13

STANDING COMMITTEE ON PETROLEUM & NATURAL GAS (2015-16)

SIXTEENTH LOK SABHA

MINISTRY OF PETROLEUM & NATURAL GAS

'FUNCTIONING OF DIRECTORATE GENERAL OF HYDROCARBONS (DGH)'

THIRTEENTH REPORT

LOK SABHA SECRETARIAT
NEW DELHI

May, 2016 / Vaisakha, 1938 (Saka)

CP&NG No.

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FUNCTIONING OF DIRECTORATE GENERAL OF HYDROCARBONS (DGH)

Presented to Lok Sabha on 06.05.2016

Laid in Rajya Sabha on 06.05.2016

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COMPOSITION OF THE STANDING COMMITTEE ON PETROLEUM & NATURAL GAS (2015-16)

Sl. No.	Name of Members
	LOK SABHA
	Shri Pralhad Joshi - Chairperson
2	Dr. Ravindra Babu
3	Shri P. K. Biju
4	Shri Kalikesh N. Singh Deo
5	Smt. Rama Devi
6	Shri Elumalai V.
7	Shri Naranbhai Kachhadiya
8	Dr. Thokchom Meinya
9	Smt. Pratima Mondal
10	Shri Ashok Mahadeorao Nete
11	Smt. Jayshreeben Patel
12	Smt. Anupriya Patel
13	Shri Arvind Sawant
14	Shri Raju Shetty
15	Dr. Bhola Singh (Begusarai)
16	Shri Ravneet Singh
17	Shri Kamakhya Prasad Tasa
18	Shri Rajesh Verma
19	Shri Om Prakash Yadav
20	Shri Laxmi Narayan Yadav
21	Shri A.T. Nana Patil
	RAJYA SABHA
22	Vacant[1]
23	Shri Ishwarlal Shankarlal Jain
24	Shri Prabhat Jha
25	Shri Bhubaneshwar Kalita
26	Shri Mansukh L. Mandaviya
27	Shri Ahmed Patel
28	Smt. Gundu Sudharani
29	Chaudhary Munvvar Saleem
30	Shri Sharad Yadav
31	Shri Praful Patel

SECRETARIAT

1.	Shri A.K.Singh	Additional Secretary
2.	Dr. Ram Raj Rai	Director
3.	Shri H.Ram Prakash	Additional Director
4.	Shri Mohan Arumala	Committee Officer

[1] Since Shri Mani Shankar Aiyar retired from Rajya Sabha on 21.03.2016.

INTRODUCTION

I, the Chairperson, Standing Committee on Petroleum & Natural Gas (2015-16) having been authorised by the Committee to submit the Report on their behalf, present this Thirteenth Report on 'Functioning of Directorate General of Hydrocarbons (DGH)'.

2. The Committee took evidence of the representatives of the Ministry of Petroleum & Natural Gas at their sittings held on 19.01.2015 and 18.11.2015.

3. The Committee considered and adopted the Report at their sitting held on 04.05.2016.

4. The Committee wish to express their thanks to the representatives of the Ministry of Petroleum and Natural Gas and Directorate General of Hydrocarbons for placing their views before them and furnishing the information desired in connection with examination of the subject.

5. The Committee also place on record their appreciation for the invaluable assistance rendered to them by the officials of the Lok Sabha Secretariat attached to the Committee.

New Delhi;
***04 May*, 2016**
14 Vaisakha,1938 (Saka)

PRALHAD JOSHI,
Chairperson,
Standing Committee on
Petroleum & Natural Gas.

REPORT

CHAPTER-I

Introductory

With an increasing socio-economic development in the country, there will be a growing demand for energy. India's energy security has to ensure continuous availability of energy at competitive prices to support its economic growth and meet the energy needs of its households with safe, clean and affordable forms of energy. The requirement of energy is expected to rise with development and growth in the country. The growth in industrial sector and the drastic fall in international crude oil prices have increased the demand for petroleum products. Current hydrocarbon demand is much more than the domestic crude oil and natural gas production. Given the limited domestic availability of crude oil and natural gas, the country is dependent on imports to meet 75 per cent of its domestic requirement. To bridge the gap between supply and demand, it is necessary to accelerate exploration and production activities of hydrocarbon resources in the country.

The Exploration and Production sector has been opened up with the implementation of New Exploration Licensing Policy (NELP) and Coal Bed Methane (CBM) Policy. These policies have provided a level playing field to private investors by giving same fiscal and contract terms as applicable to National Oil Companies (NOCs) for the offered exploration acreages. It was in this context, the need was felt to establish an agency that could effectively supervise the activities of all E&P companies from the private and joint venture sectors in the national interests.

Evolution of DGH and Its Functions and Responsibilities

1.2 In 1990s the need to have an appropriate agency to regulate and oversee upstream activities in petroleum exploration and production sector was felt by the Government. Subsequently, various Committees headed by experts have recommended for the creation of an autonomous conservation board and an

independent regulatory body for the sound management of hydrocarbon resources in the country. Accordingly, the Government of India set up Directorate General of Hydrocarbons (DGH) through a cabinet resolution in the year 1993 and it functions under the administrative control of the Ministry of Petroleum & Natural Gas.

1.3 While submitting the details on the evolution of DGH since inception along with the functions and responsibilities being carried out by DGH, the Ministry has furnished the following information:

> "During early nineties, the Government of India, in the Ministry of Petroleum and Natural Gas had under consideration, the need to have an appropriate agency to regulate and oversee the upstream activities in the petroleum and natural gas sector and also advise the Government in these areas. The committee headed by late Dr. A. B. Dasgupta, which had reviewed the management of the Bombay High reservoir, had recommended the creation of an autonomous conservation board to oversee and review that oilfield development programmes conform to sound reservoir engineering practices in line with national interests. Subsequently, the committee headed by late Sh. P. K. Kaul, which examined ONGC's organizational structure, also recommended the establishment of an independent regulatory body called the Directorate General of Hydrocarbons. Moreover, the upstream petroleum sector was largely a monopoly of public sector companies till then and the sector was at that time being increasingly opened up to new operating companies in the private and joint sectors. Thus a need was felt to establish an agency that could effectively supervise the activities of all these companies in the national interest. Taking all the above into consideration, Government of India, decided to set up a Directorate General of Hydrocarbons (DGH) under the administrative control of the Ministry of Petroleum and Natural Gas.DGH was set up through a Government Resolution dated 8th April, 1993.
>
> The objective of the Directorate General of Hydrocarbons was set to promote sound management of the Indian petroleum and natural gas resources having a balanced regard for the environment, safety, technological and economic aspects of the petroleum activity.
>
> The Directorate General was originally assigned the following functions and responsibilities as per the Government Resolution:-
>
> a) To provide technical advice to the Ministry of Petroleum and Natural Gas on Issues relevant to the exploration and optimal exploitation of hydrocarbons in the country and on the strategy of taking up exploration and exploitation of oil and gas reserves abroad by the national oil companies;

b) To review the exploration programmes of companies operating under Petroleum Exploration Licences granted under the Oilfields (Regulation and Development) Act, 1948 and the Petroleum and Natural Gas Rules, 1959 with a view to advising Government on the adequacy of these programmes;

c) To reassess the hydrocarbon reserves discovered and estimated by the Operating companies in discussion with them;

d) To advise the Government on the offering of acreages for exploration to Companies as well as matters relating to relinquishment of acreages by Companies;

e) To review the development plans for commercial discoveries of hydrocarbon reserves proposed by the operating companies and advise Government on the adequacy of such plans and the exploitation rates proposed and matters relating thereto;

f) To review and audit concurrently the management of petroleum reservoirs by operating companies and advise on any mid course correction required to ensure sound reservoir management practices in line with the optimal exploitation of reserves and the conservation of petroleum resources;

g) To regulate the preservation, upkeep and storage of data and samples pertaining to petroleum exploration, drilling, production of reservoirs etc. and to cause the preparation of data packages for acreages on offer to companies;

h) To advise Government on the laying down of safety norms and framing Regulations on safety in oil field operations, prescribe pollution control measures and assist in inspection and periodic safety audit.

Later on, Government assigned the safety related function to Oil Industry Safety Directorate (OISD).

(i) All other matters incidental thereto and such other functions as may be assigned by Government from time to time.

Government assigned some additional functions also to DGH, like issuance of Essentiality Certificates, implementation of NELP and CBM policies, Contract Management and Monitoring of PELs and MLs under nomination regime.

DGH was subsequently designated to exercise the following powers and functions of Central Government through Gazette Notification dated 1st September 2006:

(i) Review and monitor the exploration programme and development plans for commercial discoveries of hydrocarbons reserves proposed by licensee or lessee with a view to optimizing hydrocarbon recovery from a reservoir in accordance with generally accepted international petroleum industry practices;

(ii) Review the management of petroleum reservoirs by licensee or lessee and advise them on any action which may ensure proper management of the petroleum reservoirs including their conservation in accordance with generally accepted international petroleum industry practices;

(iii) To ask for and maintain in a readily retrievable form all geo-scientific data, reports and information from licensee or lessee and store and preserve data and samples pertaining to petroleum exploration, drilling, production and connected operations;

(iv) Review the reserves discovered by the licensee or lessee in accordance with generally accepted international petroleum industry practices;

(v) To lay down norms for declaration or announcement of discoveries by licensee or lessee;

(vi) To exercise the power of the Central Government as given in Rules 24,25,26,27 and 30 of the Petroleum and Natural Gas Rules, 1959;

(vii) To monitor oil and gas production and royalty or any other charges or fees or levies, and where applicable, cost petroleum, etc, due to the Central Government in receiving accurate royalty and other statutory charges by the due date.

Provided that in case where the Central Government has signed a Production Sharing Contract or a contract or an agreement for exploration and production of hydrocarbons, the powers and functions shall be discharged by Directorate General of Hydrocarbons in accordance and consistent with the respective Production Sharing Contract or contract or agreement".

1.4 When the Committee specifically enquired as to how does DGH carry out the functions of sound management of hydrocarbon resources in the country, the Ministry submitted the following facts in its written reply:

"DGH has dedicated internal technical departments to deal with the contractual, geo- technical, environmental and economic aspects of the exploration and production activities of the country. The review/vetting/approval and monitoring of all such aspects is being carried out in pursuance with the PSC provisions and/or concerned extant guidelines/directives. The concerned stakeholders are also involved for clarification in case of requirement. Also, If required the independent consultants are being hired to review and provide expert advice on a given technical issue.

The various technical sections at DGH are as under:

i. Production Sharing Contract (Contractual Matters within the purview of PSCs in exploration phase)
ii. Producing Fields (Contractual Matters within the purview of PSCs in development & production phase)
iii. National Oil Company Monitoring (NOC) (Matters concerning with review of exploratory and development operations of NOCs within nomination regime)
iv. Geology & Geophysics including Petrophysics (All technical matters related to geological and geophysical aspects)
v. Reservoir (All technical matters related to reservoir, production profile etc.)
vi. Production (All technical matters related to production)
vii. Geophysical Data Acquisition (Matters concerning with geophysical data acquisition)
viii. Field Development Plan (FDP) (Matters concerning with field development plan and declaration of commerciality (DOC) in blocks and fields)
ix. New Exploration Licensing Policy (NELP) (Identification, preparation of data packages for prospective areas to be offered for exploration and development)
x. Alternate Energy (Matters concerning with National Gas Hydrate Program & Shale Gas)
xi. Coal Bed Methane (CBM) (Matters concerning with CBM)
xii. Drilling & Safety (Matters concerning with drilling operations and safety)
xiii. Environment (Matters concerning with environmental issues)
xiv. National Data Repository (NDR) (Matters concerning with the set up and implementation of NDR)
xv. Materials Management (Matters concerning with material management)
xvi. Human Resources (HR) & Administration (Admn.) (Matters concerning with HR & Admn.)
xvii. Essentiality Certificate (EC) (Matters concerning with review and grant of EC)
xviii. Legal (Matters concerning with legal issues)
xix. Information Technology (IT) (Matters concerning with IT)
xx. Contract Finance (Matters concerning with the financial aspects of the contracts)

Primary responsibility for seeking the environment clearances lies with the operators. The operator has to apply to MOEF for seeking relevant clearances, as per article 14 of PSC. The DGH plays the role of facilitator, in case the operator brings to the notice of DGH the hurdles being faced in obtaining these clearances".

1.5 In regard to any differences existing in the E&P technology being used in continental shelf and other areas depending upon the subsoil structures, the Ministry has submitted the following details:

"Continental shelf is a broad, relatively shallow submarine terrace of continental crust forming the edge of a continental landmass. It typically extends from the coast to depths of 100–200 metres (330–660 feet). It is gently inclined

seaward at an average slope of about 0.1°. The average width of continental shelves is about 65 km (40 miles). Almost everywhere the shelves represent simply a continuation of the continental landmass beneath the ocean margins. Accordingly, they are narrow, rough, and steep off mountainous coasts but broad and comparatively level offshore from plains. Continental shelves are usually covered with a layer of sand, silts, and silty muds. Their surfaces exhibit some relief, featuring small hills and ridges that alternate with shallow depressions and valley like troughs.

The major E&P Technologies used in Oil and Gas operations are related to seismic data acquisition/processing/interpretation, well drilling, completion, testing and facilities related to production of oil and gas. The subsoil structures of oil and gas are at varied depth and spatially distributed. In on-land areas, these structures are below the ground and in offshore areas, below sea bottom overlain by water (at varied water depths). Therefore, due to varying terrain and logistic conditions thereof, the available technologies in continental shelf areas including deepwater and other on-land areas are different.

The E&P technology used in continental shelf and deep offshore areas are different in the sense of equipments used over and under the water such as seismic vessels with steamers, ocean bottom cables(OBC) surveys for seismic acquisition, offshore Jack-up and floater rigs for drilling of wells, completion of sub-sea wells and processing facilities/platforms for production of oil and gas.

However, on the other hand, in on-land areas the surface related E & P technologies for acquiring seismic data by laying seismic cables on the ground, deploying on-land drilling rigs of varying capacities for drilling and completion of wells and installation of production facilities in on-land part and laying of transportation pipelines for oil & gas are used for exploration and Production activities.

The use of E&P technology in continental shelf and other onland areas also varies in terms of cost and availability of the suitable technologies specific to the particular areas".

1.6 When asked as to whether DGH has been modelled on any organisation of any other country, the Ministry has submitted as under:

"DGH was established after studying and suitably modifying the structure, functions and responsibilities of various regulatory authorities around the globe with special focus on Norwegian Petroleum Directorate (NPD) of Norway".

1.7 When asked to clarify the role of DGH as a regulator, the representative of the Ministry during the oral evidence held on 18.11.2015, stated as under:

"Actually, we call it a regulator but frankly speaking this is not a regulator. Even the Cabinet Note on the basis of which the DGH was set up says that it is basically a technical arm of the Ministry. It is an attached office of the Ministry. Even it functions do not talk of regulation because an appeal over a regulator lies in some court and there is no such thing here."

1.8 Clarifying further on the issue during the oral evidence, the representative of the Ministry also stated as under:

"For certain functions (downstream sector), PNGRB is a regulator. For other functions (upstream sector), there is no regulator".

1.9 When asked as to whether DGH could appropriately be called as an independent upstream regulator when funding and manpower requirements are being met from other organizations and would it not be appropriate to restructure DGH into a Multi-Member Board to make it more efficient for proper discharge of its mandate, the Ministry submitted the following information:

"DGH functions under the Administrative Control of Ministry of Petroleum & Natural Gas and carries out regulatory and contract management functions on behalf of Ministry of Petroleum & Natural Gas.

It is commonly understood that, a Regulator is deemed to be independent if appeals against its decision lie to a body independent of the Govt. e.g. CCI, PNGRB, CERC etc. In that sense DGH is not independent. The upstream regulators in all countries function under the control of the respective Governments. The role of a regulator gains importance in situations where there is no level playing field. The NELP and CBM policies have already ensured a level playing field for all including the Private and Public Sector.

DGH has been delegated with administrative and financial powers for its operations as per stipulations of the Ministry of Finance and Ministry of Petroleum & Natural Gas from time to time. Vide notification of 1st September, 2006 DGH has been delegated the powers and functions to monitor the upstream petroleum operations in India in accordance with the Oil Fields (Regulations and Development) Act, 1948 and the Petroleum and Natural Gas Rules, 1959. DGH is part of the Management Committee and performs review, advisory and approval functions on important matters such as annual work programmes and budgets and performance thereof; proposals for surrender or relinquishment of parts of the contract area, proposals for development plan; determination of development area, audit of blocks, claims for or on behalf of or against the contractor in excess of limits fixed. Further, delegation of powers as necessary for effective functioning of DGH is under consideration. In view of the

submission made above, it is not felt necessary to restructure DGH in a Multi Member Board".

1.10 When asked as to what kind of powers are under contemplation for delegation to DGH, the Ministry submitted the following information:

"Government has empowered DGH to decide upon many issues on the basis of recommendations of the Management Committee related to the operationalization of Production Sharing Contract. Govt. has recently issued guidelines for relaxation of timelines for submission of FDP, DoC and exemption of work program including reduction of area where approvals are not given by Govt. agencies for more than two years. Govt. has increased the limit for approving legal expenditure for arbitration cases abroad under production sharing contracts from 50.00 lakhs to Rs. 10.00 crores. Further, DGH has been advised to review all delegated powers to it and suggest where there is necessity for any further delegation".

1.11 When the Committee wanted to know whether the Ministry is satisfied with the performance of DGH so far, the Secretary of Ministry of P&NG during the oral evidence held on 19.01.2015 submitted the following facts before the Committee:

"Sir, on the general question on the assessment of the performance of the Director General, Hydrocarbons, both DG(H), myself and my colleagues agree that the performance could and should have been much better. There is no doubt about it.

The DG(H) gets the exploration done through companies. We have to look at why the companies have not performed the way they should have. Our primary company for exploration and which still produces most of the oil and gas is ONGC. My assessment is, there could be differences of opinion, somewhere they lost their focus on exploration in the last few years".

1.12 On the above issue, the Secretary, MoP&NG further clarified as under:

"Sir, they went into diversification. They went into petro chemicals; they went into refineries. If the same money was put into exploration would have made a lot of difference. Look at the number of exploratory wells which the US does and the number of exploratory wells we do. These are basics. On 2D and 3D survey, even today, about slightly less than 60 per cent of the sedimentary basins are not covered by any kind of survey. We are putting into place a plan to survey everything. At least, we should know what it is. But I am happy to say that ONGC in the last few months has sanctioned major projects and they are expected to increase their gas production by 80 per cent in the next four years. These are

long term things. What is not being done in the last 8 to 10 years, the impact is being felt now. On what they are doing now, the impact will be felt four years down the line".

1.13 On being asked about the observations/recommendations made by the Kelkar Committee set up by the Ministry of P&NG on DGH has submitted following details:

"The observations / recommendations made by Kelkar Committee in their report on DGH are quoted as under:

DGH to become an independent regulator for the upstream oil and gas sector

At present, the multiple roles of government as policy maker, regulator and operator lead to conflicts of interest and dampen investor confidence in the sector. This creates the need for an independent and transparent regulatory mechanism. Hence, the DGH should be transitioned from its current role of being an advisor to being an independent regulator for the upstream oil and gas sector.

Empowerment of regulator, along the lines of SEBI

The asset base of the securities market in India, at approximately USD 1.5 trillion, is equivalent to the market value of established hydrocarbon reserves in India. The comparable asset base emphasizes the need for a robust and transparent regulatory framework for the upstream oil and gas sector, similar to that of the securities market under the purview of Securities Exchange Board of India (SEBI). The DGH should be given, as is the case of SEBI, quasi judicial powers accompanied by an Appellate Tribunal for fast and effective dispute resolution. The status of the head of the DGH should be at par with that of other empowered regulator heads in the country, such as SEBI, TRAI etc.

Capability building for the effective function of the DGH

To ensure that the DGH can operate effectively, it should be empowered with an independent financing and staffing mechanism. The funds required for day to day operations must be made available automatically, on a formulaic basis, through the OID (Oil Industry Development) cess. The DGH should be established as a multi-member, multidisciplinary body with professional teams that have expertise in different domains such as legal, environmental, financial and technical. The DGH should further have the flexibility in its charter to access global experts, and maintain a permanent cadre at competitive remuneration rates. The DGH should also be developed as a knowledge centre or knowledge hub that acts as a central repository for best practices, geo-scientific data on Indian basins (through creation and maintenance of NDR), state-of-the-art technologies available locally

or globally etc. The head of the DGH must have a fixed tenure of five years and retirement age as per the norms of other similar regulators".

1.14 When the Committee specifically asked about the implementation status of the recommendations of Kelkar, the Ministry submitted as under:

"The report of the Kelkar Committer is under examination in the Ministry. However, some of the recommendations of the committee were already under consideration & execution even before the final report was submitted.

The two major recommendations of Kelkar Committee which have been accepted by the Govt. are setting up of National Data Repository (NDR) and Appraisal of Un-appraised area of Indian Sedimentary Basins. The National Data Repository has been commissioned in the office of DGH and data loading is in progress. Further, the job work for appraisal of sedimentary area has been assigned to NOCs. Remaining recommendations are under consideration of Govt".

1.15 In the same context, when the Committee specifically wanted to know about steps that have been taken to develop the DGH as robust, transparent and independent regulator for upstream oil and gas sector as recommended by the Kelkar Committee, the Ministry submitted as under:

"By constituting a in house committee, a study was done by DGH on various upstream regulatory bodies existing worldwide. A report was prepared in December 2014 and submitted to MOP&NG for consideration. Based on the report, MOP&NG felt it necessary to deliberate the issue with an expert consulting organization for more details. Accordingly, DGH has been advised to appoint an expert consultant in the field to provide a report on restructuring of DGH to meet the regulatory environment in the current context by studying the current structure and mandate of DGH vis-à-vis similar set up in other oil producing countries. DGH is in the process of hiring a consultant for this job".

1.16 When enquired about non-regulatory functions performed by DGH, the Ministry has submitted as under:

"Some of the major non–regulatory functions being performed by DGH are:

1. To provide technical advice to the Ministry of Petroleum and Natural Gas on issues relevant to the exploration and optimal exploitation of hydrocarbons in the country.

2. To advise the Government on the offering of acreages for exploration to Companies as well as matters relating to relinquishment of acreages by Companies.
3. Issuance of Essentiality Certificates
4. Implementation of NELP and CBM policies by way of conducting the bidding rounds.
5. Generation of additional geo-scientific data base in poorly explored sedimentary areas of the country through speculative and other modes of surveys or information drilling.
6. To ask for and maintain in a readily retrievable form all geo-scientific data, reports and information from licensee or lessee and store and preserve data and samples pertaining to petroleum exploration, drilling, production and connected operations.
7. Various geo-scientific studies pertaining to Indian basins on conventional and unconventional Oil and Gas.

1.17 While analysing the functions of DGH, what the Committee wanted to know about the composition of the Advisory Council constituted to give advice to DGH on various activities under its domain and specific powers and responsibilities, the Ministry submitted the following information:

> "The composition of the last Advisory Council is as under:
>
> 1. Shri P. Shankar, IAS (Retired), Chairman
> 2. Shri E. Desa, Member, (Ex Director, National Oceanographic Institute, Goa)
> 3. Shri I.B. Singh, Member, (Professor of Geology, Lucknow University)
> 4. Shri B.B. Bhattacharya, Member, (Professor, Indian National Academy of Engineering (INAE)
> 5. DG, DGH – Member Secretary
>
> The role of Council is advisory in nature. The order constituting the Advisory Council is not specific about its power and responsibilities. The matter of reconstitution of Advisory Council is under consideration of the Government".

1.18 When asked about the position of power and responsibilities of Advisory Council and whether it is simply a recommendatory authority or has got some specific say in certain matters, the Ministry clarified as under:

> "Advisory Council has no specific responsibilities. It comprises of eminent scientist/ administrators in the field of oil & gas and performs advisory role mainly

on technical issues. Advisory Council is a recommendatory authority and technical proposals are presented to the members of Advisory Council for their advice".

1.19 Further, in regard to certain changes that have been envisaged in Advisory Council of DGH, the Ministry has submitted as under:

"DGH has proposed reconstitution of Advisory Council in view of increasing focus on alternate energy such as Shale Gas and Gas Hydrate. The proposal is under consideration of Govt. for induction of new members".

1.20 Asked by the Committee regarding the procedure of appointment of Members to the Advisory Council, the representatives of the Ministry during the oral evidence on 18.11.2015 submitted the following:

"The Advisory Council is appointed by the Government. Basically, it comprises very eminent and expert people in the upstream sector. So, currently, the Advisory Council is chaired by a former Secretary (Petroleum). There are three members who are representing the academics, research and the actual expertise in the upstream sector".

