

NOTICE

Government of India invites suggestions from the general public, all stake holders, experts in Oil & Gas sector, environmental experts, NGOs, other persons and entities concerned, on the draft policy for exploration and exploitation of Shale Oil and Gas in India.

The comments and suggestions may be sent to the following address not later than 31.08.2012.

The Joint Secretary (Exploration),
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DRAFT POLICY FOR THE EXPLORATION AND EXPLOITATION OF SHALE OIL & GAS IN INDIA

1. INTRODUCTION

India is 4th largest oil and gas consumer in the world after USA, China and Japan. Share of crude Oil and Gas in primary energy consumption is about 40.3%, which is second to coal which is meeting 53% of the total requirements. Though the contribution of hydro, nuclear, and other renewable energy is slated to rise in the coming years, dependence on coal, oil and gas is likely to continue. In recent years, natural gas has increasingly become the preferred option globally, as it offers clean and low price energy equivalence to expensive liquid fuel. Demand of natural gas in India was 179 MMSCMD during the year 2010-11 and it is projected to be 473 MMSCMD in 2016-17¹. As against this, the total production of natural gas from indigenous sources was 146 MMSCMD during the year 2010-11. Further, about 75% of domestic oil consumption is met through imports, as the crude oil production in 2010-11 was 38.19 MMT and projections at 41.15 MMT in 2016-17 are nowhere near the requirement. Thus, there is an express need for availability of natural gas to be enhanced. This has necessitated the need to explore vigorously for unconventional or alternate hydrocarbon resources like Coal Bed Methane (CBM), Shale Gas / Oil, and Gas Hydrates etc.

2. BACKGROUND:

2.1 Unconventional gas resources are also natural gas deposits but in a different and difficult environment from the exploitation point of view. Technically, these are the gas deposits where permeability of the surrounding rock is too low to permit standard drilling techniques. Technological advance have allowed companies to exploit some of these natural gas deposits in recent times. There are four main types of

¹ As per 12th plan document of MoP&NG

unconventional gas resources: Coal Bed Methane (CBM), Shale Gas, Hydrates and Tight Gas. Steps were taken by the Government to develop CBM resource in the country by formulating CBM Policy in 1997. Success of the of the recent specialized techniques such as horizontal drilling combined with fracturing of the rock has led to path breaking development of Shale Gas as an unconventional or alternate gas resource.

SHALE OIL & GAS

2.2 Definition and explanations:

2.2.1 **Shale Gas** means natural gas generated in-situ and retained in Shale matrix storage, adsorbed onto organic particles, or within fractures in shales of source rock origin and obtained there from through boreholes.

2.2.2 **Shale Oil** means crude oil that is generated in-situ and retained in shale matrix storage in shales of sources rock origin and obtained there from through boreholes.

2.2.3 **Shale Gas and Shale Oil reservoirs** are continuous gas or oil accumulations in shale that persist over a large geographical area and are generally characterized by lack of oil-water contacts. These are unconventional in their mode of occurrence and exploitation technology. They are producible only through special stimulation techniques.

2.2.4 **Shale Gas and Shale Oil blocks** will have specific operational window for shale oil/ gas, in terms of sub-surface vertical depth. Any sub-surface formation producing hydrocarbons, other than that which can be geologically classified as shale, under standard and universally accepted norms, are excluded from this policy.

2.3 India has several Shale formations indicating the presence of Shale Oil/Gas. Preliminary estimates suggest that fairly thick sequences with high shale gas potential are extensively present in the oil, gas and coal sedimentary basins such as Cambay, Gondwana, Krishna-Godawari on land and Cauvery on-land. Directorate General of Hydrocarbons (DGH) has initiated steps to identify prospective area for Shale Gas exploration and acquisition of additional geo-scientific data. With new exploration technologies, such as multistage hydraulic fracturing or “fracking” combines with horizontal drilling, Production of shale gas has become easier and economic, contrary to the different countries has the potential to bring about drastic changes in composition of their energy basket.

