMAND-NATURAL GAS (in million standard cubic meters per day)

	(MMSCMD)
	DEMAND
1999-2000	110
2001-2002	151
2006-2007	231
2011-2012	313
2024-2025	391

Source: Report of the Sub-Group on development and utilisation of natural gas (1999).

As against this requirement, the present domestic gas supply is 65 MMSCMD. The gap will have to be met from imports, increase in domestic production and by switching to liquid fuels.