1.21 Further clarifying about the recommendations of the advisory council are binding, the representatives of the Ministry submitted as under during the oral evidence:

"Although it is written as Advisory Council, yet, so far, around 22 meetings happened. All the suggestions which have been given by the Advisory Council have been accepted as they are by the DGH. In fact, whenever we go ahead with all major projects, for the speculative seismic survey, first we present it to the Advisory Council. Once the Advisory Council got the concept approved, then only we bring it to the Administrative Council for approval. For all the big projects, some state-of-the-art projects, new jobs or some activities, we first approach the Advisory Council, we take their approval. Although it is advisory in nature, yet whatever recommendations they have submitted to us, that is a kind of binding on us".

Activities and Achievements of DGH

1.22 When the Committee wanted to know about major activities/achievements undertaken by DGH, the Ministry furnished the following details:

"Major Accomplishments of DGH are as under:

i. **Monitoring of Production Sharing Contracts:** DGH monitors the execution and management of the Production Sharing Contracts on behalf of GOI through Management Committees set up for each block/field. This involves in-depth review of annual work programmes, project monitoring, calculation of reserves and production profile, making simulation model of the field, review and approval of development plan, budget and safety management system.

Presently there are total 131 active PSCs which includes 12 Pre-NELP PSCs, 92 NELP PSCs and 27 Production Sharing Contracts executed with Private companies/JV under Producing Fields regime.

ii. **Field Development, Reservoir and Production Monitoring:** DGH reviews the reserves of new discoveries through internal scientific studies so that accurate reserves are estimated. So far 213 hydrocarbon discoveries have been made in PSC regime. These discoveries are under various phases of appraisal and development. The details are as under:

Total Oil and Gas discoveries in PSC regime (Pre-NELP & NELP)	213
(a) Oil Discoveries in PSC regime	107
(b) Gas Discoveries in PSC regime	106
Discoveries on Production	31
Discoveries under development	22
Discoveries for which commerciality established (DoC reviewed)	50
Discoveries for which commerciality proposal(DoC) submitted	26
Discoveries in early stage, DoC to be submitted	21
Discoveries to be monetized falling in ML areas	29
Discoveries not perused/relinquished	34

iii. **Award of acreages for exploration activities in NELP:** New Exploration Licensing Policy (NELP) was formulated by the Government of India, with Directorate General of Hydrocarbons (DGH) as a nodal agency, during 1997-98 to provide a level playing field to both Public and Private sector companies in exploration and production of hydrocarbons.

Under NELP, which became operational in February 1999, acreages are offered to the participating companies through the process of open global competitive bidding. The first round of offer of blocks was in the year 1999 and the latest ninth round in 2010. In nine bidding round, 360 exploration blocks have been offered and 254 blocks have been awarded till 31.03.2013. Oil and Oil-Equivalent Gas (O+OEG) in place reserve accretion under NELP is approximately 745 MMT.

iv. **Coal Bed Methane (CBM)** - CBM blocks were carved out by DGH in close interaction with Ministry of Coal (MOC) & Central Mine Planning and Design Institute (CMPDI). Till date, four rounds of CBM bidding have been

implemented by MOP&NG under the CBM policy resulting in award of 33 CBM blocks (including 3 blocks on Nomination/FIPB route) which covers 16,613 Sq.km out of the total available coal bearing areas for CBM exploration of 26,000 sq.km. Total prognosticated CBM resource for awarded 33 CBM blocks, is about 62.4 TCF (1767 BCM), of which, so far, 9.9 TCF (280.34 BCM) has been established as Gas in Place (GIP). CBM production has started since July 2007 and current production is around 0.6 MMSCMD from 3 CBM blocks. Seven more CBM blocks are expected to start commercial production in near future. The total CBM production is expected to be around 4MMSCMD by end of 12th plan as per XII plan document.

v. **National Gas Hydrate Programme (NGHP)** - Steered by the Ministry of Petroleum and Natural Gas, DGH is technically coordinating National Gas Hydrate Program (NGHP) which is a consortium of National E&P companies, namely ONGC, GAIL, OIL, IOC and national research institutions NIO, NIOT and NGRI. During the period 1998 to 2003, data of Krishna Godavari Basin (offshore), Cauvery Basin (offshore), Gulf of Mannar and Western offshore were studied for assessing Gas Hydrate prospectivity. These studies provided technical support in formulating NGHP Expedition-01 program, wherein 21 sites (39 holes) were drilled / cored in Indian offshore in 2006 using the ship Joides Resolution.

The NGHP technical committee is planning to locate an ideal gas hydrate bearing sand in the channel levee system by drilling several of the identified locations in the areas KG & Mahanadi deepwater areas during NGHP Expedition-02. This would be followed up by taking pilot production testing under NGHP- 03. The steering committee has approved for the NGHP-02 expedition for coring/drilling/LWD/MWD/WL of 40 wells at 20 sites in Indian Offshore. In addition, a regional gas hydrate prospect map was generated for KG and Mahanadi basin by integrating the bathymetry derived from 3D seismic data along-with seismic attributes near the sea floor, BSR zones with identified prospective sites.

vi. **Review & Monitoring of Petroleum Exploration Licences (PELs)-** DGH reviews the Petroleum Exploration Licences (PELs) held by National Oil Companies on nomination basis. DGH also monitors the progress and work programme in these PELs and also the Petroleum & Mining Lease (PML) areas. Petroleum Exploration Licenses (PEL) were awarded to NOCs viz. ONGC and OIL prior to the announcement of NELP.

At present, ONGC holds 12 PEL acreages covering an area of 42,825.50 Sq. kms. on nomination basis. OIL holds 5 PEL acreages under nomination covering an area of about 1238.75 Sq. kms.

vii. **Shale Oil and Gas-** A systematic approach has been initiated by DGH under MOPNG since 2010 to identify, characterize and prioritize the Indian sedimentary basins for focused Shale Oil /Gas exploitation and also to assess and establish the potential of fields.

A Multi Organizational Team (MOT) of DGH, ONGC, OIL, GAIL has been formed by MOPNG to analyze the existing data set and suggest methodology for Shale Oil & Gas development in India. Technical studies have been conducted by ONGC and Central Mine Planning and Design Institute (CMPDI), Ranchi to identify prospective areas in several Basins / Sub Basins.

Govt. of India has announced "Policy Guidelines for Exploration and Exploitation of Shale Oil and Gas by National Oil Companies under Nomination regime" in October 2013.

viii. **Oil Shale-** Oil Shale prospectivity has been mapped in selected Assam-Arakan Basin areas where Oil resources are estimated to be around 400 MMT of oil upto a depth of 500m in selected areas in Assam-Arakan Basin

A MoU has been signed between IOCL, R&D centre, Faridabad and DGH related to feasibility studies for Oil Shale as nonconventional fossil fuel, characterization, recovery of oil and its characterization, economic aspect of oil shale processing. Oil Shale samples have been provided to IOCL, R&D centre by DGH

ix. **Geo-scientific Data Generation-** In order to acquire geophysical data in poorly explored and unexplored areas, the Government has formulated a new policy for Geo-scientific data generation in Indian sedimentary Basins. GoI on 2014 has approved the Data Policy and agreement to carry out Non-exclusive Multi-Client Geo-scientific surveys/activities relating to hydrocarbons in Offshore and/or On-land part of India. The offer to undertake such studies through non-exclusive Multi-client Business Model is open throughout the year. The data acquired through these surveys are to be studied by DGH scientists & engineers and based on the interpretations, data dockets and data packages will be prepared. These data can be purchased and referred to by E&P companies for studying the prospectivity of various blocks. So far seven proposal have been received which will be acquiring more than one lakh LKM of 2D seismic data in offshore areas.

DGH has carried out different geophysical surveys till date with either Government funding or Joint Speculative Surveys or Non-exclusive Multi-Client Speculative Surveys in different sedimentary basins of India in both onshore and offshore India. To cover the 48% of un-appraised area of the sedimentary basins of India under 2D survey, DGH is executing a project through ONGC and OIL which will be completed in the next 5 years.

x. **Monitoring of Production and reserves accretion-**DGH reviews the reserves of new discoveries through internal scientific studies so that accurate reserves are estimated. So far 213 hydrocarbon discoveries have been made in PSC regime. These discoveries are under various phases of appraisal and development. The details are as under:

The break-up of hydrocarbon reserves explored under PSC regime as on 01.04.2014 are as under:

	Initial In-Place (MMT)			**Ultimate Reserve (MMT)**			**Balance Recoverable Reserves (MMT)**		
Companies	Oil (MMT)	Gas (BCM)	O+OEG (MMT)	Oil (MMT)	Gas (BCM)	O+OEG (MMT)	Oil (MMT)	Gas (BCM)	O+OEG (MMT)
Pvt/JV	972	1318	2290	214	715	929	109	554	663

O+OEG- Oil and Oil Equivalent of Gas

Reserves Replacement Ratio (RRR) & Reserves to Production (R/P) Ratios as on 01.04.2014

	Category	R/P (Years)	RRR
India	Oil	18	0.85
	Gas	40	1.91
Pvt./JV Cos. under PSC Regime	Oil	9	1.44
	Gas	58	3.74

Crude oil Production in the Country (Figures in Thousand Metric Tonnes)

State/Source	**2008-09**	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Share of PSUs	28834	28427	28003	27559	26222	25712
Share of Private/JV	4674	5263	9682	10527	11640	12076
% Share of PSUs	86.05%	84.38%	74.31%	72.36%	69.26%	68.04%
%Share of	13.95%	15.62%	25.69%	27.64%	30.74%	31.96%

Gas Production in the Country (Figures in MMSCMD)

State/Source	**2008-09**	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Share of PSUs	67.9	69.9	69.7	71.1	71.8	71
Share of Private/JV	22.1	60.2	73.4	59.2	39.7	26
% Share of PSUs	75.44%	53.69%	48.71%	54.57%	64.45%	73.20%
%Share of Private/JV	24.56%	46.24%	51.29%	45.43%	35.64%	26.80%

1.23 The Committee expressed their concern over the stagnant domestic crude oil production and asked about the reasons for the decline of crude oil production since 2008-09. The Ministry furnished the following details:

> "All the oil and gas fields of ONGC and OIL have been discovered in their nomination regimes during late 70s and early 80s in Mumbai Offshore, Gujarat, Assam, Tamilnadu and Rajasthan. These fields have been on production since last three decades and have crossed their peak production level. Now, NOCs have started IOR/EOR in these ageing fields to maintain the production level. Whereas, the private/JV companies started their exploration in late 90s and put their finds on production only in last 15 years. Most of the fields have reached their peak production level in last 5 years.
>
> ONGC is developing their discoveries made in NELP-I bid round which is expected to be put on production in next 3 to 4 years. Oil and gas production is therefore likely to increase after the discoveries made in NELP are put on production".

1.24 On being asked to define Ultimate Reserves (MMT) & Balance Recoverable Reserves (MMT), the Ministry submitted as under:

> "Ultimate Reserves is that part of the established hydrocarbon initially in place, in terms of weight (Million Metric Ton MMT) or in terms of volume (Barrels BBL) in a reservoir, which is anticipated to be commercially recoverable with suitable exploitation strategy based on the operating drive mechanism within a pre-determined period.
>
> If the reservoir has been partially exploited at any point of time by producing some volume of it, then deducting this volume from the ultimate reserves is the recoverable reserves which are expressed either in weight (MMT) or volume (BBL) terms".

1.25 When asked to furnish the details of oil and gas discoveries made by various national oil companies and private companies in the country during the last 5 years and also about the number of such discoveries that have been verified/confirmed by DGH, the Ministry submitted the following details:

> "The details of oil and gas discoveries made by various National Oil Companies and Private companies in the country during the last 5 years are as under:

i. Under PSC Regime, during the last 5 years (2010-11 to 2014-15), 71 discoveries have been notified by National Oil Companies & Private Companies under PSC regime, as on 01.03.2015 and are given below:

S.NO.	Name of Operator	No. of Discoveries
1	ONGC	33
2	OIL	2
3	GSPC	6
4	CAIRN	13
5	RIL	10
6	FOCUS	2
7	JOGPL	2
8	NAFTOGAS	1
9	INTERLINK PETROLEUM	1
10	JAY POLYCHEM (INDIA) PVT. LTD.	1
TOTAL		**71**

The discoveries have been notified as per relevant article on “Discoveries, Development & Production and Natural Gas” of PSC. The discoveries are notified, appraised and developed as per provisions in the PSC.

ii. Under nomination regime, during the last 5 years (FY 2010-11 to 2014-15), 69 discoveries by ONGC and 30 Discoveries by Oil India Ltd. have been made which are as under:

Sl. No.	Year	No. of Discoveries by ONGC			No. of Discoveries by OIL		
		PEL	PML	Total	PEL	PML	Total
1	2010-11	13	7	20	0	6	6
2	2011-12	7	7	14	0	7	7
3	2012-13	7	5	12	1	5	6
4	2013-14	0	10	10	1	3	4
5	2014-15	3	10	13	0	7	7
	Total			69			30

All above mentioned discoveries have been validated by DGH".

1.26 When asked to furnish about the current norms for declaration of announcement of discoveries and commerciality thereof by licensees or lessee, the Ministry elaborated as under:

"a) As per PSC article on “Discovery, Development and Production” if and when a discovery is made; the Operator has to inform the Management Committee and Government. Thereafter, Contractor runs tests to determine whether the discovery is of Potential Commercial Interest and merits appraisal. Subsequent to appraisal of the Discovery, Contractor and submit a Declaration of Commerciality (DOC) to Management Committee (MC) for review. Thereafter,

Field Development Plan (FDP) is submitted to Management Committee (MC) for approval. There are timelines, stipulated in the PSC, which are adhered to for submission and examination & MC approval of all the documents.

b) In the May 2006, Government of India announced guidelines for announcement of Discoveries under PSC regime. The policy was announced for laying out a uniform system for announcing a new Discovery to the public. The Guidelines are to be followed by all E&P companies working in India under production sharing regime. As per the guidelines, specified parameters under different formats can be announced to public at different stages of development. These formats are as given below:

i) Format- A: to be submitted by the contractor to Management Committee when a new Discovery has been made in the block and where the PCI of the Discovery is yet to be established.

ii) Format- B: to be submitted by the contractor to Management Committee after detailed testing of Discovery and if Discovery is found to be of Potential Commercial Interest (PCI) and merits appraisal.

iii) Format-C: to be submitted by the contractor to Management Committee/Government after the appraisal is complete and Discovery is declared as commercial and needs development for exploration of Oil and Gas.

IV) Format-D: to be submitted by the contractor to Management Committee/Government after Development plan is approved by Government/the Management Committee"

1.27 Further, on being asked about the kind of tests/appraisals made by DGH to independently assess the reserves estimated by operators in oil and gas fields, the Ministry submitted the following information:

"After the notification of Discovery as per PSC, tests are conducted to ascertain whether the Discovery is of Potential Commercial Interest (PCI). After establishing that Discovery is of Potential of Commercial Interest, Appraisal of the Discovery is carried through the implementation of the appraisal programme. Thereafter, the Operator submits Declaration of Commerciality (DOC) and finally Field Development Programme (FDP) is submitted.

i. In-place volumes and recoverable reserves are established by the Operator during submission of Declaration of Commerciality (DOC) and Field Development Programme (FDP) as per the development strategy. These volumes are established by the Operator based on the industry practices and is based on Geological- Geophysical, Reservoir and Petrophysical studies carried out for the Discoveries and is generally as per Petroleum Resource Management System- PRMS (SPE,AAPG,WPC) Guidelines. The in-place volumes and reserves established by the Operator are evaluated at DGH based on in-house G&G, Reservoir and Petro-physical studies.

ii. In May 2006, Government of India announced Guidelines for "Uniform System of Classification of Hydrocarbons Resources/Reserves. The Guidelines were issued for all the E&P companies working in India which were in line with SPE/AAPG/WPC system which was subsequently upgraded to PRMS.

iii. The Operator submits statement of Reserves annually to DGH in the prescribed format. The statement is submitted as on 31st March of every Financial Year. The same is examined at DGH and put up to the Management Committee for its consideration.

iv. As per Guidelines issued by Government in May 2006, the Contractor has to audit the reserves by third party every 3/5 years depending upon the volume of the reserves.

In addition to above, once the reserves are submitted at DGH, it is reviewed as following:

- Volumetric Method: Net Reservoir Volume is calculated from the net pay maps received from the operator (Area x Net Pay), which when multiplied with average porosity and average hydrocarbon saturation (Depending upon values obtained at the well in the reservoir section) and dividing by formation volume factor of the given reservoir, gives the Inplace estimate. The equation is provided below:

  Hydrocarbon In place = (Volume*avg. porosity*avg. hydrocarbon saturation) / Formation volume factor

- Stochastic Method: Software working on principal of Monte Carlo is used for derivation of the in-place volumes. A range of values (min and max) for net pay, porosity, saturation is provided in the software along with the reservoir area. The software uses these values for multiple iterations and finally gives three figures-Minimum, Mean and Maximum. Out of these Mean Value is generally considered.

- Geocellular model: Interpreted reservoir top and bottom are used for grid preparation (container). Interpreted faults are modelled into the grid. The grid so generated is used for property modelling which includes facies modelling, Net to Gross modelling, porosity and saturation modelling. The facies, porosity and saturation values obtained at well point are extrapolated throughout the grid using secondary variable like seismic inversion or any other attribute which has good correlation with the well data. The properties so derived are finally used for estimation of in place with the inbuilt algorithm provided in the software".

1.28 On being enquired about the steps involved in the exploration development & production of prospective fields and the role and duties of DGH in each of the stages, the Ministry submitted the following information:

"The following steps are involved in the exploration, development and production of the prospective field along with role and function of DGH at each stage:

a) Subsequent to award of the block, the contractor carries out the 2D & 3D seismic surveys as per minimum work programme and additional 2D & 3D surveys if required to identify prospective location to drill exploratory wells as per Minimum Work Programme (MWP). If the drilling of exploratory wells proved to be Oil or Gas bearing well then it is called a Discovery. The contractor notifies the discovery to DGH & Management Committee as per provisions of PSC.

Role of DGH- The exploratory locations so identified by contractor are reviewed at DGH from G&G point of view. DGH also send its representative to witness the testing in the discovery well.

b) Based on testing in the well along with other G&G, Petro-physical, Reservoir, Production & Drilling data, contractor submit an appraisal programme to know the lateral extent of the discovery and to know the characteristics of the discovery.

Role of DGH- The appraisal programme as submitted by contractor is reviewed technically by DGH and Management Committee.

c) Based on the results of implementation of appraisal programme, the contractor submits a report to DGH/MC to declare the discovery a "Commercial Discovery".

Role of DGH- The Declaration of Commerciality (DoC) proposal as submitted by contractor is examined at DGH. The parameters like Oil & Gas in Place (OIIP/GIIP), Recoverable Reserves, Development Wells, Production profile, Development strategy, Techno-economics analysis are reviewed at DGH and then it is deliberated by Management Committee to declare the discovery as Commercial Discovery.

d) After the "Declaration of Commerciality (DoC)" of discovery, the contractors submit a detailed plan of development generally called a Field Development Plan (FDP) to Management Committee for approval.

Role of DGH-The FDP so submitted by contractor is examined at DGH. The FDP contains details on Oil & Gas in Place (OIIP/GIIP), Recoverable Reserves, Expected Production Profile, Wells required for development, Facilities & pipeline required for development, Development strategy, Estimates of Capex /Opex and Techno-economic analysis. The report is examined at DGH and then it is deliberated by Management Committee for approval of FDP.

e) Subsequent to approval of FDP by Management Committee, the work programme as approved by Management Committee is implemented by the contractor to commence production of Oil & Gas from the field.

Role of DGH- Work Programme and Budget for development as approved in the FDP is approved by the MC annually after its examination at DGH.

f) After the field is put on production, its production performance and reservoir health is continuously monitored at DGH. Any midterm correction like revival of sick wells, additional development proposal is submitted by the contractor to Management Committee for approval to improve & optimise the Oil & Gas production from the field.

A flow chart depicting the phases in the lifecycle of fields with discoveries, non associated Gas reservoir and Oil and associated Gas reservoir respectively are attached at **Annexure- 2".**

1.29 When the Committee enquired as to whether DGH has the necessary infrastructure and management information system to monitor and supervise exploration and production programmes in the country, the Ministry provided the following details:

"Infrastructure- In terms of infrastructure, DGH has adequate number workstations, desktops, laptops and printers available in superior working conditions to carry out work as per various requirements. Proper internet and telephone connectivity is also in-place to ensure adequate communicability of DGH with other national or international stakeholders.

Management Information System- DGH is well equipped with IT enabled services to assist in monitoring and supervising the exploration and production programme in the country. Such systems, which are being used geotechnical studies and data management are as under:

i. **In-House PSC Data Management Application**- An in-house developed database application is used to monitor and supervise important PSC data management activities of DGH in order to prepare a single integrated quality controlled database of major PSC data that can be used as a single point reference by all nodal officers and co-ordinators of DGH.

ii. **G&G Application Systems**- DGH is having integrated working environment of geologist, geophysicist, reservoir engineer and drilling engineer with state of art technology to take care of seismic interpretation, 3D reservoir modeling, petro physical interpretation, simulation and well designing. The systems works with geo scientific software Geo frame, Petrel, Interactive petro physics, Eclipse etc. The G&G software are used by DGH G&G Centre for all technical review related to NELP, FDP, Reservoir monitoring, review of locations and Gas Hydrates.

iii. **Virtual Reality Center-** The cutting edge 3D Visualization technology was introduced to PSC with the commissioning of the Virtual reality Center. With this technology, geoscientists can analyse and interpret seismic data, well logs and reservoir properties simultaneously, “walking through” a 3D representation of underground rock structures. Interpreters can scan multi-attribute/ multivolume seismic, well and cultural data, and reservoir models. This breakthrough technology is being utilized to facilitate review of development plans, locations and related G&G aspects. The 3D volume visualization will aid the team of Geoscientists to accelerate the workflow of evaluating the proposals for exploratory and development locations, Commerciality declarations, Appraisal programs, Development plans submitted by the Operators for various PSC blocks.

iv. **Essentiality Certificate Monitoring System (ECMS)-** The EC department in DGH has been using an online workflow based system viz Essentiality Certificate Monitoring System (ECMS). DGH is currently using a JSP-Oracle based web enabled workflow system for issuing Essentiality Certificate to E&P operators for facilitating exploration activities related to the exploration and production programme in the country.

v. **National Data Repository (NDR):** National Data Repository (NDR) is a government sponsored data bank to preserve and disseminate Oil and Gas information and data in order to promote and regulate exploration and development activities in the country. It shall be used for the purpose of storage, preservation, and distribution of seismic (Pre-Stack & Post Stack), Velocity, Well, Production, Archive Gravity, Magnetic, Electromagnetic and related technical information.

vi. **Implementation of E-office (File Tracking System):** The need for creating necessary infrastructure to monitor and supervise the exploration and production programme by implementing a File Movement System for conducting office procedures electronically is under process and expected to transform DGH functioning to a more efficient mode.

vii. **Restructuring of DGH Website:** DGH is in the process of restructuring its existing website www.dghindia.org strictly in line with the Guidelines for Indian Government Website. The web site will be bilingual both in English and Hindi. The site will have all the accessibility features to persons with disabilities as laid down within the above guidelines. The site will also have a backend database whose partial dataset will be in constant synchronization with DGH’s in-house MIS database".

1.30 The Committee observed that New Exploration Licensing Policy (NELP) was expected to attract investments in the exploration and production sector in the country. However, during the last 15 years of NELP, desirable investments have not been

materialized to the extent expected. In that regard, when the Committee asked as to whether the regulatory framework and decision making mechanism of DGH is partly responsible for that, the Ministry clarified as under:

> "The NELP has definitely triggered the investment in E&P activities from both National & International players though may not to the extent of expectations. The awarding of 254 exploration blocks in nine rounds of NELP reflects the interest shown by both public sector & private sector companies which has given them the opportunity to compete on equal terms.
>
> Before NELP, only 35 E&P companies were active but under NELP regime, the number of participating companies increased to 117 (11PSUs, 58 Private & 48 foreign companies).
>
> A sum of more than US$ 23.92 Billion invested (US$ 14.49 Billion on exploration and US$ 9.42 Billion on development) in the NELP regime so far till 31.03.2014.
>
> However, few of the reasons for investment falling short of expectation are listed below:

i. Fiscal stability & other issues– In some cases, certain incentives like tax benefits are withdrawn at later stages and issues raised by different ministries after the awarding of blocks send wrong signals to the investors.
ii. In the present Cost recovery model of NELP, government monitoring is done upto finer and specific details which consume time; therefore exploratory work is affected.
iii. Due to micro monitoring of the projects to protect the Government share of profit leads to disputes and arbitrations.
iv. In NELP there is no incentive for operators to keep the exploration cost low to delay/avoid sharing the profit with Government, which is after recovering all the costs.
v. Offer of acreages only from time to time & not round the year basis or as per the preference of the contractors. Bidders have no choice in proposing acreages of their choice. Time of offering the block is the choice of Government.
vi. Limited data availability in data packages of some blocks".

