INDIA

Law and Practice

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Khaitan & Co

Contents

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1. General Structure of Hydrocarbon Ownership and Regulation

1.1 System of Hydrocarbon Ownership

India has a federal structure of government where power to legislate is divided between the union/central legislature (parliament) and the state legislature in terms of the subject reserved for them under the Constitution of India. In accordance with the Constitution of India, parliament has been entrusted to legislate on matters pertaining to the regulation and development of oilfields and mineral oil resources, and petroleum and petroleum products. Additionally, ownership of minerals and things of value within territorial waters or the continental shelf, and resources of the exclusive economic zone are vested with the union. The Government of India (GoI) is the sole and exclusive owner of hydrocarbons and petroleum, except when the title passes to contractors in accordance with exploration and production contracts.

1.2 Regulatory Bodies

The Ministry of Petroleum and Natural Gas (MoPNG) is the administrative ministry of the GoI overseeing the petroleum and natural gas sector, including administering legislation. The Government of India (Allocation of Business) Rules 1961 entrust the transaction of hydrocarbon exploration and exploitation to the MoPNG.

The upstream sector is under the de facto regulatory control of the Directorate General of Hydrocarbon (DGH). The DGH was set up by the MoPNG pursuant to a resolution in 1993, with the aim of promoting sound management of Indian petroleum and natural gas resources, with balanced regard for the environmental, safety, technological and economic aspects of petroleum activity. The DGH, in its advisory functions, advises the MoPNG on matters related to the upstream sector, and the Indian government on the formulation of safety norms and regulations in oilfield operations.

The Petroleum and Natural Gas Regulatory Board (PNGRB) is the regulatory authority for the midstream and downstream sector and is entrusted with regulating the refining, storage, transportation, distribution, marketing and sale of petroleum, petroleum products and natural gas. The PNGRB also exercises adjudicatory functions in the midstream and downstream sector. Other functions of the PNGRB include promotion of the competitive market and addressing the grievances of consumers.

The following regulatory and administrative bodies have been established primarily to ensure safety in the oil and gas sector.

- The Oil Industry Safety Directorate (OISD) is a technical directorate established in 1986 under the MoPNG. By formulating and co-ordinating the implementation of a series of self-regulatory measures, the OISD performs the role of safety regulator for upstream offshore blocks.
- The safety, health and welfare of mine workers is governed by the Mines Act 1952. The Directorate General of Mines Safety (DGMS) is a regulatory agency under the Ministry of Labour and Employment which aims to attain risk and hazard-free conditions of work for persons employed in onshore blocks.

While the above regulatory and administrative agencies are primary agencies established specifically to regulate the oil and gas sector, there are other government regulatory and administrative agencies pertaining to the environment and labour matters.

1.3 National Companies

Companies in which the GoI has the majority shareholding include:

- Oil and Natural Gas Corporation Limited – the largest oil and gas exploration and production company in India, which has various subsidiaries, including the refining companies, Hindustan Petroleum Corporation Limited and Mangalore Refinery and Petrochemicals Limited;
- Oil India Limited – the other government-owned exploration and production company;
- Indian Oil Corporation Limited – a refining and downstream company;
- Bharat Petroleum Corporation Limited – a refining and downstream company; and
- GAIL (India) Limited – a dominant player in the midstream and downstream sector, including natural gas pipelines.

1.4 Principal Hydrocarbon Law(s) and Regulations

The key legislation in the oil and gas sector is as follows.

- The Oilfields (Regulation and Development) Act 1948 ("Oilfields Act"), which governs the upstream oil and gas sector. The Oilfields Act provides for the regulation of oilfields and for the development of mineral oil resources, and it includes provisions relating to licensing and leasing of oil and gas blocks. Pursuant to the Oilfields Act, the GoI is vested with the power to make rules with respect to mining leases and mineral oil development, and the royalty rates to be paid by the holder of a mining lease.
- The Petroleum and Natural Gas Rules 1959 ("PNG Rules") were enacted under the Oilfields Act and include detailed provisions for the granting of licences and leases for both offshore and onshore areas. A petroleum exploration licence (PEL) and petroleum mining lease (PML) are granted pursuant to the PNG Rules.
- The Mines Act 1952 ("Mines Act") and Oil Mines Regulations 2017 deal with provisions relating to the health, safety and welfare of workers in the oil mines. The Mines Act also lists obligations in the form of the duties of owners, agents and managers, and strict penalties are prescribed in cases of contravention.
- The Petroleum Act 1934 ("Petroleum Act") regulates matters relating to the import, transport, storage, production, refining and blending of petroleum.
- The Petroleum and Natural Gas Regulatory Board Act 2006 ("PNGRB Act") provides for the establishment of the PNGRB, which has the authority to regulate the refining, processing, storage, transportation, distribution, marketing and sale of petroleum, petroleum products and natural gas. This excludes the production of crude oil and natural gas so as to protect the interests of consumers and entities engaged in specified activities, and to ensure an uninterrupted and adequate supply of petroleum, petroleum products and natural gas in all parts of the country, as well as to promote competitive markets.

