

Chapter 1 - Hydrocarbon Production Sharing Contracts - An Introduction

1.1 Petroleum Exploration and Production (E&P)

1.1.1 Background

Petroleum covers hydrocarbons in liquid form (*viz.* crude oil) as well as in gaseous form (*viz.* natural gas). While hydrocarbon fields primarily contain either crude oil or natural gas, they also include associated natural gas (natural gas produced in association with crude oil), as well as condensate (liquid hydrocarbons segregated from natural gas).

Petroleum Exploration and Production (E&P) operations, also referred to as upstream operations¹, can be broadly grouped into three categories:



1.1.2 Petroleum Exploration

The first phase in the process for extraction of petroleum is exploration – the search for oil and gas deposits beneath the earth’s surface. Such deposits could either be onshore or offshore. Exploration consists of several sub-phases:

¹ Downstream operations include refining of crude oil, and marketing of petroleum and gas products. Midstream operations (which are often included under downstream operations) include storage, transportation and related operations.

Figure 1.1 - Phases of Petroleum Exploration



1.1.3 Development Operations

The next phase in the extraction of potential is the development of field, where a commercial discovery of hydrocarbons has been made. This will first involve the drawing up of a field development plan to ensure the most efficient, beneficial and timely extraction of petroleum, keeping in view engineering, economic, safety and environmental considerations.

Development will then include the following aspects, among others:

- Drilling of production wells (for producing crude oil and gas);
- Drilling of injection wells (for injecting water or gas, in order to sustain or accelerate the production of hydrocarbons);
- Installation of offshore platforms and installations, for handling offshore production of oil and gas; and
- Laying of gathering lines, and installation of separators, tankages, pumps, artificial lift facilities, which are required to produce, process, store, and transport petroleum.

1.1.4 Production Operations

Production operations involve operations after the commencement of production from a developed field. This would typically involve, among others:

- operation and maintenance of existing facilities;
- workovers;
- plugging and abandonment of wells;
- improved oil recovery; and
- site restoration (after cessation of petroleum operations) etc.

1.2 Private Sector Participation in Petroleum E&P in India

Efforts to involve foreign and domestic private sector companies in the business of Exploration and Production (E&P) of oil and gas in India began as early as 1973, followed by three rounds of bidding between 1980 and 1986, which did not yield any concrete results.

In 1991, the Government of India decided to invite foreign and domestic private sector companies to participate in the development of discovered oil and gas fields, and in some cases, fields partially developed by the National Oil Companies (NOCs) – Oil and Natural Gas Corporation Limited (ONGC) and Oil India Limited (OIL). In 1993, the Government introduced a policy of round-the-year bidding for exploratory blocks. In all, a total of nine rounds were held:

- One round for medium-sized discovered/ producing fields (1992);

- Two rounds for small-sized discovered fields (1991 and 1993); and
- Six rounds for pre-NELP exploratory blocks (1993 to 1995)².

1.3 New Exploration Licensing Policy (NELP)

In 1997, the Government announced the New Exploration Licensing Policy (NELP), under which NOCs would compete with Private Sector Companies for obtaining E&P licenses through a bidding process, instead of getting them on nomination basis. The main features of NELP, which was notified in 1999, are summarised below:

Feature	Brief Description
No special privileges for National Oil Companies (NOCs)	The NOCs were required to compete with the private sector for obtaining Petroleum Exploration Licenses, instead of getting them on nomination basis. There was no mandatory State participation through the NOCs, nor any “carried interest” ³ of the State.
Open availability of exploration area	There would be open availability of exploration acreages, to be demarcated on a grid system, to provide a continuous window of opportunities to all companies ⁴ .
Sharing of profit petroleum	Government’s share would be based on pre-tax sharing of profit petroleum based on investment multiple achieved. Contractors would be allowed full cost recovery.
Marketing freedom	Contractors were free to market the crude oil and gas in the domestic market.
Royalty rates	Royalty rates were fixed at 12.5 per cent of the wellhead value of crude oil in onshore areas and 10 per cent for offshore areas, while the rate was fixed at 10 per cent for natural gas. In addition, to encourage exploration in deep water and frontier areas, royalty was reduced by 50 per cent for offshore deep water areas for the first 7 years after commencement of commercial production. Further, there would be no payment of signature, discovery or production bonuses, nor would any cess be levied on crude production.