1.31 When enquired about the role of DGH which undertakes safety studies while reviewing exploration programme of the company and the safety related functions assigned to Oil Industry Safety Directorate (OISD), the Ministry submitted as under:

"Government of India, decided to set up a Directorate General of Hydrocarbons (DGH) under the administrative control of the Ministry of Petroleum and Natural Gas through a resolution dated 8th April, 1993.

As per above resolution, DGH was originally assigned to advise Government on the laying down of safety norms and framing Regulations on safety in oil field operations, prescribe pollution control measures and assist in inspection and periodic safety audit.

Later on, Government of India vide notification dated 18.06.2008 had assigned the safety in offshore oil field operations related function to Oil Industry Safety Directorate (OISD). Petroleum & Natural Gas (Safety in Offshore Operations) Rules, 2008 were notified by Govt. of India in June, 2008 for regulation of safety in offshore exploration, production& drilling activities and matters connected therewith.

OISD has been designated as competent authority to exercise powers and functions as stipulated in Petroleum & Natural Gas (Safety in Offshore Operations) Rules, in June 2008.

Directorate General of Mines Safety, DGMS, is the Regulatory Agency under the Ministry of labour and employment, Government of India in matters pertaining to occupational safety, health and welfare of persons employed in mines (Coal, Metalliferous and oil-mines) relating to Onland operations.

However, in line with the provisions provided in PSCs the safety and environmental aspects are being monitored by OISD in coordination with DGH".

Post of Director General of Hydrocarbons (DGH)

1.32 The Committee noted that the post of Director General of Hydrocarbons has been lying vacant for a long time. In the same context, they wanted to know the details of all the Director Generals (full time/in charge) of DGH along with the tenure of each one, the Ministry submitted the following details:

Sr. No.	Name	DESIGNATION	DURATION	
			From	To
1	Dr. Avinash Chandra	Advisor (Exp) MOPNG & DG-DGH	May-1993	Dec-1998
		DG-DGH	15-Jan-1999	30-Sep-2003
2	Shri G. C. Saxena	GM (Geophysics) & Acting DG-DGH	01-Oct-2003	Oct-2004
3	Shri V. K. Sibal	DG-DGH	01-Nov-2004	Oct-2009
4	Shri S. K. Shrivastava	Director (Operations) Oil India Limited & Additional Charge DG-DGH	Nov-2009	Feb-2010
		DG-DGH	25-Feb-2010	April -2012
5	Shri A. Girdhar	Joint Secretary (E) MOP&NG & Addl. Charge of DG-DGH	01-May-2012	11-Jun-2012

6	Shri R.N.Choubey	DG-DGH	12-Jun-2012	05-Feb-2014
7	Shri B.N.Talukdar	DG-DGH	06-Feb-2014	30-Jun-2015
8	Shri A.P. Sawhney	Addl. Secretary MOP&G & Additional charge, DG-DGH	01-Jul-2015	Till date

1.33 The Committee also sought clarification as to whether the post of DGH is a technical one or an administrative one and the steps being taken to fill up the post, the representative of the Ministry during the oral evidence stated as under:

> "It is technical, Sir, except for Mr. Choubey from the administrative service who was posted for a year. Otherwise, the post of DGH has been filled up by the technical people. And even today the rule which has been approved in consultation with DOPT and UPSC provides for technical people with experience in the upstream sector only to be eligible for the post of DGH. The advertisement has been issued recently".

1.34 Further, elaborating on the issue during the oral evidence, the representatives of the Ministry submitted the following:

> "There were no recruitment rules earlier for the post of Director General of Hydrocarbons actually. Last time when an incumbent was posted, it was stipulated that there should be recruitment rules in place before the next recruitment process starts actually. And that framing of recruitment rules took more than the expected time because we wanted certain provisions to be made".

1.35 When specifically asked as to when will the post be filled up by the Government, the Ministry submitted the following in its written reply:

> "The tenure of previous Director General ended on 30.06.2015. Thereafter, Additional Secretary, MoP&NG has been entrusted with additional charge of DGH with the approval of ACC, w.e.f. 01.07.2015. While approving the appointment of last incumbent, ACC had directed to frame Recruitment Rules (RRs) before making further appointment to the post of DGH. In pursuance of the direction of ACC, RRs to the post of DGH has been finalized and circular inviting application has been issued in employment news, leading news papers and posted on MoP&NG website. Last date for receiving application is 20.12.2015. Thereafter, selection process will be followed".

Staff Strength of DGH

1.36 When asked to give details with regard to the actual and sanctioned staff strength of DGH, the Ministry has stated as under:

"At present, DGH has actual strength of 187 out of which 7 Officers are slated for repatriation w.e.f. 01.06.2015 as against rationalized sanctioned strength of 255 as approved by the Administrative Council of DGH. The Administrative Council however had decided to restrict the strength to 220 for implementation under phase-I".

1.37 Further, when enquired about the existing procedures adopted by DGH for obtaining officers on deputation from oil PSUs and also as to whether there is any fixed number of staff to be deputed from ONGC and OIL, the Ministry submitted as under:

"The deputation of officers from Oil PSUs is done to DGH is in consultation with CEOs of various Oil PSUs. Current manpower strength of DGH is of 220 officers. The officers are normally posted 80% from ONGC and 20% from remaining Oil PSUs such as OIL, IOCL, GAIL and HPCL etc".

1.38 DGH has been strengthening itself by obtaining officers on deputation from various Oil PSUs during the period of 2012-13 to 2014-15 as under:

Sl. No.	Financial Year	No. of Officers on deputation
1.	2012-13	112
2.	2013-14	146
3.	2014-15	182

Strength of executives on deputation from PSUs to DGH has increased from 112 in 2012-13 to 182 in 2014-15 (as on 01.12.2015).

Following steps have been taken to strengthen DGH in multi disciplinary domains like legal, environmental, financial and technical fields:

- In order to facilitate collective decision making on substantive issues, an Executive Committee of DGH comprising of DG, DGH as its chairman, Executive Directors (EDs) and FA & CAO has been constituted.

- In order to meet shortage of executives, Advisors /Consultants have been engaged in order to strengthen multidisciplinary domains like legal, environment, finance and technical disciplines.

Two legal professionals, one finance professional, one senior level professional in the field of environment retired from Ministry of Environment , one technical professional and one retired Major General from Indian army having adequate experience have been engaged as consultants /advisors on contract basis to meet the experienced manpower requirement .

- Contract Finance department has been strengthened with a total manpower strength of 12

- Efforts are being made to obtain few additional experienced professionals of various technical disciplines like geology, geophysics, reservoir, production etc from PSUs on deputation.

- In order to supplement the efforts of strengthening DGH and to tide over the manpower shortage, entire installation of hardware , software and National Data Repository solution build up and its operationalization has been outsourced for next five years to M/s Halliburton. DGH scientists, engineers and technicians have been fully associated with M/s Haliburton for building up competence in NDR operations in order to enable DGH to ultimately take over the task itself.

- Manpower deployment has been optimized leading to better efficiency.

- An outside consultant is being hired for undertaking detailed study on organizational restructuring of DGH, its funding and staffing pattern keeping in view its current mandate".

1.39 Asked by the Committee as to whether DGH is able to run efficiently even at the staff strength of 187 employees as against the sanctioned strength of 255, the Ministry submitted the following details:

"As per the existing arrangement, posts in DGH are to be filled in through the staff drawn on deputation/ tenure basis mainly from oil sector PSUs, DGH staff gets repatriated from time to time after completion of their deputation term. This process results in periodic rotation and substitution of old experienced staff with newly posted staff from PSUs. DGH is dependent on PSUs for its staff requirements. Because of their own operational requirements and commitments as also the large attrition of staff over the years, it is often not possible for PSUs to spare their well experienced and field trained staff for deputation/ secondment to DGH to meet the entire additional demand of DGH staff. In view of the above constraints, phase wise filling up of posts was envisaged for DGH to enable PSUs to spare and recruit additional manpower for postings in DGH after they get few years experience of field working.

Further, Staff strength of 255 was envisaged keeping provisions for increased work load.

a. On account of expected future exploration bidding rounds of NELP/ULP, CBM and Shale Gas which are to come up in near future. Also under the proposed Open Licensing System, it is expected that there will be round the year open

bidding system which would need increased staff strength which is yet to be implemented.

b. Increased work load after full operationalization of NDR under setup in DGH.
c. Implementation of new Speculative Multi-client Geo-scientific survey project and massive 2D Seismic work in yet to be appraised areas. The activity has recently begun.
d. Increased focus on technical work and Gas Hydrate research and exploration programme.

Remaining 35 posts (over and above 220) for the next phase were to be filled in after commencement of the above activities. Presently, work on some of the above activities has already been initiated. With the acceleration of pace of these activities, DGH needs to be strengthened to its full sanctioned strength of 255 shortly.

Presently, the work load is being managed through optimization of available manpower".

1.40 The Committee wanted to know different categories of posts and eligibility criteria for each of these and also whether these posts are filled up on deputation or on contract basis. Further, the Committee enquired as to whether people from the industry/open market are eligible to get appointed to which the Ministry furnished the following information:

"DGH has an approved organisational structure and positions are spelt out in the structure. To fit into these positions officers are deputed from the PSUs belonging to categories of post of Director E-9 to E-1. The details as per approved organogram of DGH are as under:

i. Five positions of Deputy Directors General (DDGs) of the levels equivalent of Group General Managers (E-8) or Executive Directors (E-9) in ONGC/OIL or equivalent level in other Oil PSUs
ii. 8 positions of the level equivalent of General Managers (GMs E-7) in ONGC/OIL or equivalent level in other Oil PSUs.

The eligibility for the deputation is indicated by DGH in terms of level and discipline as per the requirement in terms of sanctioned strength. All the posts in DGH are filled on deputation. People from industry / open market are not eligible for appointment in DGH as DGH has no staff cadre of its own".

1.41 The Standing Committee on Petroleum and Natural Gas had in their 15th report (15th Lok Sabha) recommended DGH to have its own manpower. The Ministry in its

Action Taken Notes stated that ONGC and OIL would be allowed to recruit and deploy its personnel at DGH on long term basis.

When asked about action taken in this regard, the Ministry submitted the following information**:**

> "Administrative council of DGH has taken a decision to ask ONGC and OIL for recruitment of officers at induction level and post them in DGH on long secondment /semi permanent basis. It was also decided to continue with existing deputationist till DGH attains its strength in totality. ONGC posted 19 officers in DGH after induction at E-1 level. The other decisions taken in the Standing committee is under implementation".

1.42 Asked as to whether DGH has any plans to create its own cadre, the Ministry stated as under in its written reply:

> "It has been decided to hire a consultant to study the systems adopted by various similar agencies worldwide and including the best possible model to be adopted in India for DGH including staffing pattern".

1.43 When asked as to whether there is any mechanism to check that decisions taken by the staff drawn from public sector companies do not favour their parent companies, the Ministry submitted as under:

> "There is no possibility of decision taken by the staff drawn from oil industry on deputation / tenure basis becoming in favour of parent companies as they are required to take decisions in terms of well defined contractual provisions, rules, regulations, policy and guidelines. Thus, there is least scope for discretionary decisions by the staff in favour of parent companies. Further, the decisions are reviewed at various levels within DGH before being recommended".

1.44 Enquired as to whether DGH has powers to hire services of experts and whether any efforts have been made to facilitate hiring of their services, the Ministry submitted the following reply:

> "DGH has been delegated powers by the Government to hire services of experts and for rendering legal advice / services in the requisite areas. In case the cost of services rendered is beyond the powers of Director General- DGH, specific approvals are obtained from the Government on case to case basis".

Training in DGH

1.45 In response to the specific query about the training/capacity building programme that is being conducted by DGH to enable its officials to perform their responsibility more efficiently, the Ministry has furnished following information:

> "An internal training and development **(T&D)** policy has been developed and implemented at DGH. The objective of the policy is to assess individual training and development needs and to provide T&D opportunity to enhance Knowledge and skill to the Officers on subject matter. The various trainings and exposures provided to Officers are outlined as under:

- As DGH is manned by deputationists from different PSUs, necessary arrangements are done so that officers avail T&D opportunity from their parent organisation as per the training calendar followed by different PSUs.
- In-house training is also being organised by inviting technical experts from various domains while ensuring that large number of DGH personnel are benefitted from such exposure.
- Besides DGH personnel are exposed to different technical seminars/conferences and training organised annually. Officials are also sent abroad for the specific technical training suitable to DGH's requirements.
- Emphasis is also given for paper and poster presentations at various academic/technical forums within the country and overseas as a knowledge and image building measure.
- Safety training are provided to the DGH officials before attending the on board vessel duty to provide the knowledge and skill to build confidence needed to survive life and death situations, reacting appropriately to avoid/overcome dangerous situations, engress safely from the ditched helicopter and survive till rescued.
- Some management training programmes are also selected for over all development of the personnel so that the quality of service rendered by DGH to all the stakeholders in E&P sector of India can be met".

1.46 Further, when the Committee wanted to know about the funds spent on training during last 3 years, the Ministry furnished the details as under:

Year	Expenditure on Training (Rs. In Lakhs)
2011-12	33.35
2012-13	1.43
2013-14	19.69

1.47 When asked about the reasons for significant reduction of expenditure by DGH on training of officials during the last two years as compared to previous years, the Ministry furnished the following information:

> "The trainings in DGH are mostly of technical nature. The need of training is identified for a particular officer and then the same is imparted through external training Institutes. Since DGH is manned by the officers who are on deputation to DGH from various Oil PSUs, most of them are experienced and have undergone such trainings before joining DGH and may not require basic trainings. Sometimes parent PSUs themselves send their officers posted in DGH on training as per respective PSU's training policy. Moreover, ONGC and OIL have agreed to impart all the technical trainings at no cost basis to their officers posted in DGH at par with other officers posted in their respective organizations. In such cases DGH need not incur expenditure directly.

1.48 Asked as to whether the composition and details of the team of officials/experts of DGH entrusted with the responsibility of reviewing the exploration programmes of companies meet the required experience and expertise for the job entrusted to them, the Ministry has furnished the following reply:

> "Production Sharing Contract (Exploration) team consisting of 48 officials/experts of DGH are entrusted with the responsibility of reviewing the exploration programmes of Exploration blocks awarded during Pre-NELP and NELP Bidding rounds.
>
> Production Sharing Contract (Exploration) team is headed by GGM Level (E-8) officer with field experience of 36+ years, supported by 7 Coordinators of DGM Level(E-6) officer with average field experience of 28+ years and 40 Nodal officers (E1- E6) with average field experience of 15+ years. These officers are having basic qualification of geo-sciences, geo-chemistry, engineering with additional qualification of MBA and PhD. These officers have field experience of different facets in onshore and offshore areas.
>
> Further, Production Sharing Contract (Exploration) team seeks advice from other technical teams in DGH consisting of officials/experts like Geology & Geophysics, Geophysical Data Acquisition, Logging, Drilling, Legal and Contract Finance etc. while reviewing the exploration programmes of Exploration blocks".

1.49 Also, asked as to whether DGH has expert workforce to supervise work in areas like Shale gas, CBM, NGHP etc. as these are in nascent stage in the country, the Ministry has submitted following details:

"DGH has requisite Geoscience workforce to supervise work in areas like Shale Gas, CBM, Gas Hydrate etc. In addition to this, DGH has MoUs with various national and international agencies to monitor/supervise the implementation of work in areas like Shale gas, CBM and NGHP.

E&P Activities in CBM are similar to that of conventional Oil and Gas. Various NOCs, Private companies are involved in E&P activity of CBM in India. DGH has a dedicated team to monitor and supervise the work carried out in CBM blocks. DGH seek technical advice of Central Mine Planning and Design Institute (**CMPDI)** wherever it is deemed necessary.

Shale gas activities are carried out by M/s. ONGC and M/s. OIL in India; the National Oil Companies have adequate manpower and expertise in carrying out the exploration activities. Besides, the NOCs seek help/advise from various service providers of international repute to carry out the exploration related activity.

Gas Hydrate activities are still in R&D stage in India and ONGC has issued the Letter of Award to M/s Japan Drilling Company for the execution of NGHP Expediton-02. ONGC has sufficient manpower and technical expertise to implement the project. DGH with its current workforce is able to monitor the activity carried out by ONGC".

1.50 Regarding programmes being conducted by DGH in research and development activities to create expert workforce in this industry, the Ministry has stated as under:

"DGH is imparting state of the art training to its staff from time to time to create expert work force. Staffs trained in DGH serve the industry after repatriation/transfer /separation from DGH".

1.51 When asked as to whether any MoUs being signed and collaborative efforts being made by DGH with other countries to improve knowledge and expertise of their personnel working in DGH, the Ministry submitted the information as under:

"DGH on behalf of Government has signed MOUs with different countries for knowledge sharing and dissemination".

1.52 On being enquired about any constraints faced by DGH in any area of its functioning, the Ministry has submitted details as under:

"The constraints being faced by DGH in area of its functioning may be categorised as under:

1. Challenges in contract management due to shortcomings in existing Production Sharing Contracts.

2. Manpower Challenges– since DGH has no permanent cadre of its own, all working employees are being drawn on deputation from various PSUs. Every PSU has a repatriation policy which requires its employees to be repatriated back to them after certain duration. As a result of this system, DGH is facing the problem of lack of experienced officers due to their repatriation and comparatively less experienced officers available majorly for the work related to roles and responsibilities of DGH".

Funding of DGH

1.53 When enquired as to how DGH gets funds to carry out its activities and also whether it receives money by way of fees in its account, the Ministry submitted the following details:

> "As per DGH resolution, the expenditure of the Directorate General will be fully funded by grants from Oil Industry Development Board. DGH plans all its activities, which are reflected in the budget required for various activities, staff salaries, establishment and other miscellaneous expenditure which is budgeted and approved by the Administrative Council of DGH. Once approved, the fund is released by OIDB.
>
> DGH does not receive any money by way of fees etc. in its account"

1.54 Further, regarding the annual budgetary allocation, the representative of DGH has submitted the following information:

> "Our fund is very limited. It is hardly Rs. 100 crore per year on an average, even less than that. In the last five years, our achievement has been 92 per cent, 91 per cent, almost 100 per cent. This year, it would be more than 95 per cent. Our budget is mostly salaries for our people coming from ONGC, OIL, and other PSUs. Rest of the budget is with the contracting companies, PSUs and operators. Our own budget is very limited."

1.55 The Committee enquired as to whether DGH finds the present funding arrangements appropriate and adequate to carry out its various activities, and requires any measures to augment the resources, the Ministry submitted its written reply as under:

"The present funding arrangement of DGH through OIDB grants is considered appropriate and adequate to carry on its various activities".

1.56 When enquired about the plans by the Government to allocate separate budgetary grants for DGH for its financial autonomy, the Ministry stated as under:

"A consultant is being hired by DGH to study the practice being adopted worldwide and submit a report. One of the terms of reference is to study the present financial structure and suggest the best suitable modalities. Government may review constitution of DGH based on the recommendations of the consultant hired".

1.57 When asked about the reasons for variations in secretarial expenditure during the last three financial years, the Ministry submitted as under:

"Funds allocated under "Secretarial Expenditure" are mainly on account of reimbursement of salary & allowances of deputationists, to Oil PSUs from where officials have been deputed to DGH, against actual disbursement by them. The detail of the same is as under:

(Figures in INR Lacs)

Financial Year	Salary & Allowances	Other Routine Administrative Exp.	Total Secretarial Expenditure
2011-12	2200.00	1451.00	3651.00
2012-13	4500.00	1237.00	5737.00
2013-14	1847.64	1016.16	2863.80

The increase in "Secretarial Expenditure" in the year 2012-13, was mainly due to reimbursement of arrears of salary & allowances of deputationists and also increased manpower in DGH.

Further, decrease in "Secretarial Expenditure" in the year 2013-14 is due to non-reimbursement of salary & allowances of last two quarters, which was, however, subsequently cleared in the next Financial Year and was accordingly allocated in next year's budget".

Funds allocated and Expenditure

2009-10 **(Rs./lac)**

Sl. No.	Budget sub head/primary head	Funds allocated 2009-10 (RE)	Expenditure 2009-10	% Utilisation
1	2	3	4	
A	Revenue			98.15
A1	E&P Activities	1295.00	1249.45	
A2	Promotion of Hydrocarbon Activities	1200.00	1188.73	

A3	PSC Arbitration & Audit	361.00	355.67	
A4	Secretarial Expenditure	3078.00	3121.88	
B	**Capital**	185.00	89.82	
		6119.00	**6005.55**	

2010-11

Sl. No.	**Budget sub head/primary head**	**Funds allocated 2010-11 (RE)**	**Expenditure 2010-11**	**% Utilisation**
1	**2**	**3**	**4**	
A	Revenue			
A1	E&P Activities	151.00	140.24	
A2	Promotion of Hydrocarbon Activities	1709.55	998.83	89.13
A3	PSC Arbitration & Audit	410.00	525.45	
A4	Secretarial Expenditure	3464.00	3471.23	
B	**Capital**	115.00	78.08	
		5849.55	**5213.83**	

2011-12

Sl. No.	**Budget sub head/primary head**	**Funds allocated 2011-12 (RE)**	**Expenditure 2011-12**	**% Utilisation**
1	**2**	**3**	**4**	
A	Revenue			
A1	E&P Activities	488.00	207.74	
A2	Promotion of Hydrocarbon Activities	988.00	930.32	
A3	PSC Arbitration & Audit	605.00	604.95	92.44
A4	Secretarial Expenditure	3651.00	3632.17	
B	**Capital**	90.00	6.71	
		5822.00	**5381.89**	

2012-13

Sl. No.	**Budget sub head/primary head**	**Funds allocated 2011-12 (RE)**	**Expenditure 2011-12**	**% Utilisation**
1	**2**	**3**	**4**	
A	Revenue			
A1	E&P Activities	22.00	21.35	
A2	Promotion of Hydrocarbon Activities	98.00	98.74	
A3	PSC Arbitration & Audit	1215.00	1141.41	91.34
A4	Secretarial Expenditure	5737.00	5247.57	
B	**Capital**	107.00	48.44	
		7179.00	**6557.51**	

2013-14

Sl. No.	**Budget sub head/primary head**	**Funds allocated 2011-12 (RE)**	**Expenditure 2011-12**	**% Utilisation**
1	**2**	**3**	**4**	
A	Revenue			100.00

A1	E&P Activities	0.00	0.00	
A2	Promotion of Hydrocarbon Activities	8.35	8.35	
A3	PSC Arbitration & Audit	701.05	701.05	
A4	Secretarial Expenditure	2863.80	2863.80	
B	**Capital**	33.37	33.37	
		3606.57	**3606.57**	

1.58 When asked to explain reasons for gradual lowering of fund allocations over the last few years towards E&P activities and promotion of hydrocarbon activities by DGH ultimately leading to nil allocation in the year 2013-14, the Ministry furnished information as under:

"E&P Activities

An amount of Rs. 361 Lakhs was allocated in BE 2013-14 but after review the same were allocated as nil in RE 2013-14. The main reasons were as under:

(i) Oil Shale Study – Oil Shale Study was planned on the basis of initial work completed in North-East areas. The exploitation of oil shale needs mining of rock and then scrubbing the oil shale associated in the rocks through chemical and mechanical process. The volume of oil recovered from this fischer tropes method is very less and needs further R&D efforts. The study was planned in the FY 2013-14 with the help of IOCL R&D Lab for which Rs. 300 Lakhs were allocated. However, after the detailed technical deliberation in DGH it was suggested to gather further data before carrying out the study. Thus, the budget has been carried forward to the next financial year.

(ii) API in Category III & IV Basins – A token provision of Rs. 10 Lakhs was made in the budget BE 2013-14 for carrying out reconnaissance survey initially in identified category III and category IV basins. Later, a decision was taken in the Govt. to carry out the geo-scientific activity of 2D data Acquisition Processing and Interpretation in Category III & IV Basins with the help of ONGC and OIL. The funding mechanism for this survey is yet to be finalized pending which the budget utilization under this category was Nil in the year 2013-14 and was carried forward to BE 2014-15.

(iii) National Data Repository – An amount of Rs. 50.00 Lakhs was allocated for purchase of consumables in BE 2013-14 but could not be used as the contract for NDR was signed in March 2014. The amount so approved will be utilized once the data population phase of NDR is complete and consumables are required for operationlization of NDR. However, the budget is not used but the activity is continuing and expected to complete by March 2016.