2.4 A recent study (April 2011) by Energy Information Administration (EIA), USA indicates that there is a significant potential for Shale Gas that could play an increasingly important role in global natural gas markets. The Report assessed 48 Shale Gas basins in 32 countries. India is one of the countries covered in this Report along with Canada, Mexico, China, Australia Libya, Brazil etc. The initial estimate of technically recoverable shale gas resource in these countries (5,760 TCF²), and USA (862 TCF) put together works out to 6,622 TCF. This study has assessed risked gas-in-place of 290 TCF with technically recoverable resource of 63 TCF for 4 out of 26 sedimentary basins in India. In view of the advances made by the USA in exploration and recovery of shale oil and gas resources, MoP&NG has entered into and MOU with the United States Geological survey (USGS). In a study conducted by the USGS in 2011-12, technically recoverable resource of 6.1 TCF has been estimated in 3 out of 26 sedimentary basins in India. The study also indicates potential for shale oil in Indian basins. Further, process of identification of potential shale oil/gas resources in 11 other basins has also been initiated.

2.5 Issues in exploitation of Shale Gas/ Oil:

- I. Optimal Exploitation of Shale Gas/ Oil requires Horizontal and Multilateral wells and Multistage Hydraulic fracturing treatments of stimulate oil and gas production from shale.
- II. This may require large volume of water~3-4 million gallons per well (11000 to 15000 cubic metres of water required for drilling / hydro fracturing depending upon the well type and Shale characteristics).
- III. The water after Hydraulic fracturing is flowed back to the surface and may have high content of Total Dissolved Solids (TDS) and other contaminants (typically contains proppant (sand), chemical residue occur in many geologic formation, mainly in shale). Therefore, the treatment of this water before discharge to surface / subsurface water needs to be in line with the Central / State Ground Water Authority regulations.
- IV. Possibility of contamination of Aquifer (both surface ad subsurface) from hydro-fracturing and fracturing fluid disposal and the need for safeguarding the Aquifer. Multiple casing programme (at least 2 casings) will be mandatory requirement across all sub-surface fresh water aquifers.

Details of measures proposed relating to water management issues in commercial exploitation of Shale Oil/ Gas are placed at **Annexure-I**

2.6 Although there are no specific provisions as on date relating to regulation of the process of hydraulic fracturing, and water injection process as has been provided in the Safe Drinking Water Act (SDWA) brought out by the Environment Protection Agency (EPA) in the USA, the water (prevention and control of pollution) act 1974, has stringent provisions to regulate / prohibit disposal of polluting matters into water streams / wells (section 24-25). As per section 3(J) (iv) of the Act, streams include **subterranean waters**, which would include Aquifers. Extracts of the Act are placed at Annexure-II. Further, the

National environment policy 2006 para 5.2.5 (ii) Point (i) action plan states as under:

“Suitable sites for dumping the toxic waste material may be identified and remedial measures may be taken to prevent the movement of the toxic waste in the ground water.”

3. PROPOSED POLICY FOR EXPLORATION AND EXPLOITATION OF SHALE OIL AND GAS.

3.1 In line with the policy of the Government of India attracting private investment to move towards self reliance in the indigenous production of oil and gas sector, it is important to have a framework to facilitate and regulate Shale Oil and Gas Exploration and Exploitation. This initial technical study undertaken in the country has indicated presence of Shale Gas as a hydrocarbons resource that can be commercially explored and exploited.

3.2 The offer of acreages under this policy would be made through an open International Competitive Bidding (ICB) process. The successful bidders would be required to enter into a contract with the Government, which will be negotiated based on the Model Contract (MC).

3.3 Simultaneous Exploration and Exploitation of Hydrocarbons i.e. conventional Oil and Natural Gas, Coal Bed Methane (CBM), tight gas and Shale Oil and Gas from the same contract area by same/ different operators will be governed by the relevant policy of the Government of India. As such, in case of acreage an offer for shale oil / gas overlaps or falls within an existing Oil and Gas /CBM Block, right of first refusal will be offered to the existing contractor to match the offer of the selected bidder, **provided he agrees to all the terms and conditions of the bid. In case they refuse, they will have to enter into a model co development /operating agreement for simultaneous exploration.**

3.4 All areas which are already allotted under nomination /pre NELP/NELP/CBM rounds and where operations **have entered the development/production phase** shall be excluded from area to be offered for shale oil/ gas exploration.

3.5 As financial and contractual regime for conventional oil and gas and shale oil and gas are different, in case of the same contractor operating both the blocks, the policy will be to adequately ring fence the two so that two distinct accounts are maintained, without affecting each other.

3.6 Assignment of Interest would be permitted, as in NELP.

3.7 All data gathered during the course of operation shall be the property of the GOI.

3.8 Safety aspects will be regulated as per existing regulations / OISD guidelines and practices, as in the case of Oil and Gas and CBM operations. New rules / guidelines, whenever notified by competent authority, in this regard, will also become applicable.