Since the oil and gas sector is a highly regulated field, in addition to the above legislation, the government from time to time promulgates policies, standards, directives and guidelines for governing various aspects of the sector.

2. Private Investment in Hydrocarbons: Upstream

2.1 Forms of Private Investment: Upstream

Prior to the liberalisation of the oil and gas sector in 1999, the Indian government and the national oil companies dominated the oil and gas sector, and the government adopted various licensing regimes to promote the upstream sector.

A block/field awarded under one licensing regime continues to be governed by such regime despite a new licensing regime coming into force. Therefore, the different blocks in India are governed by different licensing regimes, which can be broadly classified as follows.

- Nomination Regime – under this licensing regime, exploration and production licences were awarded on a nomination basis to the two national oil exploration and production companies, OIL and ONGC, until the late 1970s. Under the Nomination regime, ONGC and OIL are operating 12 petroleum exploration licences and 356 petroleum mining lease blocks.
- Pre-NELP Regime – post the nomination regime and prior to NELP, the GoI signed 56 contracts for exploration blocks and development fields.
- NELP Regime – the introduction of the New Exploration Licensing Policy (NELP) was a watershed moment in the upstream oil and gas sector. The NELP was implemented by the GoI in 1999. Under NELP, for the first time, the GoI adopted international competitive bidding to award blocks to the private sector and foreign companies. The government awarded the blocks under the production-sharing model, wherein the contractor is required to pay part of the profits earned to the government after deducting the costs incurred. Nine bidding rounds were conducted under the NELP regime from 1999 to 2012. As at December 2022, 33 blocks awarded under NELP biddings rounds were operational.
- HELP Regime – due to certain shortcomings in the NELP regime, in 2016 the GoI introduced the Hydrocarbon Exploration and Licensing Policy (HELP) to garner more private participation and foreign investment. Presently, oil and gas blocks are awarded under the HELP regime. Unlike its predecessor, HELP includes a revenue-sharing mechanism which allows marketing and pricing freedom for the hydrocarbons produced. Furthermore, a uniform licence is granted encompassing exploration and production of all hydrocarbons (such as oil, gas, coal-bed methane, shale gas/oil and gas hydrates). The GoI has also introduced the Open Acreage Licensing Policy (OALP) within the ambit of HELP. Unlike in NELP, where the blocks on offer for bidding were determined by the government, the OALP allows oil companies to choose hydrocarbon blocks from the designated area, which are then put up for bidding. The government launched OALP Bid Round IX on 3 January 2024, offering 28 blocks for exploration and development through international competitive bidding. In the previously conducted OALP VIII Bid Round, a total of ten blocks were offered for bidding and were awarded to four companies comprising both government and private entities. The estimated investment in awarded blocks for the committed exploration work programme is about USD233 million. With the conclusion of the eight rounds, a total of 144 exploratory blocks have been awarded by GoI covering an area of 242,055 square kilometres.

- To monetise various small and marginal hydrocarbon blocks under the national oil companies, the GoI rolled out the Discovered Small Field Policy 2015 (DSF), previously known as the "Marginal Field Policy", to bring these fields into production. Similar to the HELP regime, a revenue-sharing mechanism and a uniform licensing policy are adopted for all hydrocarbons. The contractors must sell the crude oil exclusively in the domestic market through a transparent bidding process. The DGH recently announced the launch of a special DSF Bid Round 2024 offering three fields under the DSF Policy through international competitive bidding.
- As per the model revenue-sharing contract (RSC), the GoI is the owner of petroleum except for that part of the crude oil, condensate or gas title which passes to a contractor or any other person under the RSC. Once the block is awarded by the government to the contractor, the rights available to the contractor can be broadly classified into the following categories based on the stage of the block.
  (a) Exploration phase – for this phase the contractor is required to obtain a PEL from the GoI (offshore blocks) or state government (onshore blocks) under the Oilfields Act and PNG Rules. As per the PEL, the contractor is granted exclusive rights to drilling operations (information drilling or test drilling) and leasehold rights over any part of the licence area.
  (b) Development and production phase – to carry out development activities, the contractor is required to obtain a PML for the areas covering the discoveries. The PML grants the contractor exclusive rights over the leased land to carry out mining operations for petroleum and natural gas.