Promotion of Hydrocarbon Activities

The budget under this head is being kept mainly for promotion of bidding rounds in India and around the world. Based on the previous experience an amount of Rs 1750 Lakhs was allocated in BE 2013-14 considering the next bid round activities. However, Rangarajan Committee suggested that Govt. should move away from production sharing contract to revenue sharing contract and the decision in this regard is yet to be taken. Hence, after review, the budget was re-allocated as Rs. 8.35 Lakhs in RE 2013-14. The main reasons are as under:

(i) NELP-X - BE 2013-14 for NELP-X & CBM-V was approved for Rs 1200 Lakhs and Rs 200 Lakhs respectively. The same was however not announced by GoI in FY 2013-14 and hence carried forward to FY 2014-15.

(ii) Shale Oil & Gas - expenditure of Rs 200 Lakhs on Shale Gas Round I was not considered as Cabinet Committee on Economic Affairs (CCEA) approved Shale Oil/Gas Policy only for NOCs. Further ONGC had not charged for Rs 70 Lakhs allocated for the study of sedimentary basins. An amount of Rs 80 Lakhs allocated for social impact study was carried forward to FY 2014-15 as the same was required to be done by NEERI. This has resulted in nil allocation in the FY 2013-14.

Hence, it can be seen that the required activities did not stop despite downgrading the budget under the head promotion of hydrocarbon activities".

Exploration of Shale Oil and Gas

1.59 When the Committee wanted to know about the salient features of 'Policy Guidelines for exploration & exploitation of Shale Oil & Gas by national oil companies under nomination regime formulated in October 2013, the Ministry submitted as under:

"MoP&NG announced policy for shale gas and oil exploration and exploitation by National Oil Companies in nomination blocks.

As per policy guidelines, ONGC and OIL have to carry out Shale Gas and Oil exploration in 50 and 05 blocks respectively for assessment under Phase-I. ONGC is carrying out Shale Gas and Oil exploration activities in Cambay, Cauvery, Krishna-Godavari and Assam and Arakan Basins. OIL INDIA Ltd. is carrying out Shale Gas and Oil exploration activities in Assam and Rajasthan basins. In phase II and III ONGC will carry out exploration in 75 & 50 blocks respectively. Oil India will carry out exploration in 5 blocks each in Phase II and III.

During the Assessment Phase (three years), the Company shall drill, as Committed Work Program, at least 1 (one) Pilot well in single PEL/PML block having a contiguous area up to 200 sq. km and at least 2 (two) Pilot wells in

single PEL/PML block having a contiguous area of more than 200 sq. km. These wells constituting the Committed Work Program shall penetrate the target shale horizon(s) to assess the potential for Shale Gas and Oil.

Upon completion of Assessment Phase, the Company shall prepare an estimate of potential production of Shale Gas and Oil envisaged to be achieved vis-a-vis WP, if any, and submit Field Development Plan (FDP) to DGH within a period of 12 (twelve) months. The yearly production profile with number of producing wells shall also be submitted.

Upon submission of the yearly production profile vis-a-vis WP, the Company shall commence development activities within 6 months.

Under Shale Gas Policy, during the first assessment phase ONGC has to drill around 57 wells in all 50 blocks and OIL has to drill around 6 wells in all 05 blocks along with EIA study including sourcing of water and its subsequent disposal, G&G studies, Coring, Hydro-fracturing, Geo-chemical studies, Geo-mechanical/Geo-Hazard/Geo-technical studies and Resource Assessment for Shale Gas and Oil".

1.60 Thereafter, the Committee enquired about the findings by Multi Organisation Team analyzing the existing data set and suggesting methodologies for the development of shale oil & gas in India, the Ministry provided the following information in this regard:

"A Multi Organizational Team (MOT) of DGH, ONGC, OIL, GAIL was formed by MOPNG to analyse the existing data set and suggest methodology for Shale Gas development in India.

MOT, based on scrutiny of geo-scientific data has identified six prospective basins for first phase of Shale Gas exploration, namely, Cambay, Krishna Godavari onland, Cauvery onland, Assam-Arakan and Indo-Gangetic Basin. Based on these findings, ONGC and OIL have been asked to start shale gas exploration work under the policy framework".

1.61 When asked as to whether any cooperation has been planned with countries like Canada which is into shale resources development or some other pioneers in the fields, the Ministry has submitted the following information:

"Presently there is no MOU with Canada for sharing the experience & expertise in the areas of Shale Gas exploration and development. However, a MOU has been signed between the Ministry of Petroleum & Natural Gas (MoP&NG) and the Department of State (DOS), Govt. of USA to provide a framework for the exchange of knowledge & expertise between DOS and MoP&NG in the areas

concerning shale gas resource characterization and assessment in India. The details of cooperative activities are:

- Shale Gas Resource Assessment
- Technical studies
- Regulatory Framework Consultation
- Investment promotion"

Review of exploration programme by DGH

While going into the details of exploration and development programmes of companies being reviewed by DGH, the Ministry submitted the following details:

Operator Type	Operator
Foreign	Bengal Energy International Inc.
	BHP Billiton Pty. Ltd.
	BP Exploration (Alpha)
	British Gas Exploration and Production (India) Ltd.
	Cairn Energy India Pty Ltd.
	Deep Energy Llc
	ENI (India) Ltd.
	Geo-Global Resources Inc.
	Geo-Petrol International Inc.
	Hardy Exploration & Production (India) Inc.
	Heramac Ltd.
	Joshi Tech. Inc.
	Naftogaz
	Niko Resources Limited.
	OAO Gazprom
	Oilex-NL Holdings Ltd
	Okland Offshore Holdings Ltd.
	Petrogas
	Premier Oil North East India.
	Santos International Operations Pty. Ltd.
Private	Adani Welspun Exploration Ltd.
	Assam Company Ltd.
	Essar Oil Ltd.
	Focus Energy Ltd.
	Geo Enpro
	Harish Chandra (India) Ltd.
	Hindustan Oil Exploration Company Limited.
	Hydrocarbon Resource Development Company Ltd.

	Interlink Petroleum Ltd.
	Jay Polychem (India) Ltd.
	Jubilant Oil & Gas Private Limited.
	Mercator Petroleum Private Limited.
	Omkar Naturals Resources Pvt. Ltd.
	Pan India Consultants
	Pratibha Oil and Natural Gas Pvt. Ltd.
	Prize Petroleum Company Ltd.
	Quest Petroleum Pvt. Ltd.
	Reliance Industries Ltd.
	Sankalp Oil and Natural Resources Ltd.
	Selan Expl. Tech. Ltd.
	Sintex Oil & Gas Pvt. Ltd.
	Vasundhara Resources Ltd.
PSU	Bharat Petro Resources Ltd
	GAIL (India) Limited.
	Gujarat State Petroleum Corporation Ltd.
	Indian Oil Corporation Ltd.
	National Thermal Power Corporation
	Oil and Natural Gas Corporation Ltd.
	Oil India Ltd.

1.62 When specifically asked as to whether the exploratory activities of ONGC/OIL were reviewed by DGH and if so, its findings, the Ministry submitted as under:

> "The exploratory activities of ONGC/OIL blocks under PSC regime are reviewed by DGH as part of their annual work program and budget. There are 40 active exploratory blocks with ONGC and 11 active exploratory blocks with OIL. A committed work program as pursuant to the applicable PSC of a block is reviewed/approved and monitored for actual work done in a given financial year. If at the end of the exploration phase the actual work done is found to be short of the committed work program, then DGH determines the cost of unfinished work program and invokes for payment to the Government".

1.63 What the Committee further wanted to know about the compliance status of the recommendations on upstream PSUs i.e. ONGC/OIL as reviewed by DGH during the last three years, the Ministry furnished the information as under:

"Each exploration Block awarded in PSC regime has a committed work program pursuant to its PSC. It is reviewed/approved and monitored for actual work done in a given financial year. Contractors while adopting the best practices in Oil and Gas operations generally comply with their committed work program.

However in case the committed work program has not been completed by any given contractor in a block, then DGH reviews for the reasons thereof and in case of inadequate or insufficient premise, cost of unfinished work program is determined and the same is sought from the Operator".

1.64 The Committee observed that an amount of Rs. 5,29,40,555.00 was remaining to be paid by the block operators who had failed to fulfill MWP. In that regard, when enquired as to what kind of action was taken to recover that standing payment from contractors, the Ministry submitted the following information:

"The following actions are taken at DGH to recover the standing payment from the contractors who failed to fulfill MWP:

1. Letters and reminders have been sent to the concerned contractors for timely submission of the standing payment.
2. Meetings have been organized with operators for early resolution of any dispute or difference of opinion ensuring proper clarity for both contractors and DGH.
3. In case of any major dispute regarding the payment legal action is being contemplated in due cognizance of MoP&NG".

1.65 When the Committee specifically enquired about the amount of bank guarantee that was being sought from PSC contractor to ensure compliance with the committed work programme and whether that amount was sufficient to recover the cost of unfinished work programme if accrued later and moreover, whether any move was under way to increase the same, the Ministry submitted the following details:

"The PSC Contractors are required to submit bank guarantee annually for 35% of the estimated expenditure on the annual exploration program, in PSCs falling up to NELP VII. In NELP VIII and NELP IX PSCs, the Contractors are required to give a one-time bank guarantee for 7.5% of the estimated expenditure in respect of the entire exploratory work program commitment.

The bank guarantee, which is not being computed on the total estimated expenditure in respect of the committed work program, may not be sufficient to

recover the cost of unfinished work program in cases where substantial proportion of committed work program is not completed.

If it is desired to recover the cost of unfinished work program entirely from the bank guarantee, the Contractor may be required to furnish bank guarantee in respect of the estimated expenditure on the entire committed work program. The amount of bank guarantee in such scenarios may be very high that may discourage investors from participating in the bidding. Hence PSC envisages obtaining the bank guarantee for a lesser amount but that may be adequate to serve as deterrent to non serious operators from participating in the NELP bidding round.

Presently, there is no proposal in hand to enhance the bank guarantee amount, as it may adversely impact investment in the sector".

1.66 While going into further details of the methodology of cost computation of unfinished work programme, inherent defects in the method and steps that have been taken to remove those defects, the Ministry submitted as under:

"Up to NELP VII PSCs, if the Contractor failed to complete the committed exploratory work program, the Contractor is required to pay to Government an amount that would be required to complete the committed work program, within 60 days following the end of the relevant exploration phase. When the Contractor fails to pay the amount or pays a lesser amount, MOP&NG based on the technical validation done by DGH advises the Contractor to pay the amount as required by the PSC.

Contractors had challenged the methodology used in arriving at the amount demanded from the Contractor. Different methods of computation were suggested by different Contractors.

In order to minimize the discretionary part in the determination of cost of unfinished work program, MOP&NG framed a policy dated 17th December 2007 for determination of cost of unfinished work program based on dry-well principle. DGH does the technical evaluation of the amount in respect of the unfinished work program based on the expenditure actually incurred on a similar well and the amount is duly approved by the MOP&NG before communicating to the Contractor.

However difficulties continue to persist and legal enforcement of the collection of the amount of unfinished work program remains a constraint. Wherever possible, the amount has been recovered by invoking the bank guarantees".

1.67 When further enquired as to how the exploration programmes are reviewed and also the parameters considered in such exercise, the Ministry submitted the following information:

> "Exploration programs of companies are reviewed considering technical parameters, technology applications, quantum of work and timelines. Mainly the parameters considered for evaluating the exploration program are:
>
> 2D seismic Acquisition, Processing and Interpretation **(API)** (in Line kilometres)
>
> 3D seismic API (in Square kilometres)
>
> Reprocessing of seismic data
>
> Drilling of Exploratory and Appraisal wells, (Meterage)
>
> Geo-scientific surveys (Magneto-telluric, gravity, Aero-magnetic, Controlled Source Electro-Magnetic surveys, etc)
>
> Environmental impact assessment and Safety studies".

1.68 When asked about the factors that are considered while converting a PEL into PML along with company and year wise details of the PELs converted to PML during the span of (2008-09) to (2014-15) that has been vested with the authority to allow such conversion, the Ministry submitted the following information:

> "Subsequent to hydrocarbon lead/ discovery in any nomination PEL, on request of operator, the part or whole area of PEL is converted to PML after technical evaluation of the exploration inputs, estimated reserves and production plans etc.,in the proposed PML area. The details of PELs converted partly/whole to PMLs are tabulated in Annexure-I.
>
> Such conversion proposals are technically evaluated at DGH and recommendations are forwarded to MoP&NG for consideration. MoP&NG review the proposals and if found appropriate, recommends the grant to concerned State Govt., which finally issues the grant order, if agreed".

1.69 The Committee observed that as per information provided in respect of review of nomination PELs by DGH, a steep fall was evident in the number of PELs blocks of ONGC & OIL reviewed by DGH during the last 5 years reflecting in the discoveries made in these PELs. In that regard, the Committee enquired about the reasons behind that and asked about the efforts undertaken to remedy the same, the Ministry submitted the information as under:

"The National Oil Companies were carrying out exploration activities since early 50s in the area awarded to them on nomination basis. Govt. brought national policy for exploration in early 90s where initially marginal fields of ONGC / OIL were bidded out through international competitive bidding. Later, in New Exploration Licensing Policy (NELP) all the areas were bid through open competitive bidding. NELP has a defined structure for exploration period and development of discoveries whereas there were no timelines defined for exploration work in the nomination areas of NOCs.

To bring parity, it was decided by the Govt. to fix the timelines for exploration in nomination PELs and complete the committed exploration work in given timeframe. The NOCs were allowed to keep only discovery and development area and to relinquish remaining PEL area. The PELs which did not get any exploration success in stipulated time were relinquished after the expiry of their grant period. The part or the whole PEL, which had the hydrocarbon lead/discovery got converted to PMLs from time to time. Therefore there is a fall in number of PELs but corresponding increase in number of PMLs every year.

Moreover activities in some of the balance PELs are stagnant due to non-availability of necessary permissions from MoD, MoEF&CC and other authorities. Presently the active nomination PELs are very few in numbers. ONGC & OIL had to relinquish the remaining PELs with no hydrocarbon lead/discovery after expiry of grant period. The reviews are being done half yearly and will be done in the current five year plan also".

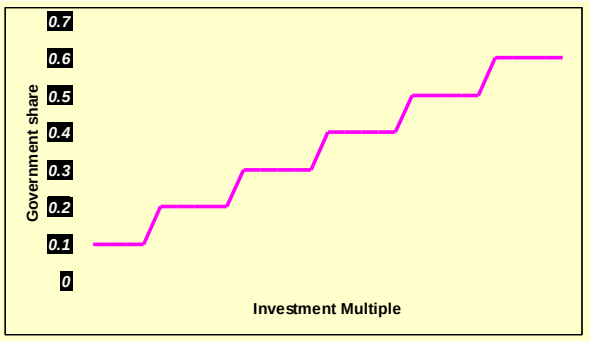
1.70 When the Committee enquired as to whether the regulatory functions of DGH is same for all companies under different regimes of exploration by the Government, the Ministry clarified as under:

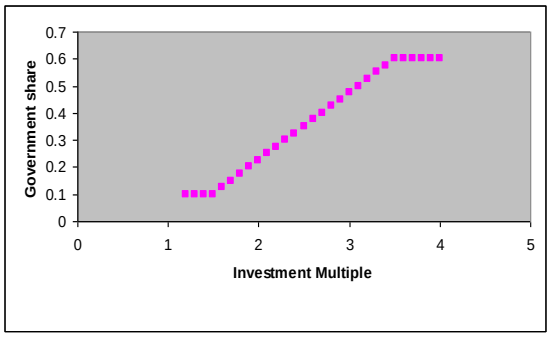
"Under PSC regime DGH regulates the exploration activities of the company in terms of respective contracts, Oil Fields (regulation and Development) act 1948, PNG Rules 1959 and related policies and guidelines whereas activities under nomination regime are regulated by DGH only in terms of Oil Fields (regulation and Development) act 1948, PNG rules and related policies and guidelines".

1.71 When specifically asked about the steps taken to streamline the procedure of methodologies being adopted to compute investment multiple affecting adversely GoI take, DGH stated the following:

"The formula for the computation of the Investment Multiple has been defined and made part of the PSC so as to avoid any possible ambiguities. The formula adopted in the PSC is based on similar global practices. In the initial rounds of NELP contracts, the profit share payable to the Government shifts in a step-

ladder curve when the Investment Multiple increases. In some PSCs with the increase in Investment Multiple the Government share of profit increases sharply. In KG-DWN-98/3, the profit share of Government increases from 28% to 85% when the Investment Multiple increase from less than 3.0 to more than 3.0.





From NELP VII onwards, the profit share of Government is made on a positive linear scale thereby avoiding step-ladder curve".

1.72 Asked as to how DGH ensure adherence to the approved field development plan for checking delays for commencement of production after approval of FDP in absence of any provisions for fixing timeline, the Ministry submitted the following details:

"Firstly, it is the duty of the operator to follow the timelines given in the PSC for approval to the FDP of a certain discovery. The obligation to carry out expeditious petroleum operations by the operator is enshrined in the PSC. It is envisaged that contractor in their own interest will expedite development.

Further, DGH on its part has a system of regularly conducting a quarterly meeting with the operators wherein FDP implementation is also discussed.

However, there is no specific provision in the PSC to handle the issue of delayed implementation of the FDP by the operator. Notwithstanding this fact, DGH/MC/ MoPNG stresses upon the operator to carry out timely implementation of the FDP by way of:

1. Approvals of annual Work Program & Budgets, which includes components of FDP.
2. Discussion as agenda point in MC meetings
3. Quarterly meetings at DGH"

1.73 Further, the Committee noted that the applicability of tax holiday under IT Act in respect of gas produced by contractor awarded by NELP-VII had come under ambiguity due to lack of clarity in the definition of mineral oil. However, as per the Oil fields

(Regulation & Development) Act, 1948, 'mineral oils' include natural gas and petroleum. When the Committee enquired as to whether contractors are getting any tax holiday under IT Act, the Ministry had submitted the following information:

> "Section 80 (IB) (9) of the Income Tax Act granted 100% deduction of profit earned from production of 'mineral oil' for a period of initial 7 years of production, for the purpose of income tax computation. Contractors were availing the tax benefit for production of both oil and gas. However the Finance Bill 2008 amended the term mineral oil not to include natural gas.
>
> As per finance Act 2011, natural gas produced from NELP VIII and CBM IV blocks also would be eligible for tax exemption but the 7-years tax exemption will cease to be applicable to contract awarded after 31st March 2011".

1.74 On being enquired about essentiality certificate issued by DGH on import of drilling machines, consumables and other goods, the Ministry has furnished following details:

> "As per Notification No.21 /2002 dated 1.3.2002 issued by the Central Government, the Director General of Hydrocarbons (DGH) is empowered to issue Essentiality Certificate for exemption of duty for import of goods for E&P operations in India.
>
> In this regard GOI has issued three notifications which allow duty free import of goods for E&P operators. These three notifications are as follows:

1. Notification No. 21/2002 customs dated 01.03.2002 amended vide notification No. 26/2003 – customs dated:-01.03.2003 (oil & natural gas exploration).
2. Notification No. 26/2003 customs dated:- 01.03.2003 (coal bed methane exploration).
3. Notification No.12 /2012 –Customs dated the 17th March, 2012.

> The old serial numbers related to categories of items pertain to the older Notification No. 21/2002 customs dated 01.03.2002 which has been changed to new serial numbers as per the Notification No.12 /2012 –Customs dated the 17th March, 2012. The details are provided as under:

Old S.No	New S.No.	Description
214	356	Goods required for PEL/ML blocks granted by Government of India or state Government to ONGC/OIL on notification basis.
215	357	Parts and raw materials required for manufacture of goods for offshore operation.
216	358	Goods required in connection with petroleum operations under taken under specified contracts (Pre-NELP)

217	359	Goods required for blocks under NELP.
218	360	Goods required in connection with (CBM operations).

Enquired about details of the pending projects awaiting approval from DGH and also the reasons for delay in grant of approval, and also the system in place for granting approvals to operators, the Ministry has provided following information:

"All proposals/projects submitted at DGH are reviewed as per the prescribed timelines of PSC after which they are put forth for the review /approval of MoP&NG /MC as required. The status of current ongoing proposals at DGH is as under:

Work program and budgets and other proposals – For each Block/field awarded in PSC regime a work program in pursuant with its PSC is submitted by the contractor. It is reviewed at DGH and coordinated for the approval from Management Committee **(MC)** before the start of next financial year i.e. by 31st of March. Currently there are 39 Producing fields in development regime and 92 active blocks /fields in exploration regime for which the work program and Budget proposal has been received and reviewed. All these proposals are lined up for review/approval by MC before 31st March 2015 out of which 47 exploration blocks, 2 producing fields and 1 CBM block has already been accorded MC review/approval.

Field Development Plans (FDP) & Declaration of Commerciality (DoC) – A significant number of FDP & DoC proposals are being received at DGH which are being reviewed by concerned technical sections in a time bound manner as prescribed by the PSC. The review process is expedited by means of personal interaction of DGH and Contractor representatives and any delay on Contractor's part is expeditiously followed up to ensure timely examination of the projects. A total of 2 proposals for FDP and 3 proposals of DoC are under examination at DGH. They shall be reviewed and put up for MC approval well within the prescribed timelines as per PSC".

1.75 Asked to furnish details as to how many exploration blocks are presently awaiting clearances from other Ministries, the Ministry has submitted the following details:

"As far as clearance from Ministry of Defence is concerned presently there is no block awaiting clearance. There were 73 exploration blocks which were having issues related to clearance and were considered by Cabinet Committee of Investment (CCI) have been cleared. Nine blocks were considered in no go area, where no further activities are allowed. However, the blocks in these areas were already relinquished and no exploration activities are pending. Remaining 64 blocks were cleared with the intervention of CCI either with or without certain stipulated conditions".

1.76 Further, being enquired about any inter-ministerial institutional framework where such clearances are discussed and differences sorted out, the Ministry provided the following information:

> "An Inter Ministerial committee was formed by MoP&NG on the directives of Cabinet Secretariat as per O.M.No. 491/2/1/2012-Cab.III dated 4th May 2012. The mandate of the Committee was to get one time all inclusive clearances for the exploration blocks from different Ministries/agencies prior to as well as later than offer of blocks for E&P activities related to oil and gas, CBM, Shale Gas, Oil Shale, Gas Hydrate in onshore and offshore areas for the activity of survey, drilling and development work. The Committee comprises of:-
>
> | | | | |
> |---|---|---|---|
> | a) | Cabinet Secretary | - | Chairman |
> | b) | Home Secretary | - | Member |
> | c) | Foreign Secretary | - | Member |
> | d) | Defence Secretary | - | Member |
> | e) | Secretary, D/o Research & Development (MOD) | - | Member |
> | f) | Secretary, Dept. of Space | - | Member |
> | g) | Secretary, M/o Forests & Environment | - | Member |
> | h) | Secretary, Department of Legal Affairs | - | Member |
> | i) | Secretary, M/o Coal | - | Member |
> | j) | Secretary, M/o Petroleum & Natural Gas | - | Member Convenor |
>
> Directorate General of Hydrocarbons was inducted as special invitee."

1.77 When specifically enquired as to whether MoP&NG/DGH had taken into account the concerns of other Ministries while offering of blocks under NELP and laying conditions of exploration, the Ministry furnished the following details:

> "Before offering the Blocks for E&P activities DGH carves out large prospective areas sedimentary basin-wise and send it to different Ministries/agencies like MOD, MHA, MOEF, MEA, DOS and Survey of India for their clearance. After getting clearance from these Ministries/agencies final blocks are carved out for final offer in the NELP rounds. Conditions for exploration in these blocks are given to operator at the time of intention of award of block for exploration. Also all conditions for exploration are given in writing to the operator at the time of Notice Inviting Tender/award of lease.
>
> Before offering the Blocks for bidding under NELP, in principle clearance is obtained from different ministries/department including MOEF and MOD, based on block coordinates, protected areas etc. However, after bidding, the operator has to apply directly to MoEF for various clearances depending on final block location with coordinates , details of activities proposed etc".

Exploratory Activities and Production Sharing Contracts

1.78 When enquired as to how does the Government/ DGH ensure the achievement of projected production levels provided in Production Sharing Contracts, and the process/steps followed by the Govt./DGH in the event of non-achievement of the committed or targeted production, the Ministry submitted the following information:

> "Presently there are 39 fields on production in PSC regime. All the companies are required to submit their production forecast for the year in the beginning. This production profile is to be approved by the Management Committee. The profiles submitted by companies are evaluated in DGH in line with the approved development plan and past performance. The actual production against the approved targets is continuously monitored by way of daily/weekly/monthly reports submitted by the operator from the producing blocks/fields
>
> In case of lesser production against envisaged targets the reasons for shortfall are sought from the operator for review at DGH and the companies are suggested for applicable mid course correction. If required the Ministry is informed for necessary intervention on behest of DGH with a view to ensure uninterrupted production as per the approved targets".