3.9 Ministry of Environment and Forest (MOEF) will prescribe a panel of agencies, competent to carry out the Environment Impact Assessment for the blocks allotted to successful bidder.

3.10 Govt. of India will seek in-principle approval of the State Governments concerned, for the areas of shale oil / gas blocks, prior to bidding, including facilitation in the matters of land acquisition and water management issues.

3.11 Govt. of India will ensure all statutory, regulatory and security clearances are obtained before bidding.

3.12 Exploration of Shale oil / gas will be accordance with the law of the land, including the Water (prevention and control of pollution) act, 1974, Air (prevention and control of pollution) act, 1981 and the overall ambit of environment protection measures.

4. FISCAL AND CONTRACT TERMS.

4.1 The fiscal terms to be offered to the investors need to be adequately balanced in terms of risks and rewards associated with the exploration of shale oil/ gas, being unconventional and cost intensive in nature. It should be globally complete and comparable to terms offered for similar operations elsewhere.

4.2 Fiscal regime proposed for exploration of shale oil / gas is proposed to be based on royalty and production linked payments, similar to the regime adopted for CBM operations. Ad-valorem Royalty at the prevailing rate for crude oil and natural gas would be applicable to shale oil and gas respectively, and accrue to the State Governments, whereas the production liken payment on ad-valorem basis, will be made of the central government. This is proposed to be linked to different production slabs which will be biddable item. This will minimise Government intervention and remove complications in accounting, and incentive for gold plating, which may occur while allowing profit sharing, based on cost recovery. Government share of production will be net of all statutory dues.

4.3 A Steering Committee will be constituted under the Contract represented by the Government and the contractor which will decide upon the issue on projects / major work programs, audits and accounts with a view of exploit resources optimally. The Steering Committee will be chaired by the 1st Government Nominee. The relevant matters shall be submitted by contractor with the approvals of Operating Committee to Steering Committee. The District Collector (DC) of the District where the block is situated will be member of the Steering committee, to facilitate the required assistance and coordination from the State Government side. Further, a member of Ministry of Environment and Forest (MOEF) and NEERI may also be included in the committee.

4.4 As shale gas / oil production is likely to be made in small quantity but over a longer period, it is proposed that the mining lease (ML) may be given for 30 years. Further, extension of ML may be made automatic to all the contractors who do not have any dispute with the State /Central Government, and who do not have any arbitration pending.

Broad of fiscal and contract terms are placed at **Annexure-III**

5. BIDDING AND APPROVAL SYSTEM

- 5.1 Blocks for shale oil /gas would be identified by the MoPNG and the relevant data package and information docket for each block so identified will be made available for interested companies for inspection and purchase.
- 5.2 The size of the blocks and sub-surface operational window of depth will be determined by MoP&NG keeping in view the resources –in-place, the prospectively of shale, location of the resource in relation to human habitations and economics of scale in Shale Gas operation along with other relevant factors.
- 5.3 The identified blocks will be advertised for international competitive bidding. Participation of the State will not be mandatory. Requisite promotional exercise would be undertaken to apprise the prospective bidders with the proposed fiscal and contractual arrangement.
- 5.4 In addition to the round system of bidding. The Government may adopt Open Acreage Bidding system at any given point of time.
- 5.5 Offer of blocks would be open to different categories of investors, i.e. public / private sector and domestic / foreigners. Up to 100% participation by foreign companies and participation through unincorporated Joint Ventures would be permitted;
- 5.6 To provide for a transparent bid evaluation system, detail bidding formats would be provided to the interested companies to maintain uniformity in submission of bid documents.
- 5.7 Evaluation of bids received by the bid closing date would be done by a team constituted by the MoP&NG, which may include officers having knowledge and experience in technical and financial aspects and fiscal and contractual framework. The report of the bid evaluation committee would be submitted to the MoP&NG.

Broad bidding and evaluation terms and placed in **Annexure-IV**.