2.2 Issuing Upstream Licences/Obtaining Hydrocarbon Rights

Since the advent of NELP, the government has followed international competitive bidding procedures for awarding exploration blocks. Furthermore, since the introduction of OALP, the DGH has allowed private investors to apply directly to the GoI for any exploration in a new block, pursuant to suo motu expression of interest (EoI).

The DGH helps investors propose their suo motu EoI, based on the data available at the National Data Repository (NDR), where sedimentary basins are placed in three categories, namely Category I, Category II and Category III. Category I sedimentary basins are those which have established production and Category II and Category III basins are those which have prospective and contingent resources. The NDR helps investors to shortlist or select a block for the submission of an EoI to the GoI. The entity proposing the EoI has to fulfil certain technical and financial criteria and also submit a participation bond. The technical criteria primarily consist of minimum operatorship experience, minimum acreage holding and minimum average annual production. The financial qualification criteria are primarily based on the net worth of the entity (which is based on the estimated expenditure for the committed work programme for the block concerned). Once the DGH receives an EoI, it may offer the whole block for bidding by publishing a notice inviting offers (NIO). A period of 60 days is allowed for the bidders to submit bids after the date of publishing of the NIO.

After receiving the bids, the DGH evaluates them based on certain parameters. The key evaluation criteria are a biddable work programme and the share of revenue offered to the GoI. The originator of an EoI is given an incentive at the time

of the bid evaluation. The bidders scoring the highest marks against the evaluation criteria are awarded the RSC.

2.3 Typical Fiscal Terms: Upstream

Contractors pay royalties, profit share for blocks under the NELP regime, and revenue share for blocks under HELP and DSF. Under the revenue-share model, bidders pay a share of revenue for the commencement of production, as per their quoted bid. The revenue share varies from USD50,000 to USD7 million per day.

The royalty rates are determined as per the Oilfields Act, PNG Rules and the terms of the RSC. Under HELP, royalty rates for onshore blocks are 12.5% for oil and 10% for gas and coalbed methane. The royalty rates for hydrocarbons in shallow water, deep water and ultra-deep water blocks are 7.5%, 5% and 2.5% respectively. Furthermore, no royalty is payable for the first seven years for deep water and ultra-deep water blocks.

Pursuant to the granting of a licence, the licence holder must pay a nominal yearly fee for the licence based on each square kilometre or part thereof covered by the licence.

Furthermore, according to the PNG Rules, before being granted a lease, a security deposit must be paid for due observance of the terms of the lease. Additionally, on the granting of a lease, the lessee must pay the GoI or the state government, as the case may be, a fixed nominal yearly dead rent.

2.4 Income or Profits Tax Regime: Upstream

An entity engaged in upstream operations is subject to the following tax legislation.

Income Tax Act 1961 ("IT Act")

Under the IT Act, the income of the operator is taxed. The profits and gains of the entities in upstream operations are computed on the basis of the determined value and revenue realised on the sale of oil and gas as per the contract, after allowing deductions. Deductions at a rate of 100% are allowed for capital and revenue expenditures incurred in respect of exploration operations and drilling operations. Companies can also claim depreciation for newly installed machinery and plants, and can carry forward losses to set off against subsequent revenues. Entities in the upstream sector can also claim special allowances, in case of any infructuous or abortive exploration expenses, drilling or exploration activities, and depletion of mineral oil in the mining area.

Indirect Taxes

Crude oil, high speed diesel, petrol, natural gas and aviation turbine fuel are subject to value added tax/sales tax/excise duty. The procurement side of the upstream sector is subject to the Central Goods and Services Tax Act 2017 (GST Act), a unified indirect tax levied on the supply of goods and services.