1.79 On being enquired as to whether DGH has legal officials in the organization to vet and interpret Production Sharing Contracts, the Ministry stated as under:

> "All the officers in DGH are on deputation from Oil PSUs. Presently, 4 officers from legal discipline from PSUs and 1 consultant from legal background are working in the legal department of DGH to vet and interpret Production Sharing Contracts including vetting of all other documents".

1.80 Also, enquired about the presence of officials in DGH with finance background to deal with financial aspects in Production Sharing Contracts, the Ministry has submitted as under:

> "Yes, presently there are 11 officers from finance discipline deputed from Public Sector Undertakings and 1 consultant from finance background to deal and analyse financial aspects in the Production Sharing Contracts".

1.81 When specifically asked about the decision making mechanism available for taking decisions in DGH, the Ministry stated as under:

"There is a proper chain of monitoring and supervision of exploration and Development (including production) activities at DGH which starts with the nodal officer appointed for a particular given block/field of exploration/ production regime and culminated internally at the apex of management which consists of executive directors and DG, DGH. The usual chain of monitoring and other decision making mechanisms in practice are described as under:

- All the technical, contractual, miscellaneous proposals submitted by operator are received by the concerned Nodal officers. Nodal officers initiate the process of examination/review/vetting of the proposal providing other required details through their concerned coordinators.

- After being reviewed by Coordinator for the adequacy of information of the proposal, they are forwarded to the concerned technical department depending upon the nature of proposal/request received from the operator by the coordinator assigned to the nodal officer. The various technical sections at DGH are as under:

i. Production Sharing Contract (Contractual Matters within the purview of PSCs in exploration phase)
ii. Producing Fields (Contractual Matters within the purview of PSCs in development & production phase)
iii. National Oil Company Monitoring (NOC) (Matters concerning with review of exploratory and development operations of NOCs within nomination regime)
iv. Geology & Geophysics including Petrophysics (All technical matters related to geological and geophysical aspects)
v. Reservoir (All technical matters related to reservoir, production profile etc.)
vi. Production (All technical matters related to production)
vii. Geophysical Data Acquisition (Matters concerning with geophysical data acquisition)
viii. Field Development Plan (FDP) (Matters concerning with field development plan and declaration of commerciality (DOC) in blocks and fields)
ix. New Exploration Licensing Policy (NELP) (Identification, preparation of data packages for prospective areas to be offered for exploration and development)
x. Alternate Energy (Matters concerning with National Gas Hydrate Program & Shale Gas)
xi. Coal Bed Methane (CBM) (Matters concerning with CBM)
xii. Drilling & Safety (Matters concerning with drilling operations and safety)
xiii. Environment (Matters concerning with environmental issues)
xiv. National Data Repository (NDR) (Matters concerning with the set up and implementation of NDR)
xv. Materials Management (Matters concerning with material management)
xvi. Human Resources (HR) & Administration (Admn.) (Matters concerning with HR & Admn.)
xvii. Essentiality Certificate (EC) (Matters concerning with review and grant of EC)

xviii. Legal (Matters concerning with legal issues)
xix. Information Technology (IT) (Matters concerning with IT)
xx. Contract Finance (Matters concerning with the financial aspects of the contracts)

- During the review by concerned technical sections (s), additional information may be sought internally or from the Operator. If required, concerned representatives of the companies are also called for personal interaction for clarification of queries and expediting the review/approval process.

- After due examination by be concerned technical section(s) the recommendations are forwarded to the coordinator. These recommendations are put forth for information, review and approval to the concerned head of department to which the proposal/request pertains.

- All major contractual, technical and miscellaneous recommendations firmed up are put up before respective concerned Executive Director and/or Director General. Subsequently these decisions are communicated to the Operator, MOPNG as the case may be.

- Apart from above, the Administrative Council of DGH approved the formation of Executive Committee (EC) of DGH for enabling collective decisions on substantive issues including advice on policy & review matters arising from time to time. It was envisaged that EC would consist of Dy. Director Generals from exploration, reservoir and development, technical, legal and finance and will be headed by Director General, DGH as its Chairman. At present though there are no Dy. Director General level officers, EC is being run by the next level officers.

- Also, for quick, uniform and just resolution of complex contractual issues like Force Majeure and Excusable delay, a dedicated core group has been identified who review the case and put forth their recommendations before the Apex management before final approval at DGH".

1.82 When asked as to whether the Govt. has empowered Directorate General of Hydrocarbons to decide on the basis of recommendations of the Management Committee related to the operationlisation of Production Sharing Contracts (PSC), the Ministry provided the following information:

> "In order to debottleneck the existing Production Sharing Contract (PSC), recently “Policy Framework for Relaxations, Extensions and clarifications at the Development and Production stage under PSC regime for early Monetization of hydrocarbon discoveries” has been approved by Government of India. This is a reform initiative which has helped in monetization of some of the pending discoveries, led to resolution of various long pending operational issues which were hampering E&P operations and create better climate for investment. These

reforms do not change the basic structure of the PSC and have been approved in the overall interest of the energy security of the country. DGH has been empowered to take various decisions based on the Management Committee (MC) approval.

The salient features of this Reform Measure are as follows:

- Extension of Appraisal period for submission of Declaration of Commerciality (DOC) in respect of Hydrocarbon discovery.
- Extension of time period for submission of Field Development Plan (FDP) after review of DOC by the Management Committee.
- Reduction in Minimum Work Program (MWP) in case a block or its part is not available for exploration activities consequent to denial of permission by Government Agencies.
- Swapping of 2D and 3D Seismic Minimum Work Programme, on the request of the operator.
- In cases where the committed Minimum Work Programme of any particular exploration phase is not completed, entry into subsequent exploration phases, would be permitted after paying cost of unfinished MWP of previous phases.
- Condoning delays in submission of notice for entering into next phase.
- Condoning delays in submission of Annual Work Programme and Budget and the Appraisal work programme.
- Permission for drilling of Appraisal Wells after submission of DOC.
- Probing additional reservoirs during appraisal programme.
- Acceptance of discoveries for which notification to the Government has not been made or notification for testing has not been provided as prescribed.

DGH has resolved more than 40 long pending issues after adoption of these guidelines".

1.83 When asked as to whether the role of Management Committee is delaying the work in case of disagreement in Management Committee, the Ministry submitted submitted as under:

"The Management Committee has representatives from contractors & Government.

Functions of Management Committee (MC):

MC is basically a reviewing authority and it has advisory functions in various matters as defined in the PSC. There are a number of areas defined in the PSC where MC has to accord approval / decisions in important matters. For the sake of brevity listed below are only few parameters where MC has to take the decisions:

(a) MC Review and approval of matters: MC will review and approve matters relating to

(i) Annual Work Programme & Budget in respect of Exploration Operations as well as Development Operations, Production Operations & any revision or modification thereto

(ii) Proposals for surrender or relinquishment of any part of the Contract area by the Contractor (iii) Proposals for an Appraisal Programme or revision or additions thereto and the declaration of a discovery as a commercial discovery in case of Exploratory Blocks and proposals for the approval of the Development Plan or revision to a Development plan,

(i) Determination of Development area
(ii) Appointment of Auditors
(iii) Matters referred by Government to the MC for its considerations and reasoned opinion etc.

(b) Methodology of operations/ decision making of the MC: The broad methodology of operation/ decision making by MC are as under:

(i) MC shall not take any decision without obtaining prior approval of the Government where such approval is required under the Contract or any applicable law (including rules and regulations) of India . The MC shall obtain such approval /decision and convey the same to Contractor with utmost expedition.

(ii) MC shall meet atleast once in every six months during Exploratory Period & thereafter atleast once in three months.

(iii) Notice for MC meeting to be issued atleat 28 days prior to the date fixed

(iv) All matters requiring approvals of the MC shall be generally approved by a unanimous vote of the MC members. (In case of disagreement there are methods defined in the PSC to resolve)

From above, it may be noted that the Management Committee has a set of procedures, directives & authority to accord approval / decision in the various issues / activities.

Thus it is imperative that unless a decision/approval is accorded against an issue which has been forwarded to MC for approval/decision, the subsequent operations/ activities/action cannot be carried forward and thus it might result in delay. The approvals may sometimes get delayed on account of differing views amongst the MC members.

Furthermore, as per terms of reference, MC shall not take any decision without obtaining prior approval of the Government where such approval is required under the Contract or any applicable law (including rules and regulations) of India. Thus, MC may at times has to wait for the approval of the Government without which MC is not empowered to take decision which may delay or uphold the work".

1.84 Stringent time lines in PSC for various activities from exploration to development exist and if violated cannot easily be resolved. When the Committee sought to know whether there was any plan to review PSC, the Ministry submitted the following details:

"Under the NELP regime, timelines are specified in the respective Production Sharing Contracts (PSCs) for various activities from discovery to development, such as:

i) Notification of Discovery.

ii) Declaration of Potential Commercial Interest.

iii) Appraisal of Discovery.

iv) Declaration of Commerciality (DoC) for review by the Management Committee (MC), comprising of the representatives of the contractors and the Government.

v) Submission of Field Development Plan (FDP).

vi) Commencement of Development after approval of FDP by MC.

The above timelines may vary for different NELP rounds. The Contractor is required to adhere to the above timelines specified in PSC as a water tight compartment. As a reform measure, “Policy Framework for Relaxations, Extensions and clarifications at the Development and Production stage under PSC regime for early Monetization of hydrocarbon discoveries” has been approved by GOI. These reform initiatives would help in monetization of some of the pending discoveries, lead to resolution of various long pending operational issues which are hampering E&P operations and create better climate for investment. The salient features of this Reform Measure are as follows:-

- Extension of Appraisal period for submission of Declaration of Commerciality (DOC) in respect of Hydrocarbon discovery.

- Extension of time period for submission of Field Development Plan (FDP) after review of DOC by the Management Committee.
- Reduction in Minimum Work Program (MWP) in case a block or its part is not available for exploration activities consequent to denial of permission by Government Agencies.
- Swapping of 2D and 3D Seismic Minimum Work Programme, on the request of the operator.
- In cases where the committed Minimum Work Programme of any particular exploration phase is not completed, entry into subsequent exploration phases would be permitted after paying cost of unfinished MWP of previous phases.
- Condoning delays in submission of notice for entering into next phase.
- Condoning delays in submission of Annual Work Programme and Budget and the Appraisal work programme.
- Permission for drilling of Appraisal Wells after submission of DOC.
- Probing additional reservoirs during appraisal programme.
- Acceptance of discoveries for which notification to the Government has not been made or notification for testing has not been provided as prescribed.

These proposals are expected to yield the following benefits:

- Monetization of some of the discoveries which are struck because of expiry of timelines.
- Additional discoveries in the appraisal period.
- Improvement in investment climate because of resolution of disputes between the contractors and the Government.
- Enhancement of production of oil and gas from these blocks.
- Preparation of a more robust FDP.

Major achievements of this policy as on 31.03.2015 are:

a. Under this policy about forty (40) long pending issues have been resolved since the commencement of the policy. This has enabled early monetization of Oil and gas discoveries in 2 blocks of GSPC, 2 blocks of ONGC and 1 block of Focus.

b. The decision taken in accordance with policy will further help in drilling appraisal wells after submission of DoC in five blocks of ONGC namely CY-ONN-2004/2,

AA-ONN-2001/1, KG-DWN-98/2, MN-DWN-98/3 and MN-OSN-2002/2. This will also help in probing additional reservoir extent and submission of robust field development plan in three blocks.

c. There were 12 blocks where clearances were not accorded in entire block area or in part of block area because of overlapping with special economic zone, reserve forest, naval exercise area, DRDO danger zone, national parks and firing range of Defence. The cases in 11 blocks have been resolved and the case in one block is under consideration.

d. The policy framework has also helped in taking technical decisions based in merits for swapping of 2D seismic work program with 3D seismic work program and vice-versa in five blocks".

1.85 On being asked about the contractor of the block being responsible to abide by the PSC provision for maintenance of ecological balance in coastal areas where exploration and production activities take place and the nodal agency to ensure ecological balance during such operation period, the Ministry submitted the following information:

"The Article -14 of the PSC relates to the Protection of the Environment and stipulates various steps to be initiated by the operator including compliance with requirements of applicable laws, employment of modern oil field practices for prevention and reduction of environmental damage.

The upstream oil companies are required to obtain the Environmental Clearances **(EC)** from the Ministry of Environment, Forest and Climate Change **(MOEF&CC)** under the Environmental Impact Assessment (EIA) Notification, 2006 and Clearance under Forest (Conservation) Act, 1980, if diversion of forest land is involved. For seeking EC, the operator has to submit the Environmental Impact Assessment Report directly to MoEF&CC and follow the detailed procedure mandated in the EIA notification, 2006. Similarly, for forest land diversion cases, the Rules framed under the Forest Act are followed.

The Exploration and Production of Oil and Natural Gas are governed by the provisions of the EIA notification, 2006 of the MoEF&CC. Environmental Clearance (EC) is given to the operator under this notification with necessary environmental mitigation measures for ecological conservation. The compliance to these conditions is monitored by MoEF&CC".

Production in KG-D6 basin

1.86 When specifically asked about the current status of KG-D6 production of natural gas and the adherence of the contractor to the advice of DGH, the Ministry provided the following information:

> "Natural Gas is being produced from MA & D1-D3 field of KG-DWN-98/3 field. On 25.11.2015, the gas from MA field was 4.04 MMSCMD (approx.) and from D1-D3 field it was 6.47 MMSCMD (approx.). The commercial production of gas from D1 & D3 gas fields commenced on 1st April, 2009. The oil and gas production from MA field commenced w.e.f. 17th September, 2008.
>
> Contractor has not drilled and connected the wells in the block KG-DWN-98/3 as per the approved plan i.e., "Addendum to Initial Development Plan" (AIDP). Out of the total 50 planned development wells, contractor has drilled only 22 wells and connected only 18 wells for production. Despite repeated DGH advice, the Contractor has not drilled and connected remaining wells as per the approved AIDP".

1.87 On being asked about details of the share of profit petroleum received by the government on KG-D6 discoveries by M/S Reliance Industries Limited and the total cost disallowed as decided by DGH, the Ministry submitted the details as under:

> "Profit petroleum of US$ 114.8 million has been received upto March 2014 by Govt. of India from the discoveries namely Dhirubhai1, Dhirubhai 3 and Dhirubhai 26 in the block KG-DWN-98/3.
>
> MoP&NG vide letter no. O-19025/4/2011-ONG-D-V dated 10.07.2014, has disallowed an amount of US $ 2,376 million from the cumulative development cost incurred by the Contractor as on 31st March 2014. This disallowance was computed based on the cumulative shortfall in production of gas vis-a-vis production estimates under the approved Addendum to Initial Development Plan (AIDP) of D1-D3 gas field in KG-DWN-98/3 block till 31.03.2014. On account of this disallowance, the Contractor has to remit the additional profit petroleum of around US $ 195 million to the Govt. of India".

1.88 When specifically devised a comparative analysis of ONGC and RIL in the field of production of natural gas in KG basin, the Ministry furnished the following details:

> "ONGC has not started any gas production in KG basin**.** Status of Discoveries made by ONGC & RIL in KG Basin is given below:

Status of ONGC operated Blocks in KG Basin

Operator/Block	ONGC Total	KG-DWN-2005/1	KG-DWN-98/2	KG-ONN-2003/1	KG-OSN-2004/1	KG-DWN-98/3	KG-OSN-2001/1	KG-OSN-2001/2
Discoveries which have been put on Production	0					3		
Discoveries which are under Development or on way to production	0					5		
Commerciality established (DoC Reviewed)	15		8	2	5			
Discoveries in Early Stage, DoC to be submitted	3		1		2			
Discoveries not pursued by Operator/relinquished/proposed for relinquishment	2	1	1			7	3	2
Discoveries that may be monetised under policy for "Exploration in ML area"	0					3		
Revised DoC to be submitted (As per "Policy for Testing Requirement" dt 13th May 2015)	4		4			2		
Total	24	1	14	2	7	20	3	2

Status of RIL operated Blocks in KG Basin:

Operator/Block	RIL Total	KG-DWN-2001/1	KG-DWN-2003/1	KG-DWN-98/1	KG-DWN-98/3	KG-OSN-2001/1	KG-OSN-2001/2
Discoveries which have been put on Production	3				3		
Discoveries which are under Development or on way to production	5				5		
Commerciality established (DoC Reviewed)	0						
Discoveries in Early Stage, DoC to be submitted	0						
Discoveries not pursued by Operator/relinquished/proposed for relinquishment	18	1	4	1	7	3	2
Discoveries that may be monetised under policy for "Exploration in ML area"	3				3		

Revised DoC to be submitted (As per "Policy for Testing Requirement" dt. 13th May 2015)	2				2		
Total	31	1	4	1	20	3	2

Gas production has commenced form KG-DWN-98/3 Block operated by RIL as detailed below:

- Production of oil from D26 (MA-oil field) commenced on 17.09.08
- Production of gas from D1D3 (Gas-field) commenced on 01.04.09

Current Status of gas production from the Block is given below (October, 2015)

Field	No. of wells flowing	Gas production rate (MMSCMD)	Oil production rate (BOPD)	Condensate production rate (BOPD)
D1 -D3	11	6.78	-	-
MA	4	4.53	4424	866

✓ Total Discoveries in the block: 20".

IOR/EOR schemes monitoring by DGH

1.89 When asked as to whether DGH has any role in monitoring of IOR/EOR scheme of national oil companies, the Ministry stated as under:

"Monitoring the performance of IOR/EOR schemes under implementation in major fields of NOCs is done at DGH. Quarterly performance reports for IOR/EOR projects under implementation at National Oil Companies are reviewed at DGH on regular basis".

1.90 In response to specific enquiry about the targets set and achievements made during 2013-14 under IOR / EOR projects for ONGC and OIL and also about the details of investments made in such projects, the Ministry furnished following details:

"IOR is commonly used to describe any process, or combination of processes, that may be applied to economically increase the cumulative volume of oil that is ultimately recovered from the reservoir at an accelerated rate. Enhance oil recovery (EOR) methods are used to recover that percentage of residual oil that cannot be captured by water flooding alone, or by the use of physical, mechanical, or procedural processes like Thermal, Polymer etc.

ii. Annual target setting for IOR/EUR projects is difficult. The targets and results of IOR/EOR processes are cumulative. In India National Oil Companies, ONGC and OIL have used IOR/EOR methods to sustain and enhance the production rates

from their mature fields. At present, several IOR/EOR projects are being implemented or are at different phases of implementation. 21 IOR/EOR projects of ONGC have been completed including 03 EOR projects at Balol, Santhal and Sanand. As per information received from ONGC cumulative incremental oil gain from these projects is 87.18 MMT as against plan of 112.85 MMT. Additionally, 05 IOR projects are ongoing in Heera & S. Heera Redevelopment Ph-II, IOR B-173A Field, Development of Western Periphery of MH South, Addl. Development of Vasai East and MH Redevelopment Ph-III.

iii. OIL has completed IOR/EOR projects in 15 reservoirs including two pilot IOR/EOR projects, Microbial Enhanced oil recovery and Polymer flooding in Zaloni field. Additionally, 14 IOR/EOR projects are underway and 07 more IOR/EOR projects planned for near future.

iv. During year 2013-14, IOR/EOR performance of ONGC/OIL in their nomination fields are as below:

Production through IOR/EOR		
IOR/EOR Gain	ONGC	OIL
Actual, MMT	7.52	1.13

1.91 The Committee enquired as to where does DGH sees itself in the coming years in augmenting domestic oil and gas production and asked about shortcomings and lacunae in the production sharing contracts of the Exploration & Production programmes, DGH furnished following details:

"The shortcoming and lacunae of our E&P programmes primarily arise from the shortcoming encountered during implementation of the Production Sharing Contracts. The same is reproduced as under:

1. Cost of unfinished work program:

a) Valuing the committed work program not done by the contractor is subject to challenge on the basis of computation.

b) The methodology of computation of cost of unfinished work programme is complex and result in higher amounts than the rates stipulated in PSC's of later rounds (NELP-VIII onwards) and is being disputed by the Contractors.

c) From NELP-VIII onwards, the amount is payable by the Contractor at specific rated stipulated in PSC.

d) The Bank Guar5antee amount is inadequate to recover the cost of unfinished work program.

2. Cap on cost recovery of exploration costs:

From NELP-V onwards, a new Article 15.13 has been inserted fixing upper limit for exploration costs (both activity wise cost and total cost-wise) limited to the cost estimates quoted by the Contractor during bidding.

Any cost recovery above the aforesaid cost estimate limit requires the approval of the Government based on the recommendation of the Management Committee.

3. Dispute over Expenditure figures:

Under Article 15 of NELP PSC, the Contractor is entitled to cost petroleum in respect of Exploration Costs, Development Costs and Production Costs incurred by the Contractor. Thus the cost petroleum is entirely based on the actual expenditure incurred duly audited by independent auditors. Although the basis of expenditure allowance under the PSC and under the Income Tax Act is similar, doubts in some cases have been raised by agencies like CAG on the authenticity of the expenditure claimed as cost petroleum.

4. Procurement:

There have been CAG audit exceptions on Contractors procurement of goods/services even from non-affiliated parties but still doubting under benefit to the contractor although under the PSC the procurement is funded by the contractors and procurement procedures are laid down.

5. 7-year tax exemption:

The applicability of tax holiday under section 80IB(IX) of the L.T Act in respect of gas produced under Contractor awarded up to NELP-VII has come under ambiguity due to lack of clarity in the definition of mineral oil.

6. Investment Multiple (IM):

Different methodologies adopted by different contractors for computation of IM may adversely affect GOI take. On this issue there has been arbitration/litigations on components of IM and related issues of profit sharing. CAG & Ashok Chawla Committee have adversely commented on IM.

7. Pricing of Crude Oil:

a) There is a possibility of reduction in GOI take when the transaction is with affiliates.

b) Pricing of crude oil is a matter between buyer and seller and there is no adequate mechanism to protect GOI interest.

8. Arbitration:

a) Foreign arbitral tribunals attempt to re-write the provisions of contract itself and take jurisdiction on fiscal issues

b) Contractors unilaterally take disputed amount without enforcement in Indian court

9. Role of MC:

Too many activities require interventions (review or approval) by Management Committee (MC), which may delay the progress of activities or put on hold the activities in case of disagreement in MC.

10. Delay in FDP implementation:

There is no remedy in PSC if a contractor delays/fails to implement the approval Field Development Plan (FDP). There is no specified timeline for commencement of production after approval of FDP.

11. Stringent Timelines:

There are too many stringent timelines for various activities form exploration to development, which if violated by the contractor, cannot be easily resolved as there is no remedy for such violations in PSC.

Role of DGH in augmenting domestic oil gas production-

DGH has been making constant efforts in brainstorming over the above mentioned shortcoming and ambiguities and facilitating to arrive at best possible way forward in close collaboration with MOPNG. The major efforts in this regard are as under:

i) In view of the same, Dr. C.R. Rangrajan Committee has recommended that "A uniform licensing policy to enable E&P operators to explore and extract all hydrocarbon resources covered under the Oilfields Regulation and Development (ORD) Act, 1948, and Petroleum and Natural Gas (PNG) Rules, 1959 under one PEL/PML, and one contractual regime will replace the NELP and CBM regime for the Contracts to be awarded in future. The uniform licence will enable the contractor to explore conventional and unconventional oil and gas resources including CBM, shale gas/oil, tight gas, gas hydrates and any other resource to be identified in future which fall within the definition of "Petroleum" and "Natural Gas" under PNG rules, 1959." A uniform licensing policy has been prepared at DGH and is under consideration by Government of India

ii) Present fiscal system of production sharing based on PTIM and Cost recovery/production linked payment will be replaced by a revenue sharing model based on an incremental production-based sliding scale combined with a fixed, price-sensitive scale subjected to approval by Government of India. The contractor shall pay biddable Government share of revenue (net of royalty), as per Revenue Sharing Contract (RSC). A model contract has been prepared at DGH in this regard which has been uploaded on its website and is under consideration.

With a view that more and more fields/blocks are put up on production, Operators are encouraged to venture into more efficient and effective technologies and all proposals of FDP and Doc are being monitored and reviewed expeditiously.

Also sincere efforts are being made by DGH in order to resolve the PSC related issues amongst Contractors if any so that the stalemate condition is resolved and the halted/delayed production is resumed.