6. CONSTITUTION OF AN EMPOWERED COMMITTEE OF SECRETARIES:

6.1 It is proposed to constitute an Empowered Committee of Secretaries (ECS), which will be a standing committee, competent to take various decisions relating to allocation and monitoring of shale gas / oil exploration and production. The committee will comprise of the following Secretaries:

- (i) Cabinet Secretary.....Chairman
- (ii) Secretary, M/o P&NG.....Member
- (iii) Secretary, M/o FinanceMember
- (iv) Secretary, M/o L&J.....Member
- (v) Secretary, M/o E&F.....Member
- (vi) Secretary, M/o Defence.....Member
- (vii) Director, NEERI.....Member

6.2 The committee will be responsible for the following:

- (i) Finalization of Shale oil / gas block for offer
- (ii) Considering the report of the bid evaluation committee and to make recommendations on award of contract for shale gas / oil blocks to the Cabinet Committee on Economic Affairs (CCEA).
- (iii) Taking decisions on issues arising during the course of monitoring of exploration and production activities.
- (iv) The committee will ensure that the block offered are having necessary statutory and regulatory clearances before the bidding. The committee will also monitor the progress of clearance during various steps of contract.

6.3. Technical support and inputs as may be necessary for the deliberations of the ECS will be arranged by the MoP&NG.

7. APPROVAL OF THE CCEA FOR AWARD OF BLOCKS.

The proposals along with the recommendations of the ECS will be submitted for the final approval of the CCEA.

8. NEGOTIATIONS AND FINALISATION CONTRACTS:

8.1 A model contract shall be prepared by MoP&NG in consultation with the Law Ministry and other relevant Ministries, which will form the basis for negotiations of individual contracts with successful bidders. The terms and conditions of the A model contract will be based on Fiscal and contract terms outlined in Annexure-II.

8.2 Individual contract will be finalised through negotiations with successful bidders on such points as indicated as negotiable in the model contract, after consulting the final outcome of such negotiation with the Ministry of Law. The contract shall be executed with the approval of the Minister, Petroleum and Natural Gas.

9. COMMENTS FROM OTHER MINISRIES/ DEPARTMENTS:

The draft policy would be circulated to Ministries of Finance, Environment, and Law and to the Planning commission for comments.

10. APPROVAL OF CCEA:

10.1 Approval of the CCEA would be solicited as under:

- (i) To offer the blocks for exploitation of Shale Oil / Gas through Open Global competitive bidding.
- (ii) In case of acreage on offer for shale oil /gas overlaps of falls within an existing Oil and Gas /CBM Blocks, right of first refusal will be offered to the existing contractor to match the offer of the selected bidder.
- (iii) Fiscal and contract terms as given at **Annexure- II**

- (iv) Constitution of an Empowered standing committee of Secretaries (ECS for making recommendation to the CCEA for award Shale Oil/ Gas Blocks, comprising of:

- (1) Cabinet Secretary.....Chairman
- (2) Secretary, M/o P&NG.....Member
- (3) Secretary, M/o FinanceMember
- (4) Secretary, M/o L&J.....Member
- (5) Secretary, M/o E&F.....Member
- (6) Secretary, M/o Defence.....Member
- (7) Director, NEERI..... Member

This committee will ensure that the block offered are having necessary statutory and regulatory clearances before the bidding. The committee will also monitor the progress of clearance during various steps of contract.

- (v) A model contract will be prepared by this Ministry in consultation with Ministries of Law, Finance, Environment and other relevant Ministries. The model contract will be the basis for negotiations of contracts for individual block and the M/o Law will be consulted on the final contract to be signed. The contract shall be executed with the awardees with the approval of Minister, Petroleum & Natural Gas.
- (vi) Govt of India will seek in-principle approval of the State Governments concerned, for the areas of shale oil / gas blocks, prior to bidding, including facilitation in the matter of land acquisition and water management issues.
- (vii) There will be freedom to market Shale Gas within India on arm's length basis within the framework of the Government Policies on Marketing and Pricing of the gas. Marketing of shale oil will be as per prevailing NELP guidelines for crude oil.
- (viii) The contractor will have to abide by water management provisions and other environmental issues related to exploration and exploitation of Shale Oil /Gas within the framework of existing Central & State Environment Acts and statutes. New rules / guidelines, whenever notified by competent authority, in this regard, will also become applicable.

ANNEXURE – I

Provisions proposed for addressing water management issues.

There will be mandatory full base line testing of water and air quality before undertaking drilling of wells.