2.5 Federal or State Companies

Prior to the advent of the NELP regime, the national oil exploration and production companies were nominated by the government to explore and develop oil and gas blocks. However, since the turn of the century, these privileges have been curtailed and the national oil exploration and production companies have been treated as equal to private companies in so far as awarding of blocks is concerned. Furthermore, the terms of the revenue-sharing contracts under the HELP and DSF regimes do not offer any special concessions to national oil exploration and production companies.

2.6 Local Content Requirements: Upstream

The GoI launched the "Make in India" initiative in 2014 to promote domestic manufacturing industries. Under the General Financial Rules 2017 (GFR), the GoI can provide for mandatory procurement of any goods or services from any category of bidders or provide for preference to bidders on the grounds of promotion of locally manufactured goods or locally provided services. Pursuant to the GFR, the Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry, has issued the Public Procurement (Preference to Make in India), Order 2017 ("PPP-MI Order"). The PPP-MI Order is applicable on procurement of goods, services and works (including turnkey works) by a GoI ministry, department, their attached, subordinate offices, autonomous bodies controlled by the GoI, GoI companies, their joint ventures and special purpose vehicles.

HP-HT (high pressure – high temperature) operations in upstream oil and gas businesses are specifically exempted by MoPNG from the applicability of the PPP-MI Order.

2.7 Development and Production Requirements

Under the RSC, the contractor must take the following steps to proceed towards development and production, once a commercial discovery is made.

- Notification to the management committee (MC) – the contractor must notify the MC of the commercial discovery. The MC comprises two representatives from the GoI, one member from the DGH and two representatives of the contractor.
- Good international petroleum industry practices (GIPIP) tests – after notifying the MC, the contractor must run tests under GIPIP in respect of such discovery, to determine whether the discovery is of potential commercial interest and merits appraisal, and the contractor must submit the information in relation to the particulars of such discovery to the MC.
- Appraisal programme – if the contractor subsequently feels that the discovery merits appraisal, it should submit the appraisal programme to the MC.
- Field development plan – 24 months (for onland blocks) and 36 months (for offshore blocks) from submission of the appraisal programme, the contractor must notify the MC as to whether it intends to submit a field development plan (FDP) in relation to the discoveries. The FDP comprises three parts:
  (a) a detailed technical assessment report for the commercial development of the field;
  (b) a detailed work plan for commercial development of the field, with timelines; and
  (c) estimated costs and budgets for the commercial production from the field, to demonstrate the economic viability of the project.
- Development phase – this begins after approval of the technical assessment report and continues until commencement of commercial production.

2.8 Other Key Terms: Upstream

The terms of the licence of newly awarded blocks are governed by the RSC, the key terms of which are as follows.

Exploration Period

A contractor is granted an exploration period of six years from the date of execution of the RSC. The exploration period is divided into two phases, namely:

- an Initial Exploration Phase consisting of three contract years with an extension of one year where the contract areas fall onland and in shallow water areas, or with a provision for up to two extensions of one year each where the contract areas fall in deep water, ultra-deep water and a specified basin; and
- a Subsequent Exploration Phase consisting of three contract years with a similar extension policy, where the committed work programme is linked to the exploration period.

Work Programme

During the initial exploration period, the contractor must complete the work programme quoted in its bid, which will be its committed work programme for the Initial Exploration Phase. The subsequent work programme is submitted by the contractor prior to the commencement of the Subsequent Exploration Phase. In the event that the contractor fails to fulfil the committed work programme during the Initial Exploration Phase or the subsequent work programme during the Subsequent Exploration Phase, as the case may be, then liquidated damages can be levied on the contractor.

Relinquishment

A contractor may relinquish the contract area:

- on completion of the committed work programme for the Initial Exploration Phase;
- on completion of the subsequent work programme for the Subsequent Exploration Phase; or
- on failure to submit the FDP in relation to the discovery of petroleum within the stipulated time, as provided in the RSC.

On relinquishment of the contract area, the contractor must demobilise all equipment and installations from the area pursuant to the abandonment plan, and perform all site restoration activities as per the applicable guidelines and rules.

Period of Lease

The lease granted to the contractor under the RSC is valid for an initial period of 20 years from the date of the grant.

Domestic Supply

The contract restricts the freedom of the contractor to sell hydrocarbons. The RSC specifies that until India becomes self sufficient and able to meet its total national demand, the contractor is obliged to sell oil and gas produced in India to the Indian market.