Currently out of 26 sedimentary basins and deep offshore areas upto Exclusive Economic Zone **(EEZ)** covering an area of 3.14 million square kilometres, about 48% of the basinal area only has been appraised and a large number of sedimentary basins have either no/or scanty data and require additional geo-scientific data coverage and analysis for proper understanding. To address the same, following projects have been initiated by Government through DGH:

i. A project to reassess hydrocarbon resources in all sedimentary basins of India has been initiated. DGH is a member of the Multi Organisational Team **(MOT)** constituted for this purpose where the process of tendering for award of job in under progress through International Competitive bidding coordinated by ONGC, KDMIP.

ii. A project for appraisal of unapprised areas of all sedimentary basins of India has been initiated. Unapprised area in North East has been assigned to OIL India Limited whereas rest of the unapprised areas have been assigned to ONGC. The process of invitation of Expression of Interest and tendering procedures have been initiated in the respective areas which are coordinated by concerned National Oil Company **(NOC).** DGH is monitoring the progress of the project as an inter-phase between the NOCs and the MOPNG and is also holding technical interaction with ONGC & OIL on the subject matter.

iii. A policy on non-exclusive multi-client speculative survey for assessment of unexplored sedimentary basins through Service Providers is being implemented-DGH has been receiving and reviewing the proposals and forwarding it further for necessary clearances. It is also coordinating for its approval. Till date seven proposals have been forwarded to MOPNG for

further clearances from Ministry of Home affairs **(MHA)** and Ministry of Defence **(MoD)** out of which, provisional consent letter for five proposals has been issues on the basis of requisite permissions obtained from MHA and MoD.

Due to the fact that some discoveries are coming up on production, the Oil and Gas production is expected to increase especially Gas. However the decline in the mature fields will restrict the increase in future".

Practical Difficulties in the Implementation of Production Sharing Contracts

1.92 When asked about salient features of the proposed uniform licensing policy and the role of DGH in the policy, the Ministry submitted the following information:

- During the course of implementation of CBM Policy and NELP, it has been observed that unconventional hydrocarbon resources such as shale oil and gas are left unexplored, which could not be explored due to lack of policy /guidelines on exploration of shale oil and gas

- In order to make next bidding round more attractive, the Government is in the process of finalizing Uniform Licensing Policy (ULP) for award of hydrocarbon acreages with new contractual system and fiscal model.

- ULP will enable the contractor to explore conventional and unconventional oil and gas resources including CBM, shale gas / oil, tight gas, gas hydrates and any other resource to be identified in future which fall within the definition of “Petroleum” and “Natural Gas” under PNG rules, 1959 under a single policy regime.

The salient features of ULP are

I. Covering exploration for both conventional and unconventional Hydrocarbon resources

II. Proposed revenue sharing contract model

III. No investment by the Government

IV. Revenue Generation from first day of production.

V. 100% participation by foreign companies and participation through unincorporated Joint Ventures

VI. biddable Government share of revenue (net of royalty)

VII. no signature or production bonuses, State participation,

VIII. No submission of annual WP&B will be required

Role of DGH

- Uploading of required geo-scientific data in the NDR for all acreages under ULP to be offered through open Acreages Licensing System or otherwise
- prepare basin wise dockets
- prepare maps showing open acreages areas,
- prepare NIO and MRSC as per term and condition of ULP/ OALP".

1.93 When the Committee specifically sought a status report on programmes like Uniform Licensing Policy and Open Acreage Licensing Policy of the Ministry and the role of DGH in promoting the same, the Ministry submitted as under:

"Uniform Licensing Policy

In past, there had been a gradual shift in the E&P policy, from nomination acreage to New Exploration licensing Policy through International competitive bidding in 1997. Now a Uniform Licensing Policy **(ULP)** is being proposed to enable E&P operators to explore and extract all hydrocarbon resources covered under the Oilfields Regulation and Development (ORD) Act, 1948, and Petroleum and Natural Gas (PNG) Rules, 1959 under one PEL/PML. The proposed ULP will replace the NELP and CBM regime for the Contracts to be awarded in future. The uniform licence will enable the contractor to explore conventional and unconventional oil and gas resources including CBM, shale gas/oil, tight gas, gas hydrates and any other resource to be identified in future which fall within the definition of “Petroleum” and “Natural Gas” under PNG rules, 1959.

DGH role:

Based on the experience of Production Sharing Contract under NELP/Pre NELP regime and CBM contracts, DGH has given its inputs to MOPNG after reviewing the existing PSC towards covering the exploration and exploitation of all types of hydrocarbons under ULP.

Like NELP, DGH shall be coordinating for the generation of awareness and publicity of the ULP by way of conducting national and international roadshows and reaching out to competent national and international E&P companies.
With the past experience of handling the PSCs, DGH is advising on the bidding parameters such as, Mandatory Work Programme, Minimum Work Programme (MWP), Technical capability and the fiscal package of the blocks. DGH will prepare Bid evaluation criteria for work programme fiscal package as per the model.

Further, MOPNG has formed two committees Dr. Rangarajan Committee and Dr. Kelkar Committee to review different aspects of exploration and exploitation of Hydrocarbons in Indian Sedimentary basins. These reports are under consideration by Government.

Open Acreage Licensing Policy (OALP)

To accelerate the exploration programme in the remaining areas of Petroliferous sedimentary basins in the country which have not been awarded so far, a different policy framework- Open acreage Licensing Policy (OALP) has been conceptualised to open up the entire Petroliferous sedimentary area in a short span of time for E & P companies round the year.

The utilization of Open Acreage System in India would be a strategic shift from the successful National Exploration Licensing Policy (NELP) mechanism. The Open Acreage System would enable domestic and international upstream oil and gas companies to select areas of their interest from the available acreage in grid pattern. The available open acreages grids will be opened round the year and prospective bidders can select the areas which would be put on offer through international Competitive bidding as per Government approved Policy.

DGH role:

National Data repository (NDR) is a pre-requisite for OALP as this would enable prospective bidders to view the data online and select the areas which can be put on offer under ICB. Work for establishment of NDR is going on fast pace and initial work has already been completed. Work for populating NDR with geo-scientific data has also been started and opening of data rooms at NDR is being scheduled shortly".

Dispute Settlement by DGH

1.94 In response to specific query by the Committee as to how DGH handles its legal matters with legal professionals in the organisation, the Ministry submitted the following details:

"The officers in the legal department are legal professionals. All the legal matters pertaining to the Ministry of Petroleum & Natural Gas (MoP&NG) and Directorate General of Hydrocarbons (DGH) are being handled by this department. The legal functions performed by these legal professionals as under;

- Legal Scrutiny of Production Sharing Contracts and Amendments thereto, Joint Operating Agreements, Crude Oil Sale Agreements etc. and Commercial Agreements entered into by Directorate General of Hydrocarbons.
- Assisting in preparation of various policies framed by MoP&NG.
- Legal opinions on the issues referred to legal section by various departments in connection with activities being undertaken by DGH.
- Vetting of Contracts (viz. Tender documents floated by DGH and contracts executed thereafter), Memorandum of Understanding (MOU) with various countries.
- Vetting of Bank Guaranties, Financial and Performance Guaranties, proposals for Assignment/transfer of Participating Interest, Extension of Exploration Phases and Amendments to PSC's during the contract period and thereafter.
- Legal comments on behalf of DGH to MOP&NG in connection with interpretation of Petroleum Laws & relevant rules framed there under and on other issues which are being referred to DGH by MoP&NG from time to time.
- Preparation of legal notices, vetting of correspondence with contractors in connection with various issues being raised under PSC's from time to time.
- Vetting of cases relating to Force Majeure, Excusable Delays etc.
- Framing of strategies for handling various legal disputes based on the current scenario.

In addition to above, the legal team also handles various Arbitration and Court matters, National as well as International with the guidance of MOPNG and while handling such legal matters, the legal team performs the following activities:

- Scrutiny of the various claims of the contractors and advice GOI/DGH for further course of action to protect the interest of the GOI, which includes appointment of

Arbitrators, Attorney General (AG), Solicitor General (SG), Additional Solicitor General, Senior Counsels, Advocates or Law Firms etc. on behalf of GOI as per requirement.

- Scrutiny of legal disputes.
- Briefing the counsels on various legal disputes, assist them for preparation of the Statement of claims, Statement of Defence, Counter Claims, Evidences, Written Submissions and all other allied pleadings.
- While performing the aforesaid activities, legal team of DGH also attends the hearings before Arbitral Tribunals or Courts along with counsels.
- Liaison with MoP&NG to appraise the development in the matters and to obtain necessary approvals from MoP&NG.
- Legal scrutiny of Arbitration Awards or Court judgments for advising further action.
- Scrutiny of the Professional Bills of the Arbitrators/Counsels and processing the same for the payments".

1.95 When asked as to who represents DGH in the arbitration proceedings, the Ministry has submitted as under:

"DGH is represented in the arbitration proceedings through Attorney General (AG), Solicitor General (SG), Additional Solicitor General Govt. Standing Counsels, reputed Sr. Advocates, Advocates and Law Firms".

1.96 When asked to furnish the details of disputes and arbitration proceedings where DGH is involved, the Ministry provided the following information:

SL. NO.	PARTICULARS	ARBITRATION/ COURT
1.	Reliance Industries Limited, British Gas Exploration Pvt. Ltd vs. UOI - Panna Mukta Tapti Field	Arbitration
2.	Reliance Industries Ltd. vs. UOI -Four Relinquished Blocks- KG-OSN-97/3, KG-OSN-97/4, MB-OSN-97/1, GK-OSN-97/1	Arbitration
3.	Reliance Industries Limited vs. UOI -KG-DWN-98/3 (D-6)	Arbitration
4.	Reliance Industries Limited vs. UOI - Gas Pricing uidelines	Arbitration
5.	Videocon Industries Limited vs. UOI - ONGC Carry under Ravva PSC	Arbitration
6.	Assam Company India Limited vs. UOI -Amguri Field	Arbitration

SL. NO.	PARTICULARS	ARBITRATION/ COURT
7.	Hindustan Oil & Exploration Company VS. GOI -CY-OSN-97/1	Arbitration
8.	NIKO Resources VS. UOI -Hazira Field	Arbitration
9.	CAIRN ENERGY VS. GOI -ONGC Carry under Ravva PSC	Arbitration
10.	Videocon Industries Limited Vs. UOI -ONGC Carry under Ravva PSC	Federal Court of Malaysia
11.	GOI vs Cairn Energy & Ors. - BDC issue under Ravva PSC	Federal Court of Malaysia
12.	Stephenson Harwood vs. UOI -Issue relating to fees of the Law Firm	Queen's Bench division
13.	Joshi Technologies Industries vs. UOI -Dholka & Wavel Fields.	Supreme Court of India
14.	UOI vs. Ishar Gas Oil -Evaluation of Bid under NELP IX.	Supreme Court of India
15.	Shri. Gurudas Dasgupta vs. UOI & Ors. -PIL in D-6 Block	Supreme Court of India
16.	Common Cause & Ors. vs. UOI -PIL in D-6 Block	Supreme Court of India PIL
17.	SELAN Vs. UOI -Lohar Field	Delhi High Court
18.	NIKO Resources Vs. UOI -Hazira Field.	Delhi High Court
19.	UOI vs. HARDY -CY-OS-1	Delhi High Court
20.	MOP&NG vs. Great Eastern Energy Corporation Limited -CBM Block - Raniganj	Delhi High Court
21.	WELSPUN Natural Resources Vs. UOI & Ors. - Invocation of BG CB-ONN-2004/5	City Civil Court at Ahmedabad, Gujarat
22.	WELSPUN Plastics Vs. UOI & Ors. - Invocation of BG AA-ONN-2004/4	City Civil Court at Ahmedabad, Gujarat
23.	Krishna Godavri Delta Parikshana Samiti & 2 others vs. UOI -PIL for Land subsidence.	High Court of Andhra Pradesh
24.	UOI vs. ACIL -Amguri Field	Sibsagar District Court, Assam
25.	ONGC vs. UOI & Others. -KG-DWN-98/2 (D-6)	Delhi High Court
26.	M/S Manali Petrochemicals Ltd. Vs. UOI & Ors. -Issue relating to Excise Exemption Certificate	Madras High Court
27.	Union of India Vs. Government of NCT of Delhi & Ors. KG-DWN-98/3 (D-6)	Delhi High Court
28.	GEECL vs. UOI -CBM – MG-CBM-2008/IV	Delhi High Court
29.	Cairn India Ltd. Vs. UOI (Enforcement of Award dt 18.1.2011 in BDC issue	Delhi High Court
30.	SHIV-VANI Vs. DGH -Terminating Geological Survey Contract	Arbitration
31.	DGH Vs. ODL -Issue related to demobilization cost for the ship hiring for Gas Hydrate.	Delhi High Court
32.	DGH vs. New Shine Star Manpower - Issue relating to siphoning of Provident Fund by the contractor.	Noida City Civil Court
33.	DGH Vs. Aambience Aambience vs. DGH -Issue relating to hiring of office building for DGH.	Delhi High Court

1.97 When specifically asked about the number of disputes pertaining to execution of Production Sharing Contracts, the Ministry stated as under:

> "Out of 33 matters listed above, 29 matters (from serial no. 1 to serial no 29) are pertaining to execution of PSCs"

1.98 Referring to some of the media reports, DGH has submitted suggestions to the Ministry of Petroleum and Natural Gas for streamlining of dispute resolution mechanism. The Committee wanted details of strategy note for a point-wise follow-up action taken on various suggestions included in the note. The Ministry submitted the following details:

> "A strategy/approach note for dealing and minimising the arbitration cases/ disputes against Government has been submitted to MoP&NG for consideration. Proposed strategy note by DGH is attached at **Annexure - 10."**

1.99 When asked regarding the options available at present with operators who are aggrieved by the decision of DGH, the Ministry submitted as under:

> "Operators who are aggrieved by the decision of DGH have option to invoke Arbitration/legal course".

1.100 When asked about by the cases that have been referred to courts due to failure of arbitration, the Ministry submitted as under:

> "There are 8 cases wherein party to the arbitration being not satisfied with award passed by arbitral tribunal approached to court against award.
>
> There is one more arbitration case which pertains to DGH, however, Union of India (UOI) was not a party to arbitration and award passed by tribunal has been challenged in court by DGH**"**
>
> As for the steps that are being taken to empower DGH with quasi judicial powers accompanied by an appellate tribunal for fast and effective dispute resolution, the Ministry has submitted as under:
>
> "Resolution for creation of DGH notification dated 8th April 1993 does not envisage empowering DGH with quasi-judicial powers accompanied by an appellate tribunal. Presently, there is no proposal under consideration of Government to empower DGH with quasi-judicial powers accompanied by an appellate tribunal".

1.101 When asked about the steps taken by DGH to find a conciliatory way out to avoid resorting to foreign arbitral tribunals by operators, which are inclined towards rewriting the provision of contract affecting adversely the Government share, the Ministry provided the following information:

> "A strategy/ approach note for dealing and minimizing the arbitration cases/ disputes against Government have been prepared by DGH which is under consideration at MoP&NG. Suggestions made by DGH regarding reducing the arbitration cases against government are given below:

1. In order to reduce arbitration arising out of disputes, it is important to have a clear, sound, fair and transparent decision making process which will clarify who decides what, as well as the extent of their authority and discretion.

2. In most of the cases arbitrators have considered contractor's views more on technical merits vis-à-vis contractual merits. There is a need to relook in the process for dealing a dispute at the initial stage itself.

3. DGH proposed for adopting two prong strategies. The cases, which may result in dispute, can be referred to a multi disciplinary team (MDT) in DGH at the first stage to study all the aspects of dispute with open mind. The officers dealt the dispute earlier will have observatory role in explaining the case to the MDT. In case the MDT has differing views then the issue to be raised to 2nd level. At second stage, the report of MDT can be examined by Executive Committee of DGH consisting of DG, Executive Directors and FA&CAO (recently formed). The decision of EC will be final on any dispute arising in the block/ field.

4. DGH may take the opinion of Advisory Council, where larger stakes are involved. If Advisory Council suggests taking the help of external expert in dealing the dispute, DGH will do so in prompt manner. Timelines for all the activities for dealing the dispute will be fixed so that it will not take more than 60 days in taking final decision on the case in DGH.

5. If the case is not resolved, then DGH will suggest the Government to go for the sole expert at the first instance as provided in the PSC for the matter to be referred to be Sole Expert. DGH will prepare beforehand a list of sole experts in various fields for approval of the Government.

6. Disputes, which are not resolved following the above steps will only, be sent to Government for acceptance of arbitration".

Site Restoration Activities under PSC

1.102 On being asked about whether site restoration guidelines are applicable to all exploration blocks/fields or have exclusive applicability on petroleum operations under PSC only, the Ministry submitted the details as under:

> "As per Rule 22 (2) of Petroleum and Natural Gas Rules 1959, at any time within six months after determination of the license or the lease under these rules or within such further time as the Central Government or the State Government , as the case may be, may allow, the former licensee or lessee may remove or dispose of and petroleum recovered, during the currency of such license or lease, and all stores, equipment, tools and machinery and so much of the improvements on the land covered by the license or the lease as the State Government may permit.
>
> In view of above, the site restoration guidelines are applicable to all exploration blocks/fields irrespective of the regime under which the petroleum operations have been undertaken".

1.103 When asked about exploration blocks/fields under nomination and pre-NELP regimes which are restored to their earlier state, and also whether contractors are issued certain directions in that regard, the Ministry submitted the following details:

> "The exploration blocks/Fields under nomination and Pre-NELP regimes are restored to their earlier state as per existing rules and regulations/guidelines. As far as PSC regime is concerned, only one field namely Matar has been relinquished and site is restored to its original condition before handing over the same to the field owner. The site was inspected by DGH and OISD before final handing over.
>
> However, DGH has appointed an international consultant namely TSB Offshore, USA for framing the comprehensive guidelines for site restoration for offshore and onshore fields. The report has been submitted and is under evaluation for necessary notification. Once notified, these guidelines will be applicable for all the fields irrespective of NOCs or private companies".

1.104 On being asked about site restoration fund created for producing fields under PSC provisions and its purpose, specific responsibilities and source of funding for the same, the Ministry has submitted following details:

"The details of the Site Restoration Fund have been formulated by GOI as "**Site Restoration Fund Scheme 1999".** The GOI order is self explanatory and is reproduced below:

Quote:

The Contractor shall prepare a proposal for the restoration of site including abandonment plan and requirement of funds for this and the annual contribution. This will be submitted along with the annual Budget for the consideration and approval of the Management Committee. The annual contribution shall be deposited by the Contractor in the Site Restoration fund which will be established, in accordance with the scheme notified by the Government.

For this purpose, the annual contribution to Scheme shall be calculated based on unit of production method i.e. Reserve to Production Ratio.

Unquote:

The referred order is attached at **Annexure-11".**

1.105 When enquired about salient features of guidelines regarding the utilisation of site restoration fund by operators of the block after cessation of petroleum operations along with details of the exploration sites that have been restored till date, the Ministry submitted the information as under:

"The details in this regard as per Model Production Sharing Contract of NELP IX are as under:

Quote:

Site Restoration" shall mean all activities required to return a site to Its state as of the Effective Date pursuant to the Contractor ' s environmental impact study and approved by the Government or to render a site compatible with its intended after –use (to the extent reasonable) after cessation of Petroleum Operations in relation thereto and shall include, where appropriate, proper abandonment of Wells or other facilities, removal of equipment, structures and debris, establishment of compatible contours and drainage, replacement of top soil, re-vegetation, slope stabilization, in-filling of excavations or any other appropriate actions in the circumstances.

Unquote:

Further, as per the Model Production Sharing Contract of NELP IX under the Article 'Protection of Environment':

Quote:

On expiry or termination of this Contract or relinquishment of part of the Contract Area, the Contractor shall:

(a) subject to Article 27, remove all equipment and installations from the relinquished area or former contract Area in a manner agreed with the Government pursuant to an abandonment plan; and

(b) perform all necessary Site Restoration in accordance with modern oilfield and petroleum industry practices and take all other action necessary to prevent hazards to human life or to the property of others or the environment

Unquote:

In this regard Government of India has constituted a committee vide MoPNG OM no. O-23011/75/2013-ONG-I dated 20.01.2014 under the Chairmanship of DG, DGH for formulation of Site Restoration guidelines for petroleum operations. Currently an internationally reputed firm is working as a consultant.

As on date there is no production site where petroleum operations have ceased under PSC regime hence no Site Restoration activities have been carried out so far. However in the exploratory blocks which have been relinquished, Site Restoration activity with regards to wells drilled, as mandated, has been carried out by Operator. The plug and abandonment of wells are a regular practice which is carried out by Operators as per the extant rule".

1.106 The Committee was given the following information by DGH on Norms for Field abandonment and Site Restoration

A fourteen member committee was constituted in 2014 to prepare site restoration guidelines with the following objectives:

- To identify global best practices for Site Restoration after cessation of petroleum operations.
- To develop guidelines for Site Restoration for onland and offshore oil & gas fields.
- To develop the Standard Operating Procedures (SOP) for abandonment and site restoration for onland and offshore oil & gas fields.

An international consultant M/s TSB Offshore was awarded the contract to help prepare the committee the guidelines for site restoration. The Consultant has submitted its final report on 31.07.2015. The site restoration guidelines are currently being prepared based on the report and considering stakeholder's comments. OISD and DGMS are the nodal agencies to implement Site restoration guidelines in association with DGH. The cost of the project is US$ 1,20,000 and is funded by DGH budget.

Good International Petroleum Industry Practices (GIPIP)

1.107 The Committee observe that DGH had constituted Standing Committee on GIPIP to identify the areas requiring codification of good international practices and to prepare national codes for petroleum operations and the work was assigned to M/s Petro Tel,

USA and it was to submit its first report by mid 2015.In that regard, when asked about the submission of this report alongwith details of key areas identified for codification and the commencement of codification, the Ministry submitted the following details:

"The Consultant appointed by DGH, i.e. PetroTel, USA has submitted the final report on Good International Petroleum Industry Practices (GIPIP) on 14.07.2015, which has been sent to all the members of the inter-ministerial and industry "Standing Committee" constituted by MoP&NG.

The key areas identified for codification are as under:

1. Exploration

a) Geophysical Surveys-Best Practices
i. 2D API, 3D API, HR-3D, HD-3D, Gravity and Magnetic data, Geochemical Sampling, Aeromagnetic data

b) G&G-Best Practices
Geological model (reservoir wise) comprising of
i. Petro-physical parameters-log derived and laboratory data derived
ii. Well log correlations
iii. Geological maps (porosity, thickness, saturation, fluid contacts, boundary/faults)
iv. Resource/reserve estimation
v. 3D volumes/computer modeling
vi. Heterogeneous 4D surveys to be invariably carried out to locate by-passed oil, if any.

c) Global Oilfield practices for the alternate/ substitute data types against the contract committed data types of the Minimum Work Program (MWP) bidded by the contractor

d) Procedure for calculating cost of Unfinished Work Program

e) Standard guidelines, if any, on the type of tapes/ media for the Operators to submit their acquired/ processed/ interpreted data.

f) Choice of Accounting System (Successful Efforts, Full Cost)

g) If there is any standard practice worldwide for sending the geophysical data abroad online for processing/ interpretation

h) Drilling- Best Practices
i. Defining attainment of exploration objective during exploratory drilling
ii. Applicability of IADC, API, IWCF guidelines
iii. Type of drilling –Vertical, Inclined, Horizontal, Multilateral, Casing Policy, Cementing Policy, Mud Policy, LWD/MWD
iv. International definition of "Basement"

i) How popular is the phenomenon of “Stopping the clock internationally”?

j) Data acquisition of adjoining areas to get a better understanding of regional geology.

k) Continued Exploration throughout the life of PSC.

l) Work Program approval process and best practices with respect to bid, budgeted and actual cost in PSC regime.

2. Discovery

a) Norms for area demarcation for Development, Discovery and Mining Lease

b) Norms for declaration of “Discovery”, “Commercial Discovery” and “Potential Commercial Interest (PCI)” and its acceptance by regulators.

c) International norms for well flow tests such as DST and any other test procedures in open hole, cased hole, gravel pack, frac pack required for evaluating or approving the “discovery”.

d) Standard activities usually conducted between hydrocarbon discovery and Declaration of Commerciality (DoC).

e) How to reduce timelines between discovery(ies) to delivery period (commercial production)?

f) Best practices on maximum time allowed to the contractor to retain the discovery area for discoveries not monetized.

3. Appraisal

a) Codification of International best practices regarding various methods of appraisal considering the extent of reservoir, hydrodynamic systems and connectivity, different fault blocks.

i. Is an Appraisal program always required?

b) Whether during appraisal of a discovery, the Contractor can explore other reserves/pools?

c) Can the contractor take up drilling of appraisal/exploration wells during Pre-development period for further improved understanding of resources, which helps in better development plan?

d) Are pre-development activities like sea bed surveys (geophysical, geo-mechanics and geo-hazards studies) / FEED required / permissible / possible during appraisal period / post Declaration of Commerciality (DOC)?