- I. Rain water harvesting provision in a suitable area in the block shall be a mandatory requirement under this Policy and will be guided by the relevant guidelines of the Govt. As far as possible, river rain or non-potable groundwater should only be utilized for hydro-fracturing jobs. Re-use/recycling of water should be the preferred method of water management.
- II. Multi-well pad based drilling would be mandatory in phase II, to have lesser footprint in view of limited land availability, local concerns and large number of wells.
- III. The other environmental issues related to exploration and exploitation of Shale Oil / Gas will be addressed by the Contractor within framework of existing Central & State Environment Acts and statues. New rules/guidelines, whenever notified by competent authority, in this regard, will also become applicable.
- IV. Ample provisions should be made by the Contractor for the Site Restoration per provisions under NELP/Govt. guidelines which will be part of the Model Contract.

ANNEXURE – II
EXTRACT FROM THE WATER (PREVENTION AND CONTROL OF
POLLUTION) ACT 1974.
No. 6 of 1974.

Section 3.

(e) “Pollution’ means such contamination of water or such alteration of the physical, chemical or biological properties of water or such discharge of any sewage or trade effluent or of any other liquid, gaseous or solid substance into water (whether directly or indirectly) as may, or is likely to, create a nuisance or render such water harmful or injurious to public health or safety, or to domestic, commercial, industrial, agricultural or other legitimate uses, or to the life and health of animals or plants or of aquatic organisms;

(j) “Streams” includes.-

- (i) river;
- (ii) Water course (whether flowing or for the time] being dry);
- (iii) Inland water (whether natural or artificial);]
- (iv) **Subterranean waters;**
- (v) Sea or tidal waters to such extent or, as the case may be, to such point as the State Government may, by notification in the Official Gazette, specify in this behalf;

(k) “Trade effluent” includes any liquid, gaseous or solid substance which is discharged from any premise used for carrying on any ⁶[Industry, operation or process, or treatment and disposal system” other than domestic sewage.

SECTION 24. PROHIBITION ON USE OR STREAM OR WELL FOR DISPOSAL OF POLLUTING MATTER, ETC.

(1) Subject to the provisions of this section --

- (a) No person shall knowingly cause or permit any poisonous, noxious or polluting water determined in accordance with such standards as may be laid down by the State Board to enter (whether directly or indirectly) into any ⁵[stream or well or sewer or on land]; or
- (b) No person shall knowingly cause or permit to enter into any stream any other matter which may tend, either directly or in combination with similar matters, to impede the proper flow of the water of the stream in a manner leading or likely to lead to a substantial aggravation of pollution due to other causes or its consequences.

- (2) A person shall not be guilty of an offence under sub-section (1), by reason only of having done any of the following acts, namely :-
- (a) constructing, improving a maintaining in or across or on the bank or bed of any stream any building, bridge, weir, dam, sluice, dock, pier, drain or sewer or other permanent works which he has a right to construct, improve or maintain;
 - (b) Depositing any materials on the bank or in the bed of any stream for the purpose of reclaiming or for supporting, repairing or protecting the bank or bed of such stream provided such materials are not capable of polluting such streams;
 - (c) putting into an stream any sand or gravel or other natural deposit which has flowed from or been deposited by the current of such stream:
 - (d) causing or permitting, with the consent of the State Board, the deposit accumulated in a well, pond or reservoir to enter into any stream.
- (3) The State Government may, after consultation with, or on the recommendation of, the State Board, exempt, by notification in the Official Gazette, any person from the operation of sub-section (1) subject to such conditions, if any, as may be specified in the notification and any conditions so specified may by a like notification and be altered, varied or amended.

SECTION 25. RESTRICTIONS ON NEW OUTLETS AND NEW DISCHARGES

⁶[(1) Subject to the provisions of this section, no person shall, without the previous consent of the State Board,--

- (a) establish or take any steps to establish any industry, operation or process, or any treatment and disposal system or an extension or addition thereto, which is likely to discharge sewage or trade effluent into a stream or well or sewer or on land (such discharge being hereafter in this section referred to as discharge of sewage); or
- (b) bring into use any new or altered outlets for the discharge of sewage; or
- (c) being to make any new discharge of sewage'

Provided that a person in the process of taking any steps to establish any industry, operation or process immediately before the commencement of the water (Prevention and Control of Pollution) Amendment Act, 1988, for which no consent was necessary prior to such commencement or, if he has made an application for such consent within the said period of three months, till the disposal of such application.

(2) An application for consent of the State Board under sub-section (1) shall be made in such form, contain such particulars and shall be accompanied by such fees as may be prescribed.

(3) The State Board may make such inquiry as it may deem fit in respect of the application for consent referred to in sub-section (1) and in making any such inquiry shall follow such procedure as may be prescribed.