² In common parlance, the term “pre-NELP” is applied to the rounds for pre-NELP exploratory blocks

³ Carried interest: An agreement whereby one party (usually the private partner) pays for a portion of the pre-production costs of the other party (usually the NOC).

⁴ This has not taken place, with acreage still being auctioned in rounds rather than on an open availability basis.

Feature	Brief Description
Tax Holiday	There would be a seven year tax holiday after commencement of commercial production, and exemption from import duty for goods imported for petroleum operations.
Empowered Committee of Secretaries (ECS)	An Empowered Committee of Secretaries, consisting of Secretary, MoPNG, Finance Secretary and Law Secretary would consider bid evaluation criteria, conduct negotiations with the bidders, wherever necessary, and make recommendations to the Cabinet Committee on Economic Affairs (CCEA) on award of blocks.

1.4 Legal Framework

The Oilfields (Regulation and Development) Act, 1948 provides for regulation of oilfields and development of mineral oil – petroleum and natural gas – resources. The Petroleum and Natural Gas Rules, 1959 (PNG Rules), which are drawn up under Sections 5 and 6 of the Oilfields (Regulation and Development) Act, regulate the grant of exploration licenses and mining leases in respect of petroleum and natural gas. Under these Rules, GoI has the power to grant exploration licenses/ mining leases for offshore areas, while the State Governments are empowered to do so for onland areas.

Rule 5(2) of the PNG Rules specifically empower the GoI to include “*additional terms, covenants and conditions as may be provided in the agreement between the Central Government and the licensee or the lessee*”, after consulting the State Governments (where onland areas are involved). The Production Sharing Contracts (PSCs) between the GoI and the contractor (s) are signed under the provisions of this rule.

1.5 Organisational Structure

The Ministry of Petroleum and Natural Gas (MoPNG) is *inter alia* responsible for the exploration and production of petroleum and natural gas, including the administration of the Oilfields (Regulation and Development) Act, 1948. MoPNG is assisted by the Directorate General of Hydrocarbons (DGH), which was established in April 1993 with the objective of promoting sound management of Indian petroleum and natural gas resources having a balanced regard for the environment, safety, technological and economic aspects of petroleum activities.

1.6 Award of Production Sharing Contracts (pre-NELP/ NELP)

The position of PSCs awarded/ signed under different fiscal regimes was as follows:

- Discovered/ Producing fields rounds– 29;
- Pre-NELP Exploration Rounds – 28; and
- NELP Rounds (I to VIII) – 235

Details are given below:

Table 1.1 – Blocks awarded prior to NELP

Rounds	Year of offer	Fields/ blocks awarded	Offshore blocks awarded	Onshore blocks awarded	Blocks relinquished/ surrendered	Blocks converted to Mining Lease
Discovered/ producing fields	1991 to 1993	29	6	23	1	N/A
6 Pre-NELP Exploration Rounds	1993 to 1995	28	11	17	10	1

Table 1.2 – Blocks awarded under NELP

Round	Year of offer	Blocks awarded	No. of offshore blocks awarded		Onshore blocks awarded	Blocks relinquished /surrendered	Discoveries
			Deep water	Shallow water			
1 st Round	1999	24	7	16	1	12	39
2 nd Round	2000	23	8	8	7	17	7
3 rd Round	2002	23	9	6	8	1	15
4 th Round	2003	20	10	0	10	1	11
5 th Round	2005	20	6	2	12		12
6 th Round	2006	52	21	6	25		2
7 th Round	2007	41	11	7	23		
8 th Round ⁵	2009	32	8	11	13		
Total		235	80	56	99	31	86

1.7 Bid Evaluation and Award under NELP – An Overview

1.7.1 Process

The process of award of contracts under the NELP rounds is broadly as follows:

⁵ Under 9th NELP round (launched in October 2010), Government of India has offered 34 exploratory blocks (19 onland, 8 deep water and 7 shallow water). The NELP Round, for which submission of bids closed on 28 March 2011, attracted a total of 74 bids for 33 out of the 34 blocks on offer.