4. Declaration of Commerciality (DoC)

a) Data requirement at the time of submission of DoC, Field Development Plan (FDP) ,viz. Drilling, exploration and Pre-development proposals which is comprehensive and transparently known to operator and approving body in advance so that the entire dataset is submitted in single instance

b) Strategy for allowing DoCs on 'point forward basis' or 'sunk cost consideration' in case of small reserves for exploiting marginal fields, which are otherwise not economically viable.

c) Internationally available guidelines for classification and evaluation of resource and reserve estimates and auditing

d) What are the ranges of technologies that constitute 'Reliable Technology' to establish reserves with 'Reasonable Certainty' under SEC criteria? How do these criteria relate to IFRS reporting, SPE/WPC –PRMS and Russian, Canadian or Norwegian reserve classification?

5. Field Development

a) Practices regarding exploitation/development of reservoir and mid-course correction for onland, shallow water, deep water and ultra-deep water fields.
i. International norms for monetization of reserves in probable & possible categories.
ii. Is implementation of Improved Oil Recovery/ Enhanced Oil Recovery techniques mandatory?
iii. To encourage EOR activities on mature fields, should government's enacted special incentives be given to encourage investment?
iv. Is a minimum ultimate recovery specified by any regulations/ authorities – international norms?

b) Practices for prompt and orderly field development

c) Preparation of plans for joint/integrated development and operation for several discoveries

d) Best practices on Unitization of discoveries in adjacent blocks

6. Production

a) International practices for submitting long term production profile and medium term production forecast and mid-course changes

b) Issues related to underproduction and overproduction from FDP approved production profile and suggested remedial measures based on international best practices

c) Standards on Well Completion requirements including deep water and ultra-deep water well completion strategies.
i. Completion Strategy: Self flow wells, Artificial Lift wells (SRP, ESP, PCP, GLV, Plunger Lift)
ii. Best practices on sand control measures – gravel pack, frac-pack etc.
iii. Best practices for well completions and equipments and material selections for sour services (H2S) and higher CO2 contents for oil/gas fields.

d) Best practices on Work over: well interventions and stimulations, especially deepwater well intervention, hydraulic and acid fracturing.

e) Best practices on facility: Onshore/Offshore/deep water/ultra-deep water facilities-collection, separation, processing, storage, compression, evacuation, effluent disposal

f) Quantity and quality measurement - oil, gas, water – applicable standards and best practices for measurement of petroleum
i. Hydrocarbon Delivery Point for sales- International norms
ii. International practice for reconciliation between petroleum produced & saved and petroleum sold.

g) Best practices for production, measurement and allocation in case of simultaneous production of different hydrocarbons (oil/gas, CBM, shale oil/gas) from the same wells or different wells in the same field.

h) Transportation of oil/gas/water- by tanker, pipeline – best practices

i) Well Production and Reservoir Pressure Performance reporting and evaluation practices
i. Influx studies, PVT studies
ii. Fluid properties and composition- oil, gas, water
iii. Guidelines for reservoir management for optimum exploitation rate and maximum recovery of reserves.

j) Best practices for testing individual production wells , especially sub-sea wells

i. Norms for Extended Well Testing (EWT)and disposal of oil/gas during testing periods.

k) International norms of gas flaring

l) Best practices on sourcing and storage of water for fracturing, disposal of produced and flow back waters.

m) Best practices to reduce environmental footprints by adopting drilling strategies in limited land areas

7. Testing, Analysis- Reservoir, Production-Best Practices

a) Core studies and special core analysis

b) Conventional- decline curve analysis

c) Simulation model generated

8. Health, Environment & Safety (HSE) / Abandonment

a) Best HSE practices in petroleum operations. Do’s and Don’ts in conducting each and every petroleum activity / operation to minimize the risk of Environmental Damage.

b) International timelines for various permissions related to environment clearances.

c) Preparation of Contingency Plans, Emergency Response Plan (ERP) and Disaster Management Plan (DMP) for Oil spills, Fires, Blow-outs, Accidents and Emergencies in accordance with International practices.

9. Procurement procedure

a) Contracts provide some guidelines for procurement. How much flexibility should be there for allowing the operator for purchasing something or some service on nomination basis? Is it possible to have a global data bank to have fair idea about the approximate market price of various items before allowing a purchase on nomination basis?

b) Standardization and ways of compliance of procurement procedures (Appendix-F of PSC) to the mutual benefit of the parties.

10. Others Areas

a) International requirements for reporting of details of E&P activities to ensure ethical operations / share market compliance.

b) Sharing of Infrastructure:

i. What are the typical contractual mechanisms and fee/tolling arrangements to share third party infrastructure?

ii. How third party infrastructure was introduced and promoted in key hydrocarbon provinces?

c) Are there certain unidentified gaps and ambiguities in the Indian PSCs / Contracts?

d) International norms for insurance for petroleum operations taken by contractor to provide for his liabilities and indemnify the Government

e) Global best practices for accounting procedures; inventories and records of assets.

f) Global norms for information security for E&P industry

g) Standards for IT and Data Management infrastructure.

h) Dispute resolution process

i) Practices regarding obligations of Govt. / Regulator in contract management.

j) Enabling regulations for unconventional hydrocarbons

k) General Guidelines on Tight Oil/Gas, CBM, Shale oil/gas exploration and exploitation strategies

l) Practices for extension of PSCs to extract maximum oil/gas for importing countries.

m) Best practices of the governing bodies of different fiscal regimes (like management committee in Indian PSC).

n) If subsequent to the award of contract, access to the area is restricted due to any reason, what are the best practices relating to rights and responsibility of contractor?

The consultant's report is under due diligence and examination by various agencies led by DGH. Upon finalization and due deliberations, it will be put up to the inter-ministerial and industry "Standing Committee" constituted by MoP&NG. Since it is a maiden effort to compile the best practices around the world and come out with national codes for petroleum operations, it is essential that the report is drafted taking into account all the aspects and observations of all the stakeholders, which is a time consuming process.

It is expected that the "Standing Committee" will approve the report on GIPIP by March 2016 to make its guideline applicable".

1.108 On being asked to update on GIPIP, DGH furnished the following information:

"Codification of Good International Petroleum Industry Practices.

The term "Good International Petroleum Industry Practices (GIPIP)" is used repeatedly in PSCs to specify that the contractors should adopt best industry practices in areas of Exploration, Development and Production activities. The **"Standing Committee on Petroleum Industry Practices"** was constituted by GOI vide MoPNG OM no. O-23012/8/2013-ONG-I dated **27.12.2013** with following terms of reference:

i. To identify the areas requiring codification of GIPIP

ii. Preparation of national codes for petroleum operations

iii. Review of codes every two years to update in line with evolution of international standards

The work has been carried out by PetroTel Inc., USA on 30.10.14 for identification of the following key areas for codification:

1. Exploration
2. Discovery
3. Appraisal
4. Declaration of Commerciality (DoC)
5. Field Development

6. Production
7. Testing, Analysis- Reservoir, Production-Best Practices
8. Health, Environment & Safety (HSE) / Abandonment
9. Procurement procedure
10. Others Areas

The consultant submitted its final report on 14.07.2015 which is under review by standing committee. The project cost is US$ 1.2 Million and is funded through DGH budget."

National Data Repository and DGH

1.109 On the issue of the role of DGH in National Data Repository (NDR), the Ministry furnished following details:

"DGH on behalf of Ministry of Petroleum & Natural Gas (MoP&NG), Government of India has established National Data Repository (NDR) in DGH, OIDB Bhawan, Noida, Uttar Pradesh.

The role of DGH in NDR is as under:

1. DGH is the focal point of collection, uploading, preservation and dissemination of the vast geo-scientific information available in the country. Also, all the new data generated shall be uploaded in NDR through the coordination of DGH.
2. DGH is entrusted with the responsibility of data population, its quality check and speedy creation of the data base consisting of geo-scientific information from various domains viz. 2D, 3D reprocessed data, well logs etc.
3. Subsequent to the completion of set-up of NDR, DGH shall be coordinating for offer of prospective areas to national and international companies by facilitating as data viewing centre against the requisite payment".

1.110 When Committee wanted to know the status of data compilation under NDR, the representative of the Ministry of P&NG submitted the following information:

"In the first phase, the data compilation is going on right now. It will be completed by March, 2016. As far as NDR is concerned, appraisal of unappraised areas will take four years. Every year some data will come. By the time of next round, 25 per cent data will come and it will take three more years. As far as reassessment of hydrocarbon potential that will also be completed by2016".

1.111 When the Committee specifically asked about the role of DGH in acquisition of oil assets abroad by Indian PSUs, the Ministry submitted as under:

> "DGH plays limited role in the matter of acquisitions of oil assets abroad as acquisitions are made by ONGC Videsh Limited or other companies directly. DGH examines proposals as and when specific reference is made to it by the Ministry".

New initiatives by DGH

1.112 The Committee observed that more than two decades have been passed since the last Hydrocarbon appraisal was carried out in the country. In that regard, when enquired as to whether there are any plans of the Government for reappraisal of hydrocarbon resources with improved technologies, the Ministry stated as under:

> "Government has planned to carry out the Re-assessment of Hydrocarbon Resources of all Sedimentary Basins including deepwater areas of India. In light of geo-scientific data acquired since the last assessment the Study of Hydrocarbon Resource Assessment will be carried out through KDMIPE, Dehradun. The study is planned to be carried out within a span of 30 months. Hiring of expert agencies through tendering process is in progress by KDMIPE, ONGC. Others details of the project are as under:
>
> i. Multiple work execution teams have been setup for the purpose for re-assessment of Indian Hydrocarbon Resources through an International competitive bidding.
>
> ii. Since the Hydrocarbon Resource re-assessment of all the basins cannot be done simultaneously, the work execution teams will prioritize and draw timelines for completion schedule for each basin to complete the total exercise".

Survey of Unappraised Areas of Indian Sedimentary Basins

1.113 When the Committee asked about the status note on the time lines along with the funds required and the sources of funds on the “Survey of Unappraised Areas of Indian Sedimentary Basins”, the Ministry has furnished following information:

> **"Survey of Unappraised Areas of Indian Sedimentary Basins:**
>
> ONGC and OIL have been entrusted with the task of surveying the 48% unappraised areas of country. OIL has been assigned to carry out 2D seismic API of 7408 LKM falling in North eastern part of India covering states of Assam,

Arunachal Pradesh, Nagaland, Manipur, Tripura and Mizoram and ONGC has been assigned to carry out 2D seismic API of approx. 40835 LKM seismic data in onland part of 22 sedimentary basins of India viz. Cambay, Kutch, Saurashtra, Rajasthan, Pranhita-Godavari, Krishna-Godavari, Cuddapah, Bastar, Cauvery, Vindhyan, Narmada, South Rewa, Satpura-Damodar and Chattisgarh, Bengal, Mahanadi-NEC, Ganga, Deccan Syncline, Bhima-Kaladgi, Himalayan Foreland, Spiti-Zanskar, Karewa and Andman-Nicobar basins.

The proposed 2D Seismic survey work is expected to start in March 2016 and will take five years period to cover the entire area. Total fund requirement for these projects would be to the tune of about 4375 Crores. Initially the expenditure will be made by NOCs. Ministry has sent the proposal to Ministry of Finance for reimbursement of the same through OID cess.

Multi-client Speculative Survey through Service Providers

1.114 Giving information to the Committee on the Survey of offshore areas through policy for Geo-Scientific data generation through Multi-client Survey, Ministry/DGH furnished to the following:

New policy allowing Multi-client Speculative Survey through Service Providers is being implemented by Government of India. Under this policy, Service providers have been invited for carrying out Non-exclusive Multi-Client Geo-Scientific Surveys/ Activities relating to Hydrocarbons in offshore and/or on land part of India.

Under this policy of non- exclusive Multi-client Speculative Survey through Service Providers, seven proposals have been received from various service providers which may generate new 108621 LKM of Geo-scientific data in Off-Shore Basins of India. Provisional letter of consent has been issued for seven proposals after seeking clearances from Ministry of Defense and Ministry of Home Affairs for the offered areas and the interested companies/ entities

Out of the seven proposals for which Provisional Letter of Consent has been issued, M/s Electromagnetic Geo-services ASA, Norway has signed the Agreement of the Data Policy along with Project Data Delivery Bank Guarantee for 10079.96 LKM Marine CSEM & MMT Data Acquisition, Processing, Inversion and Interpretation studies.

No fund is required to be spent by Government of India in implementation of non exclusive multi-client speculative survey on sedimentary basins in India as all expenditure is borne by the contracting companies/ entities. One set of data will be given to DGH free of cost.

Reassessment of Hydrocarbon Resources

1.115 When asked by the Committee to provide information on the time line and the cost estimates for the project 'Reassessment of Hydrocarbon Resources', the DGH furnished the following in its written reply:

> "The last assessment of hydrocarbon resources in India was done for 15 sedimentary basins & deep water areas about twenty years ago. The present project will make use of the large amount of geo-scientific data collected through exploration & development activities in the last twenty years and re-estimate the hydrocarbon resources including yet-to-find hydrocarbon potential. Multi Organization Team (MOT) has been formed to carry out re-assessment of Hydrocarbon Resources of India in all its 26 sedimentary basins in January, 2014. The expenditure for the entire exercise will be borne by KDMIPE, Dehradun and reimbursed by DGH. Budget estimate for the project is Rs. 59 crore. Project will be completed by November 2017.
>
> The Keshav Dev Malviya Institute of Petroleum Engineering (KDMIPE) of ONGC will act as leader with Director (Exploration) of ONGC as Chairman and Director (Exploration & Development) of Oil India Ltd (OIL) as Co-chairman. A National Level Committee headed Petroleum Secretary will monitor & review the progress of work periodically."

Hydrocarbon Vision 2030 document for Northeast India

1.116 The Committee were furnished the following information by Ministry regarding Hydrocarbon Vision 2030 document for Northeast India with CRISIL.

> The Ministry of Petroleum & Natural Gas (MoPNG) has constituted a steering committee to prepare Hydrocarbon Vision 2030 for northeast India. The committee was formed under the chairmanship of Additional Secretary, MoPNG, and comprises representatives from Oil and Natural Gas Corporation (ONGC), Oil India Ltd (OIL), Directorate General of Hydrocarbon (DGH), Gas Authority of India Ltd (GAIL), Indian Oil Corporation Ltd (IOCL), Numaligarh Refinery Ltd (NRL), Petroleum Planning & Analysis Cell (PPAC), Oil Industry Development Board (OIDB) and Engineers India Ltd (EIL). The committee was constituted in March 2015.
>
> CRISIL Risk and Infrastructure Solutions (**CRIS**) was appointed as a knowledge partner to assist the committee in preparing the vision document. CRIS has held in-depth discussions with various stakeholders including private and public sector exploration and production companies, industry bodies, service providers and domain experts, representing different segments of the hydrocarbon value chain, as a part of the consultation process. Also, CRIS team visited the north-eastern

region, held interactions with stakeholders in the region and players across the value chain and based on the review and analysis of respective segments, deliberated on the possible solutions and roadmap for the region. The committee held several meetings to review and discuss the Vision document. Draft Report has been submitted by CRIS after detailed deliberations with respective committee members, covering key action areas and action plan. Ministry is finalizing the report.

Efforts of DGH to explore and develop alternate source of Energy

1.117 In response to specific query about the efforts undertaken by DGH to promote and develop alternate/unconventional sources of energy like shale gas, gas hydrates and CBM etc and its role in developing the same, the Ministry furnished details as under:

"Coal Bed Methane (CBM):

Coal Bed Methane is a form of natural gas (methane) that is extracted from coal beds. Methane is adsorbed in the coal matrix and is present in a near liquid state. CBM is extracted from coal seams by drilling wells into the coal seams, hydro-fracturing the coal seams followed by continuous dewatering of coal seams.

India having the fourth largest proven coal reserves in the world holds significant prospects for exploration and exploitation of CBM. The prognosticated CBM resources in the country are about 92 TCF (2608 BCM). In order to harness CBM potential in the country, the Government of India formulated a policy in 1997 wherein CBM being natural gas is explored and exploited under the provisions of Oil fields (Regulation & Development) Act 1948 and Petroleum and Natural Gas Rules, 1959 and administered by Ministry of Petroleum and Natural Gas.

Current Status:

In order to harness CBM potential in the country, the Government of India has so far awarded 33 CBM blocks under 4 round of CBM bidding & nomination basis. These CBM blocks were carved out by DGH in consultation with MoC and CMPDI. Till date, 33 CBM blocks have been awarded in four rounds of CBM bidding, which covers 17,200 sq. km. (66%) of the total available coal bearing area (26,000 sq. km.) in 11 states of India viz. Andhra Pradesh, Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Maharashtra, Assam, Odisha, Rajasthan, Tamil Nadu and West Bengal. Total prognosticated CBM resource for 33 awarded CBM blocks is about 63.3 TCF (1792.43 BCM), of which so far, 9.9 TCF (280.8 BCM) has been established as Gas-In-Place (GIP).

As on date, 8 CBM blocks have entered development phase (Phase-III), 5 CBM blocks are in exploration phase (Phase-I&II), 4 CBM blocks are awaiting PEL from state government, 4 CBM blocks have been relinquished due to poor CBM

prospectivity and 12 CBM blocks are under the process of relinquishment. Out of 8 CBM blocks in development phase, commercial CBM production has started in 1 block since 14th July 2007 which contributes about 0.38 MMSCMD of total CBM production which is 0.76 MMSCMD. Four more CBM blocks are expected to start commercial production in near future. The details are tabulated as under:

1	Blocks awarded till date	Nomination basis	3
		Under round-I	5
		Under round-II	8
		Under Round-lll	10
		Under Round-IV	7
		Total	33
2	Status of Blocks as on date under	i) Exploration Phase-I	3
		ii) Exploration Phase-II	2
		iii) Development Phase-III	8
		iv) Under Relinquishment	12
		v) Awaiting grant of PEL	4
		vi) Relinquished	4
3	CBM area awarded (sq. km.)		17,200
4	Total CBM Resources, BCM		2,608
5	CBM wells drilled so far (Core Hole/Test wells or Pilot wells)		244/567
6	CBM reserve established (Gas Initial In Place), TCF for 8 blocks		9.9
7	CBM Resource from 33 blocks (TCF)		92
8	Commercial Production commenced, w.e.f.		14.07.2007
9	Present Gas Production from 5 blocks Jharia, RG(E),SP(E), & SP(W), Raniganj (South),MMSCMD		0.736
10	State wise Blocks awarded	i) Jharkhand	7
		ii) Rajasthan	4
		iii) Gujarat	1
		iv) Orissa	2
		v) Chhattisgarh	3
		vi) Madhya Pradesh	7
		vii) West Bengal	4
		viii) Tamil Nadu	1
		ix) Andhra Pradesh	2
		x) Maharashtra	1
		xi) North East	1

Efforts by DGH and role of DGH in developing CBM:

a) DGH is the implementing and monitoring agency for all CBM activities carried out in India by CBM operators
b) DGH coordinates with MoC /CMPDI for shortlisting of new CBM blocks for auction in upcoming CBM round
c) Continuous monitoring of the Work program submitted by CBM block contractors and ensuring that the committed work program is completed in timely manner

d) Addressing the grievances of CBM block operators and ensuring that approvals and recommendations from MoP&NG to operators are provided in an easy and time bound manner

Issues faced by CBM block operators:

a) Overlap Issues with existing awarded coal blocks and Oil/Gas/NELP blocks
b) Land Acquisition problems as large number of CBM wells have to be drilled to drain the CBM from coal seams
c) Low CBM productivity: Per well CBM productivity is low, which necessitates the need to drill a large number of wells to drain the CBM from coal seams
d) Delay in grant of PML/PEL from state govt.
e) Delay in getting Clearances like Consent to Establish (CTE), Consent to Operate (CTO) from state govt. and Environment Clearances
f) Cost of Unfinished Work Program issues in CBM blocks under relinquishment

Shale Gas:

Shale gas is a natural gas entrapped & retained in the shale pore space, fractures and adsorbed on the surface of organic materials present in the shale. Shale gas is found in Source rocks (Shales) whereas conventional gas is found in reservoir rock which is generally sandstone & limestone. Shale gas is different from conventional natural gas because of following reasons:

- Shale gas exploration & exploitation is more cost and technology intensive than conventional gas
- Shale gas deposits are continuous whereas conventional gas deposits are discrete
- Shale gas is found in source rocks whereas conventional gas is found in reservoir rocks
- Shale gas is easier to find but difficult to develop whereas conventional gas is difficult to find but easy to develop

Current Status:

a) The Shale gas policy was announced vide MoPNG Order dated 14-Oct-2013. 50 blocks identified by ONGC and 5 blocks identified by OIL have been issued permission letters to carry out shale gas assessment studies.
b) Activities by ONGC:

i. CAMBAY BASIN: ONGC has identified 28 blocks in the Cambay Basin for shale gas and oil activities under the shale gas policy. As per policy ONGC has to drill 29 pilot wells in the 28 blocks. So far ONGC has completed drilling of 4 wells. Three wells are under drilling. 19 Cores have so far been collected. Identification of 22 wells is in progress. ONGC is also carrying out G&G assessment studies for shale gas activities.

ii. KG-BASIN: In this basin ONGC has 10 blocks for Shale Gas/oil assessment studies.One well is under drilling for shale gas assessment studies. Two cores have been collected. Identification of remaining 12 wells is under progress. In addition G&G assessment studies are also in progress.

iii. CAUVERY BASIN: In Cauvery Basin ONGC has identified 9 blocks for shale gas and oil Assessment studies. One well has been drilled and two cores have been collected. Remaining 11 wells are under identification. G&G studies are in progress.

iv. ASSAM BASIN: In Assam-Arakan Basin three blocks have been identified by ONGC for shale gas activities. One well is currently under drilling and two cores have been collected. G&G studies are in progress. Further identification of remaining two wells is in progress.

c) Activities by OIL:

i. UPPER ASSAM BASIN: OIL has identified 4 blocks in the Assam Basin. Five wells are to be drilled. G&G studies are in progress for the identification of the wells.

ii. JAISALMER BASIN: OIL has one block in this basin. Data collection and G&G studies are in progress for the identification of well in this basin.

iii. The above status has been prepared based on the monthly reports submitted by ONGC and OIL. Technical review meetings have been scheduled for the 22nd & 23rd Jan 2015 to discuss the progress of shale gas activities

Efforts by DGH and role of DGH in developing Shale gas:

Government of India has initiated following concrete steps for commercial production of Shale Gas India. The Government of India announced a “Policy Guidelines for Exploration and Exploitation of Shale Gas and oil by National Oil Companies under Nomination regime” vide order dated 14th Oct 2013. Assessment studies have been initiated by ONGC and OIL in 55 blocks under the shale gas policy for carrying out studies related to the exploration of shale gas and oil. Depending on the results of the first assessment phase of three years, these blocks may become producing blocks for shale gas. Subsequent, to the first Assessment phase ONGC and OIL will further take up 75 and 5 blocks respectively from the existing PML/ML blocks under nomination regime for the assessment studies for Shale gas/oil. Finally in the third Assessment phase of three years, ONGC and OIL will take up 50 and 5 blocks respectively. Depending on the results of assessment phase of three years, some of these blocks may come up to producing shale gas/oil on a commercial basis.

Gas Hydrates:

Gas hydrate is a crystalline solid; its building blocks consist of a gas molecule surrounded by a cage of water molecules. Each molecule of Gas hydrate contains up to 164 m^3 of Methane (CH4). Initial work in India on Gas Hydrates

as energy resource, was done by GAIL and NIO. In 1995 an expert committee realized the potential of gas hydrates in India.

Gas hydrate exploratory activities/ research in India is being steered by the Ministry of Petroleum & Natural Gas under National Gas Hydrate Program (NGHP) which was initiated in 1997 with participation from Directorate General of Hydrocarbons (DGH), National E&P companies (Oil and Natural Gas Corporation Ltd, GAIL India Ltd, Indian Oil Corporation & Oil India Ltd) and National Research Institutions (National Institute of Oceanography, National Geophysical Research Institute and National Institute of Ocean Technology). Steering Committee is headed by Secretary, P&NG with Joint Secretary (E) as convener. The Technical Committee is chaired by DG, DGH and has participation from all NOCs like OIL, ONGC, GAIL, IOC & EIL, and National Institutes like the NGRI, NIO & NIOT. The NGHP was restructured in the year 2000.