⁷[(4) The State Board may --

(a) grant its consent referred to in sub-section (1), subject to such conditions as it may impose, being-

(i) In cases referred to in clauses (a) and (b) of sub-section 25, conditions as to the point of discharge of sewage or as to the use of that outlet or any other outlet for discharge or sewage;

(ii) In the case of a new discharge, conditions as to the nature and composition, temperature, volume or rate of discharge of the effluent from the land or premises from which the discharge is to be made; and

(iii) That the consent will be valid only for such period as may be specified in the order.

and any such condition imposed shall be binding on any person established or taking any steps to establish any industry, operation or process, or treatment and disposal system or extension or addition thereto, or using the new or altered outlet, or discharging the effluent from the land or premises aforesaid; or

(b) refuse such consent for reason to be recorded in writing.

(5) Where, without the consent of the State Board, any industry operation or process, or any treatment and disposal system or any extension or addition thereto, is established, or any steps for such establishment have been taken or a new or altered outlet is brought into use for the discharge of sewage or a new discharge of sewage is made, the State Board may serve on the person who has established or taken steps to establish any industry, operation or process, or any treatment and disposal system or any extension or addition thereto, or using the outlet, or making the discharge, as the case may be, a notice imposing any such conditions as it might have imposed on an application for its consent in respect of such establishment, such outlet or discharge.

(6) Every State Board shall maintain register containing particulars or conditions imposed under this section and so much of the register as relates to any outlet, or to any effluent, from any land or premises shall be open to

inspection at all reasonable hour by any person interested in, or affected by such outlet, land or premises, as the case may be, or by any person authorised by him in this behalf and the conditions so contained in such register shall be conclusive proof that the consent was granted subject such conditions]

(7) The consent referred to in-sub-section (1) shall, unless given or refused earlier be deemed to have been given unconditionally on the expiry of a period of four months of the making of an application in this behalf complete in all respects to the State Board.

(8) For the purpose of this section and sections 27 and 30.

- (a) The expression “new or altered outlet” means any outlet which is wholly or partly constructed on or after the commencement of this Act or which (whether so constructed or not) is substantially altered after such commencement.
- (b) The expression “new discharger” means a discharge which is not, as respect the nature and composition, temperature, volume, and rate of discharge of the effluent substantially a continuation of a discharge made within the preceding twelve months (whether by the same or different outlet), so however that a discharge which is in other respects a continuation of previous discharge made aforesaid shall not be deemed be a new discharge by reason of any reduction of the temperature or volume or rage of discharge of the effluent as compared with the previous discharge.

ANNEXURE-III

FISCAL REGIME AND BRAOD CONTRACT TERMS.

The fiscal and contractual regime proposed for shale oil / gas policy has been formulated keeping in view the CBM policy, which is meant for exploration and exploitation of another form of unconventional hydrocarbons resource.

FISCAL REGIME:

The proposed fiscal terms under this policy are given below:

- (i) Contractors shall pay Royalty either to the Central or the respective State Government to for shale oil/gas, at the prevailing ad-valorem rate at the well head, as determined by Government under the P&NG Rules 1959 / ORDA act 1948 for crude oil / natural gas.
- (ii) In addition, the Contractors would be required to pay to State / Central Government, license / lease fee and charge including surface rentals, land acquisition charges, water charges etc. as per the Petroleum & Natural Gas Rules or as required under any other provision.
- (iii) Contractors will be required to bid for ad valorem Production Level Payments (PLP) on a sliding scale based on incremental production wherein incremental PLP will be applicable only to the incremental production. Slabs of production rate for bidding PLP will be decide by this Ministry. This arrangement would afford the flexibility to the contractor to offer higher PLP for prospective areas and vice-versa while at the same time capturing the highest market determined value for the block on offer to the Government Production Linked Payments (PLP) would be made to the Government of India. **Further, Government share of production will be net of all statutory dues.**
- (iv) Cost Recovery will not be admissible.
- (v) The contractor will be required to pay a commercial discovery bonus of US\$ 0.3 million or its equivalent amount in Indian Rupees from Indian Companies on the declaration of commercial discovery.
- (vi) No cess would be levied on shale oil.
- (vii) The contractor would be required to pay applicable income tax as per Income Tax Act, 1961 / DTC.

- (viii) Exemption from the payment of customs duty on import of goods and materials required for exploration and exploitation of Shale Gas / Oil, as defined in NELP and other Government Guidelines.
- (ix) Contractor would be responsible for site restoration as practised under NELP / CBM contracts.