- Preparation of data package⁶ and basin information docket⁷;
- Road shows for publicizing the NELP round;
- Publishing of bid document (which includes the Notice Inviting Offer (NIO), the bid format, the Model Production Sharing Contract (MPSC), the petroleum tax guide, the Site Restoration Fund scheme, and price list for information docket, data package etc.);
- Purchase of bid document and data package/ basin information docket by contractors;
- Submission of bids, evaluation thereof, and award of blocks; and
- Signing of Production Sharing Contracts (PSCs).

1.7.2 Bid Evaluation Criteria (BEC)

Evaluation of bids is carried out, on weightages based on technical and financial capability, proposed exploratory work programme, and the fiscal package offered.

Area	Biddable inputs
Technical Capability	<ul style="list-style-type: none"> • Production, reserves of oil and gas, and acreage holding of the companies/consortium. • Experience of operatorship in oil & gas E&P of the companies/consortium.
Financial Capability	<ul style="list-style-type: none"> • Net worth • Debt equity ratio • Average profit before tax for last three years
Exploratory Work Programme	<p>Separately for each exploration phase:</p> <ul style="list-style-type: none"> • API of new seismic data (specifying line kms of 2D seismic surveys and/or sq. kms. of 3D seismic surveys); • Re-processing of existing seismic data; • technical assessment by the bidders; and • exploratory drilling - number of exploration wells (with minimum stated objective depths)
Fiscal Package	<ul style="list-style-type: none"> • Percentage of annual production to be allocated for cost recovery

⁶ Data package contains seismic data, navigation data, relevant maps and well log data for the individual block.

⁷ Basin information docket is for the basin as a whole, and less detailed than the data package. It contains information on regional and local geology, status of exploration activities, hydrocarbon potential and a brief write-up on the blocks.

Area	Biddable inputs
	<ul style="list-style-type: none"> Contractor's share of Profit Petroleum at various levels of pre-tax multiples of investment reached. (Royalty receivable is also considered for calculation of Government NPV)

The exact criteria and weightages (in percentage terms) varied between different rounds of NELP, as summarised below:

Table 1.3 – Weightages of Bid Evaluation Criteria for different NELP rounds

Criterion	I, II & III	IV and V		VI				VII					VIII		
		On-land, Shallow	Deep water	Onland, Shallow		Deep water		Onland, Shallow			Deep water		On land	Other Onland, Shallow	Deep water
				Type A	Type B	Type A	Type B	A	B	S	A	B			
Technical Ability	6	6	9	15	15	20	20	-	-	-	30	30	-	-	25
Financial Ability	4	4	6								-	-			-
Work Programme	60	60	55	25	35	20	30	40	50	40	15	25	50	50	25
Fiscal Package	30	30	30	60	50	60	50	60	50	60	55	45	50	50	50
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

The qualifying criteria included non-zero score under technical capability⁸; confirmation to Minimum Work Programme Commitment; and Certificate from a Chartered Accountant that net worth was equal to or more than the MWP for Exploration Phase I.

As regards the fiscal package, nine scenarios were envisaged with low, medium and high reserve sizes and oil/ gas prices. The ratio of Government NPV (Net Present Value) to Project NPV was calculated, using a discount rate of 10 per cent, in each of the nine scenarios, and a weighted average was calculated to arrive at the final value offered by the bidder. The bidder offering the highest Government NPV was given the maximum points, with other bidders receiving proportionate points.

⁸ which included acreage holding, operatorship experience, average annual accretion of proved + probable (2P) reserves, and average annual production

As can be seen, substantial weightage is given to exploration work as part of the bidding criteria, so as to incentivise an aggressive exploration programme with better prospects for discovery of new national oil and gas resources.

The exploration programme, which includes both seismic surveys as well as drilling of exploration wells, is to be carried out in a phased manner within clearly defined timeframes and similarly phased relinquishment of portions of the contract area. At the end of the exploration period, the entire area (except for areas where oil and gas has been discovered, or is being developed) is to be returned to the Government, which can then re-offer it through a bidding process to other parties. Evidently, the idea is to prevent hoarding/ accumulation of exploration acreage.