Current Status of Gas Hydrates:

a) NGHP carried out the Expedition-01 in 2006. The presence of significant quantities of Gas Hydrate has been established in the KG, Mahanadi and Andaman basins.
b) NGHP Expedition 02 aims at identifying sites which would ideally have:

i. Sand dominated gas hydrate occurrence
ii. Reasonably compacted sediments
iii. Occurrence of free gas below the gas hydrate stability zone

c) Geoscientific studies of over 8000 km² have been carried out in Krishna Godavari and Mahanadi offshore deepwater areas. More than 80+ sites considered to have sand have been studied. These sites have been deliberated at the technical meetings of NGHP as well as by several international experts on gas hydrates. Based on the recommendations of international experts (Scientists of USGS, USDOE) and Indian scientists, 20 sites have been prioritized for NGHP Expedition-02.
d) NGHP Expedition 02 will consist of LWD (Logging while drilling), Coring and wire line logging programme at 20 sites (40 wells) in the deep water KG & Mahanadi basins. M/s Japan Drilling Company has been entrusted to carry out the work for the execution of NGHP Expediton-02 at a cost of Rs 616.95 crores. The Expedition has started on 04th March 2015 and will likely be completed by 31st July 2015.

Efforts by DGH and role in developing Gas hydrates:

As on date Gas Hydrate is still at the research stage globally. No commercial production has been established anywhere in the world. In March 2013, Japan carried out the first ever offshore marine production test. Commercial production is yet to be established based on the test carried out by Japan".

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PART-II

RECOMMENDATIONS / OBSERVATIONS

RECOMMENDATION NO. 1

Need for an Independent and Statutory DGH

The Committee note that with major discoveries in Mumbai High and Western offshore, the hydrocarbon sector received a big boost and after the adoption of liberalized economic policy in July 1991, the Government of India felt the need to deregulate and de-license this sector along with other measures. As a result, the hydrocarbon sector was opened to private and joint sectors. In this changed scenario, the expert committees appointed by the Government recommended the creation of an independent regulatory body. Accordingly, the Government of India set up Directorate General of Hydrocarbons (DGH) on 8 April, 1993 through a cabinet resolution. It was modelled as a technical arm of the Ministry on the lines of Norwegian model after studying and suitably modifying the structure, functions and responsibilities of various regulatory authorities with an objective to promote sound management of Indian petroleum and natural gas resources and also having a balanced regard for environment, safety, technological and economic aspects of petroleum activities. The functions assigned to DGH have been revised from time to time by the Government and it also includes safety related issues and monitoring of Production Sharing Contracts (PSCs).

The Committee observe that the private sector participation has significantly increased ever since the New Exploration Licensing Policy (NELP) was launched in 1998. Through nine NELP rounds 254 blocks have been awarded till date. The Committee, however, are anguished to note that the entire hydrocarbon sector is in limbo with the last round of NELP having begun almost

four years ago. There have been several litigations and arbitration proceedings involving DGH and operators. As a result, it has not only dampened investment scenario in the country but also withheld investments in production and exploration activities. This situation perhaps has been created because the functions of DGH do not refer to 'regulation' in the name of DGH and decisions of the DGH do not lie in any appellate body or court which is the hallmark of an independent regulator.

In Committee's view, when there is a participation of public sector as well as private sector in hydrocarbon sector, it is necessary to have an independent regulator with certain statutory powers to adjudicate matters in line with the policy of the Government. The presence of independent regulators in sectors like telecom, power, financial services, etc. vested with statutory powers further supports the views of the Committee. Need of such regulator is also justified because the Petroleum and Natural Gas Regulatory Board (PNGRB) is a regulator in the Ministry of Petroleum and Natural Gas only for a small part of the downstream sector and the upstream sector does not have any regulator at all. Basically, the DGH carry out contract management and some of regulatory functions on behalf of Ministry of Petroleum and Natural Gas. The Committee, therefore, recommend that MoPNG should vest the regulatory functions being performed by DGH with PNGRB so that it can be regulator for both upstream sector as well as for downstream.

RECOMMENDATION NO. 2

Filling up of the post of Director General of Hydrocarbons

The Committee note that the Directorate General of Hydrocarbon came into being in 1993 and there have been eight officials who have held the post of Director General of Hydrocarbons during the last 23 years. The previous DGH was from the Ministry who held the post as additional charge. The Committee have also noted that the post of DGH has been filled up by technical people in most of the cases. However, in June 2012, the government appointed an official from Indian Administrative Service to the post of DGH and the said official served for 21 months. The post of Director General of Hydrocarbons was lying vacant since July 2015 and the Committee are surprised to learn that one of the main reasons for inordinate delay in appointment is that there have been no recruitment rules for the post of Director General. Now, the Committee have been informed that the rules have been approved in consultation with DoPT and UPSC which provide for technical people with experience in the upstream sector only be eligible for the post of DGH. The process for the recruitment after framing new recruitment rules has been completed and the post has been filled recently.

The Committee have a strong view that the post of Director General of Hydrocarbons is a technical one and it should be filled up only by people who have considerable exposure and experience in upstream sector. The Committee, therefore, recommend that the Ministry should ensure that the post of Director General Hydrocarbons is not kept vacant or held as additional charge by senior officials of the Ministry rather through advance action it should be filled up timely.

RECOMMENDATION NO. 3

Human Resources issues of DGH

The Committee note that DGH has been entrusted with varying functions like carving of blocks for NELP, monitoring of PSCs, providing technical advice to Ministry on issues relevant to exploration and optimal exploitation of hydrocarbons, issuance of essentiality certificates, implementation of NELP and CBM Policies, etc. The Committee, further, note that as against the sanctioned staff strength of 255, the actual strength of DGH is 187 only. The Committee observe that the officers are appointed on deputation at DGH on tenure basis in consultation with CEOs from various oil PSUs and 80% of them are from ONGC and 20% from remaining oil PSUs such as OIL, IOCL, GAIL, HPCL, etc.

The Committee observe that the officers of DGH on deputation may have conflict of interest in assessing the work of their own PSUs. There seems no effort or plan in the Ministry or DGH to create permanent cadre for DGH. The Committee observe that DGH has been advised to appoint an expert consultant on restructuring of DGH and it is in the process of hiring a consultant for this job.

The Committee believe that DGH should have its own cadre of employees for discharging its functions independently. The Committee, therefore, recommend that the hiring of consultant should be completed on priority basis within a reasonable time frame and DGH should be restructured suitably to develop it with permanent cadre of employees after the receipt of report thereon.

RECOMMENDATION NO. 4

Budgetary Allocation for DGH

The Committee note that DGH is one of the most important technical wings of the Ministry assisted by an Advisory council and an Administrative council. As per DGH resolution, the expenditure of the DGH is fully funded by grants from Oil Industry Development Board (OIDB). The expenditure is incurred on Secretarial expenditure, E&P activities, promotion of hydrocarbon activities etc.

The Committee note that DGH is fully dependent on another arm of the Ministry namely OIDB for its funds. Even though it has been stated that the present funding arrangement is considered appropriate and adequate to carry out its various activities, the Committee do not treat this as a happy situation. The Committee observe that DGH has taken several initiatives like Survey of unapprised regions, reappraisal of hydrocarbon resources, multi-client speculative survey through service providers, National Data Repository etc. All these initiatives are very important for understanding and harnessing hydrocarbon potential of the country. The Committee, while concurring with the DGH resolution that its expenditure will be fully met from the grants of OIDB, hold the view that it would have been appropriate at the time of DGH formation but considering the new projects entrusted to it, it would be in fitness of things to review the funding mode and have its own budgetary allocation. The Committee, therefore, recommend that DGH gets suitable budgetary allocation prepared for it either through budgetary allocation or from the Ministry's budget. The Committee also expect that having vested with such an important role and functions, DGH should no longer depend upon OIDB for its funds.

RECOMMENDATION NO 5

DGH and Production Sharing Contracts

The Committee note that the Government had assigned the work relating to implementation of production sharing contracts (PSCs) under NELP to DGH and it has discharged the powers of Central Government where a contract or an agreement for exploration and production of hydro carbons has been signed by the Central Government. Under the PSC regime, all companies are required to submit their cost of production for the year in the beginning and this has to be approved by the Managing Committee. These are evaluated by the officers of DGH in line with the approved development plans and past performance. The Committee have noted that DGH has officers with different backgrounds like exploration, finance and legal etc., who vet, interpret and analyse all documents and other production signing contracts. DGH suggest mid course corrections wherever the production is lesser than the targets. The Committee note that there have been many instances of disputes arising out of execution of production sharing contracts between DGH and companies. Certain disputes have also led to court/arbitration proceedings in Indian and foreign courts. The Committee believe that companies have no choice but to approach courts for appeal against decisions of DGH as there is no appellate authority or other mechanisms where companies can appeal or challenge orders of DGH. As a result, companies have lost their precious time, costs and efforts and there has been delay in carrying out exploration activities. The Committee, therefore, observe that this may not be a good sign for development of hydro carbon industry and therefore, desire that Ministry should strive for setting up a regulatory authority as mentioned in recommendation No.1.

Therefore, the Committee recommend that Ministry should consult all stakeholders and other departments towards setting up of an authority to adjudicate or to hear review orders passed by DGH. The Committee also desire that the Ministry should review the existing production sharing contract system

and bring out a more simplified forms of contracts with clear definitions and with less scope for misinterpretation in line with the stated objective of the Government i.e. ‘Ease of Doing Business' initiative.

RECOMMENDATION NO. 6

National Data Repository

The Committee note that National Data Repository has been established in DGH at Noida. The role of DGH in NDR is collection, uploading, preservation and dissemination of vast geo-scientific information available in the country. NDR has been entrusted with data population, quality checks and creation of database and once NDR is completed then DGH will coordinate with national and international companies by facilitating data viewing against requisite payment.

The Committee note that the data compilation for NDR is supposed to be completed by March 2016. The Committee also expect that in future all the geo scientific data collected by DGH from its various projects like reassessment of hydrocarbon resources and survey of un-apprised areas of Indian sedimentary basins will also be uploaded on NDR. The successful establishment and operationalization of NDR will help paving the way towards Open Acreage Licensing policy (OALP), which is the future objective of the Ministry.

The Committee, acknowledge the significance of a reliable E&P data base for an accurate analysis and assessment of hydrocarbon potential in the country and expect the Ministry to set up and maintain National Data Repository for better management of petroleum and natural gas reserves in the country. The Committee also expect that NDR will allow more transparency and effective dissemination of information regarding hydrocarbon resources and will also lead to better exploration and subsequently fulfilling energy requirements of the country. The Committee, therefore, recommend that the Ministry and DGH should ensure that work of data compilation in NDR is completed in time and the data is disseminated so that DGH can emerge as a key institution for data viewing for national and international companies.

RECOMMENDATION NO. 7

Survey of Unappraised areas of Indian sedimentary basins

The Committee note that ONGC and OIL have been entrusted with the task of surveying 48% of unapprised areas of the country. OIL has been assigned to carryout 2D seismic survey API of 7408 LKM falling in north eastern apart of India and ONGC has been assigned to carryout 2D seismic API of approx. 40835 LKM in inland part of 22 sedimentary basins in India. The proposed 2D seismic survey work is expected to start in March 2016 and will take five years to cover the entire area. The fund requirement for these projects would be to the tune of about Rs. 4375 crore and initially the expenditure will be made by these national oil companies. The Committee note that the Ministry has sent a proposal to Ministry of Finance for reimbursement of the same through oil industry development cess.

The Committee, however, have an apprehension as to whether ONGC and OIL would accord priority to these works and spend such huge funds for this work from their budget. The Committee also wonder as to why more agencies which may have better specialization in such works were not engaged through global tendering so as to complete the project more speedily and in a better manner. The Committee, therefore, opine that the survey of unapprised areas of Indian sedimentary basins is an important project and accordingly, would expect the DGH/Ministry to attach high importance and priority to this work and also desire that the national level committee headed by Petroleum Secretary which monitors and reviews the reassessment of hydrocarbon resources should also include this project for direct monitoring. The Committee also recommend that the Ministry should try to expedite completion of the project at the earliest and also seek funds from Ministry of Finance so that the project does not get delayed for want of funds.

RECOMMENDATION NO. 8

Certification of Good International Petroleum Industry Practices (GIPIP)

The Committee note that the Government had constituted a Standing Committee on Petroleum Industry Practices on 27.12.2013 for identification and codification of Good International Practices in areas of exploration, discovery appraisal, field development etc,. The work was carried out by the consultant M/s Petro Tel Inc USA and the final report was submitted to the standing Committee on 14.07.2015. The project cost of US $ 1.2 Million was funded through DGH budget. The Committee, further, note that this report is under review of afore mentioned standing Committee. The Committee consider the need for codification of Good International Petroleum Industry Practices (GIPIP) as a right step to move towards improving processes at par with global standards. The Committee, therefore, recommend that the report may be reviewed and actionable points to the concerned agencies may be issued so that this practice is put into use at the earliest.

RECOMMENDATION NO. 9

Reassessment of Hydrocarbon Resources

The Committee are dismayed to note that out of 26 sedimentary basins and deep offshore areas upto Exclusive Economic Zone (EEZ), only 48 per cent of the basin area has been appraised. Therefore, currently, a large number of sedimentary basins have either no or scanty data and require additional geo-scientific data coverage and analysis for proper understanding. The Committee also note that the last assessment of hydrocarbon resources base in India was done for fifteen sedimentary basins and deep water areas more than twenty years ago. This shows all the policy makers in poor light especially DGH which has been providing technical advice to the Ministry for more than twenty years. The Committee, further, note that to address the same, some projects have been initiated by the Government through DGH recently.

To reassess the hydrocarbon resources in all sedimentary basins of India, a multi-organisational team has been formed for that purpose where DGH is a Member. The process of tendering for award of job is under progress through international competitive bidding. Similarly, another project for appraisal of unapprised areas of all sedimentary basins has also been initiated which is to be completed in 5 years. DGH is monitoring the project as an interface between Oil India Limited and ONGC and MoPNG are also holding technical interaction with them.

Moreover, a new policy on non-exclusive multi-client speculative survey for unexplored sedimentary basins through service providers is also being implemented with an objective to acquire geophysical data in poorly explored and unexplored areas. DGH has been receiving and reviewing proposals and forwarding them for further necessary clearances. However, seven proposals have been forwarded to MoPNG till date.

The Committee welcome all these initiatives being taken by the Government/DGH and hope that these efforts will certainly help the country to know its hydrocarbon resources potential and henceforth devise policies and strategies to manage its exploitation. The Committee, however, desire that all the initiatives to reassess the hydrocarbon resources and appraisal of unapprised areas in all sedimentary basins of the country must be completed under a fixed time frame and by strictly adhering to the given timelines by using all the latest tools, techniques and technologies in the field.

Considering the stagnant domestic production, the Committee recommend that the Ministry should constitute a multi-organisational team to review thoroughly all the exploration activities in details being carried out by upstream PSU companies for each block, investment made, technology deployed, prospects, production, if any in respect of the exploration and production activities in the country.

RECOMMENDATION NO 10

DGH and Alternate Sources of Energy

The Committee note that in addition to crude oil and natural gas, there are other sources of hydrocarbons which can supplement and enhance energy security of the country. Some of these sources are Coal Bed Methane, Shale gas, Gas Hydrates etc. The Committee note that the projected CBM resources in the country are about 92 TCF and there is a policy for its exploration and exploitation. The Government has so far awarded 33 CBM blocks to harness CBM potential. However, several problems like overlapping issues, land acquisition, low productivity of CBM per annum, delay in grant of PML/TEML from State Governments have been plaguing CBM block operators and as a result, it has hindered optimum exploitation of these non-conventional energy resources. The Committee, therefore, expect the Ministry/DGH to promptly address and resolve these issues in consultation with the agencies concerned and facilitate for exploitation of CBM as an alternate source of energy.

Similarly, Shale gas has emerged as the latest source of hydrocarbons with encouraging prospects. Shale gas exploitation is costlier and requires intensive technology than the oil. The Committee note that as per the policy guidelines announced in October 2013 that Shale gas development in the country will be carried out by national oil companies under nomination regime. Accordingly, ONGC and Oil India Limited (OIL) have been allotted 50 and 05 blocks respectively. Research in blocks allotted to ONGC and OIL has not yet begun. The Committee are concerned that there has been no progress since two years and ONGC/OIL should be held accountable for their work programme in the development of shale oil and gas. The Committee, therefore, would like to impress upon DGH to closely monitor Shale gas exploration projects so that these would be completed well in time.

The Committee also note that the Ministry of Petroleum and Natural Gas is steering National Gas Hydrate Programme (NGHP) in the country. Many national research institutions and national E&P companies are participating in this programme and the NGHP Expedition-02 has been completed recently. The Committee note that results have been encouraging and further expeditions for testing/exploiting these resources need to be carried out.

The Committee find that the progress in exploitation of alternate energy resources has been very tardy in the country. The Committee, therefore, emphasise that DGH should give due attention to all these programmes relating to alternative sources of energy i.e. CBM, Shale Gas and Gas Hydrates. Further, for better exploration and exploitation of these resources, all contentious issues that may arise in the process may be sorted out amicably so that hydrocarbon production of the country could be increased and energy security would be enhanced.

New Delhi;
***04 May*, 2016**
14 Vaisakha,1938 (Saka)

PRALHAD JOSHI,
Chairperson,
Standing Committee on
Petroleum & Natural Gas.

Annexure I

MINUTES

STANDING COMMITTEE ON PETROLEUM AND NATURAL GAS
(2014-15)

NINTH SITTING
(19.01.2015)

The Committee held its meeting on Monday 19 January, 2015 from 1130 hrs to 1445 hrs in Committee Room 'B', Parliament House, New Delhi.

PRESENT

Shri Pralhad Joshi - Chairperson

MEMBERS

LOK SABHA

2 Dr. Ravindra Babu
3 Shri P. K. Biju
4 Shri Kalikesh N. Singh Deo
5 Shrimati Rama Devi
6 Shri Elumalai V.
7 Shri Naranbhai Kachhadiya
8 Dr. Thokchom Meinya
9 Shrimati Pratima Mondal
10 Shrimati Jayshreeben Patel
11 Shri Arvind Sawant
12 Shri Raju Shetty
13 Shri Rajesh Verma
14 Shri Om Prakash Yadav
15 Shri Laxmi Narayan Yadav

RAJYA SABHA

16 Shri Mansukh L. Mandaviya
17 Shrimati Gundu Sudharani

SECRETARIAT

1. Shri S.C. Choudhary - Director
2. Shri H. Ram Prakash - Additional Director

Representatives of the Ministry of Petroleum & Natural Gas

1	Shri Saurabh Chandra	-	Secretary
2.	Dr. S.C.Khuntia	-	SS & FA
3.	Shri U.P.Singh	-	Joint Secretary

Representatives of Public Sector Undertakings

1.	Shri D.K.Sarraf	-	C&MD, ONGC
2.	Shri S.K.Srivastava	-	C&MD, OIL
3	Shri B.N.Talukdar	-	DG, DGH

2. At the outset, Hon'ble Chairperson welcomed the Members and representatives of the Ministry of Petroleum and Natural Gas , Directorate General of Hydrocarbons and PSUs to the sitting of the Committee held to have a briefing by the representatives of the MoP&NG on the subject 'Functioning and Purview of Directorate General of Hydrocarbons'. Thereafter, the representatives of the Ministry briefed the Committee on the subject. A power point presentation was also made by the representatives of DGH highlighting the various activities and responsibilities of DGH.

3. The Committee then deliberated upon various aspects related to the subject such as activity domain of DGH as an upstream regulator, manpower requirements, available fund resources, ongoing projects of DGH and monitoring thereof, status of development of unconventional hydrocarbons and progress achieved therein, status of fields awarded under various nomination regimes, monitoring of E&P processes, status of various discoveries under PSC regime, appraisal of sedimentary basins etc.

4. The clarifications sought by the Members on various points were provided by the representatives of the Ministry. However, on some of the points where the information was not readily available, the Hon'ble Chairperson instructed the Ministry to furnish the written replies to the Secretariat at the earliest.

5. A copy of the verbatim proceedings of the sitting has been kept for record.

The Committee then adjourned.

Annexure II

MINUTES
STANDING COMMITTEE ON PETROLEUM AND NATURAL GAS
(2015-16)

FIFTH SITTING
(18.11.2015)

The Committee sat on Wednesday, the 18 November, 2015 from 1100 hrs. to 1330 hrs. in Committee Room 'D', Parliament House Annexe, New Delhi.

PRESENT

Shri Pralhad Joshi - Chairperson

MEMBERS

LOK SABHA

2 Dr. Ravindra Babu
3 Shri P. K. Biju
4 Smt. Rama Devi
5 Shri Elumalai V.
6 Dr. Thokchom Meinya
7 Smt. Pratima Mondal
8 Smt. Anupriya Patel
9 Shri Arvind Sawant
10 Shri Ravneet Singh
11 Shri Rajesh Verma
12 Shri Laxmi Narayan Yadav

RAJYA SABHA

13 Shri Ishwarlal Shankarlal Jain
14 Chaudhary Munvvar Saleem
15 Shri Praful Patel

SECRETARIAT

1. Shri A.K.Singh - Additional Secretary
2. Dr. Ram Raj Rai - Director
3. Shri H. Ram Prakash - Additional Director

Representatives of the Ministry of Petroleum & Natural Gas

1	Shri Kapil Dev Tripathi	-	Secretary
2	Shri Ajay Prakash Sawhney	-	Additional Secretary and DG, DGH
3	Shri U.P.Singh	-	Additional Secretary & CMD, OIL and Secretary, OIDB

Representatives of Public Sector Undertakings and other Organisations

1	Shri D.K.Sarraf	-	C&MD, ONGC
2	Shri R.K.Sinha	-	CTO, DGH

2. At the outset, Hon'ble Chairperson welcomed the Members and representatives of the Ministry of Petroleum and Natural Gas, Directorate General of Hydrocarbons and PSUs to the sitting of the Committee held to take oral evidence by the representatives of the MoP&NG on the subject 'Functioning of Directorate General of Hydrocarbons'. Thereafter, the representatives of the Ministry briefed the Committee on the subject. A power point presentation was also made by the representatives of DGH highlighting various activities undertaken by DGH.

3. The Committee then deliberated upon various aspects related to the subject such as evolution of DGH as an upstream regulator, its functions and responsibilities, shortage of staff, deputation of personnel from PSUs, funding pattern, ongoing projects of DGH and their monitoring, steps taken to apprise the unapprised areas for hydrocarbons, redressal mechanism for disputes and National Data Repository etc. Further, issues like long pending vacancy of the post of DG of DGH, delay in framing of rules for the appointment of DG, composition of advisory council and its appointment procedure were also discussed. In addition, the issue of road map for ensuring nation's energy security and the role of oil companies like ONGC in reducing import dependency of crude oil also came up for discussion.

4. The clarifications sought by the Members on various points were provided by the representatives of the Ministry. However, on some of the points where the information

was not readily available, the Hon’ble Chairperson instructed the Ministry to furnish written replies to the Secretariat at the earliest.

5. During the process of discussion, the Committee decided to bifuricate the already selected subject "National Gas Grid with specific reference to utilization of product pipelines of Oil PSUs" into two separate subjects namely (i) "National Gas Grid" and (ii) "Capacity utilization of product pipelines of oil PSUs" for better deliberation and examination. The Committee also decided to select a new subject namely "Pricing of Gas" for detail examination and Report during the current term.

6. A copy of the verbatim proceedings of the sitting has been kept for record.

The Committee then adjourned.

Annexure III

MINUTES
STANDING COMMITTEE ON PETROLEUM AND NATURAL GAS
(2015-16)

FIFTEENTH SITTING
(04.05.2016)

The Committee sat on Wednesday, the 4 May, 2016 from 1000 hrs. to 1040 hrs. in Committee Room 'D', Parliament House Annexe, New Delhi.

PRESENT

Sh. Pralhad Joshi - Chairperson

MEMBERS

LOK SABHA

2 Dr. Thokchom Meinya

3 Shrimati Jayshreeben Patel

4 Shri Raju Shetti

5 Dr. Bhola Singh

6 Shri Kamakhya Prasad Tasa

7 Shri Om Prakash Yadav

8 Shri Laxmi Narayan Yadav

9 Shri A.T. Nana Patil

RAJYA SABHA

10 Shri Prabhat Jha

11 Shri Bhubaneshwar Kalita

SECRETARIAT

1.	Shri A.K.Singh	-	Additional Secretary
2.	Dr. Ram Raj Rai	-	Director
3.	Shri Sujay Kumar	-	Under Secretary

2. At the outset, the Hon'ble Chairperson welcomed Members to the sitting of the Committee. The Committee then took up for consideration the Draft Report on the subject 'Functioning of Directorate General of Hydrocarbons (DGH)'. The Members of the Committee thereafter, adopted the report without any modifications/changes.

3. The Committee then authorised the Chairperson to present/lay the Report in both the Houses of Parliament.

The Committee then adjourned.