CONTRACT TERMS.

An individual contract, based on the Model Contract will be executed between the Government and the successful bidders. Following are the proposed terms for the Model Contract (MC).

- (i) The contract duration **will be of 32 (thirty two)** years and will be divided into two phases- **Phase I and Phase – II**
- (ii) **Phase I will be for a period of 7 (seven)** years and will be for exploration, appraisal, evaluation of the prospect and feasibility. This would include following:-
 - (a) Detailed Geological, Geophysical and Geochemical studies
 - (b) Drilling of test wells, hydraulic fracturing and flow rate studies.
 - (c) Scheme for availability of water and treatment / recycling / disposal/ disposal of flow back water.
 - (d) Any other study which the contractor considers relevant to assess the prospectively of the block and feasibility to exploit the resource in a commercial manner.
 - (e) Third party certification of Shale gas / oil resources for techno – economic feasibility report and full scale commercial development plan.
 - (f) Environmental and Social impact and related studies.
- (iii) Extension of Phase-I would be permissible similar to NELP/ CBM or any other govt. Guidelines and will be a part of the Model contract.

(iv) The block shall be deemed to be relinquished at the end of Phase-I if the operator does not enter into Phase. If Prior written communication is to be given by the contractor to this effect.

(v) The contractor will have the opinion to relinquish part / whole of the contract area during Phase-I subject to completion of Minimum Work Programme and / or other applicable provision of the contract. The contractor will be allowed to retain only the development area (s) s approved by the Steering Committee, at the end of Phase-I.

(vi) **Phase – II** will be the Development and Production Phase for duration of 25 years. Plus the time saved in Phase-II if any. This would include the following :-

- (a) Development wells drilling
- (b) Establishment of field facilities
- (c) Commercial production and marketing

(vii) A Steering Committee will be constituted under the Contract represented by the Government and the contractor which will decide upon the issued on project / major work programme. Audits and accounts with a view to exploit resources optimally. The Steering Committee will be chaired by the 1st Government Nominee. The relevant matter shall be submitted by contractor with the approval of Operating Committee to Steering Committee. The District Collector (DC) of the District where the block is situated will be a member of the Steering Committee, to facilitate the required assistance and coordination from the State Government side. Further, a member of Ministry of Environment and Forest (MOEF) and NEERI may also be included in the committee.

(viii) All the transactions under the contract shall be at Arm's Length basis.

(ix) Bank Guarantee will be submitted towards committed work programme bid by the Contractor during phase-I.

(x) Dispute Resolution would be done through arbitration in accordance with the Indian Laws, in India.

(xi) Up-front / Pre-determined Liquidated Damages (LD) will be payable by the contractor, in case of non completion of committed work programme as bid by the Contactor.

(xii) The Contractor will have option to enter the phase-II at any given time within duration the phase-I, with the approval of Steering Committee. However, the contractor will be required to complete the Minimum Work Programme (MWP) of Phase-I.

ANNEXURE – IV

BIDDING PARAMETERS.

Interested entities, which are otherwise eligible for bidding under NELP/CBM rounds, shall be required to bid for:

(i) A Minimum Work Programme (MWP) for phase-I in terms of the test wells to be drilled which should penetrate the target shale interval as defined in the Notice Inviting Offer (NIO). The Contractor will also indicate the total investment that will be made for competing the MWP of Phase-I. The weight age of this parameter in the Bid Evaluation Criterion (BEC) would be as determined by the Government from time to time. In the first round of bidding, this parameter is assigned 40% weight age.

(ii) Shale Gas / Oil – Production Linked Payments (PLP) which would be a fixed percentage of revenue receipt from the Shale gas and / or shale oil and any other mineral resource sold from the contract area, net of royalty, tax/ cess on a monthly basis. The weight age of this parameter in the Bid Evaluation Criterion (BEC) would be as determined by the Government from time to time. In the first round of bidding, this parameter is assigned 60% weight age.

(iii) The contractor's technical capability will be evaluated mainly based on the requirement that any consortium partner should have at least 3 years of operational experience in upstream conventional oil and gas / CBM/ shale gas or oil, anywhere in the world, and will be considered as one of the basis for award of contract. The operator, in case of a consortium, should have a minimum of 25% participating interest (PI).

(iv) The Net Worth of the bidders shall be the qualifying criterion for the bid.