Extension

The term of any exploration phase of the exploration period, appraisal period, development phase or the RSC may be extended, on account of a force majeure event, as provided for in the RSC. The DGH, on the recommendation of the MC, can also extend the above-mentioned term.

Liability

The liability of the members comprising the contractor is joint and several under the previous contracts. Some of the recent model contracts provide for liability of the members comprising the contractor to the extent of their individual participating interest.

Termination

The contractor may terminate the RSC with respect to any development or contract area by giving prior written notice of 90 days (contract area) or 180 days (development area). The GoI may terminate the RSC by providing 90 days' prior written notice in the event that the contractor has submitted a false statement, or has engaged in unauthorised extraction of hydrocar-

bon without the permission of the government, or is adjudged bankrupt, or has assigned any interest in the RSC without the prior consent of the government.

Abandonment

Upon expiry or termination of the RSC or relinquishment of the contract area, the contractor is, inter alia, required to:

- remove all equipment and installations from the contract area, pursuant to an abandonment plan; and
- perform site restoration in accordance with GIPIP (the abandonment plan has to be prepared as per the Site Restoration Fund Scheme 1999).

2.9 Transfers of Interest: Upstream Licences and Assets

The PNG Rules allow transfer of the PEL or PML, subject to the prior approval of the government. Furthermore, the RSC stipulates prior written consent of the government for:

- assignment of a participating interest;
- a change in control of the member, or its parent company; or
- a change in the relationship of the contractor with the companies providing the guarantee (typically the parent company).

However, a member of the contractor cannot assign or transfer its right under the RSC, in the event its participating interest is to be retained by the proposed assignor or the percentage interest of the assignee is less than 10% of the total participating interest of all the constituents of the contractor, except in special circumstances where the government, on the recommendation of the MC, may permit otherwise.

The assignee/transferee to whom the participating interest is assigned/transferred has to satisfy the following requirements to obtain the consent of the government:

- the capacity and ability to meet the obligations stipulated in the RSC and willingness to provide an unconditional undertaking to the government to assume its participating interest share of obligations and to provide guarantees as provided in the contract;
- the assignee/transferee should not be a company incorporated in a country with which India has restricted trade or business;
- willingness to comply with any reasonable conditions of the government as may be necessary in the circumstances, with a view to ensuring performance under the contract;
- the assignee/transferee must provide an irrevocable, unconditional bank guarantee from a scheduled commercial bank in India, acceptable to the government, in favour of the government (where the transferee/assignee is an affiliate of the transfer); and
- the assignee/transferee must provide a financial and performance guarantee from its parent entity.

The RSC envisages a deemed approval, in the event the government does not accord its consent, or does not respond to a request for assignment or transfer by a member comprising the contractor, 120 days after such request and receipt of all information.

2.10 Restrictions on Production Rates

The contractor is granted marketing and pricing freedom under the HELP regime and is permitted to sell petroleum and natural gas exclusively to the domestic market from the contract area on an arm's length basis.

The government has also permitted marketing and pricing freedom for new discoveries under existing contracts where the FDPs are approved after 28 February 2019. In October 2020, MoPNG approved the "Natural Gas Marketing Reforms", whereby marketing freedom is granted to the blocks in which production-sharing contracts provide pricing freedom.

For the gas produced from the nomination fields of ONGC/OIL, NELP and Pre-NELP blocks, the New Domestic Gas Pricing Guidelines 2014 (Gas Pricing Guidelines) are applicable. In April 2023, the Gas Pricing Guidelines were revised to ensure a stable pricing regime for domestic gas consumers. The price of domestic natural gas (APM Price) will be 10% of the average price of the Indian crude basket in the preceding month and the prices shall be subject to monthly revision. Gas produced from ONGC and OIL's nomination fields will have a floor price of USD4/mBtu and a ceiling of USD6.5/mBtu. With respect to NELP and Pre-NELP blocks, the APM price so declared would be applicable, subject to the provisions of the PSC.

3. Private Investment in Hydrocarbons: Midstream/ Downstream

3.1 Forms of Private Investment: Midstream/Downstream

Just like the upstream sector, the midstream and downstream sector is liberalised, allowing free participation for private investors, subject to obtaining the requisite approvals and licences from the government. Foreign investors are permitted to invest in the midstream and downstream sector subject to restrictions under the foreign direct investment conditions (see **4.1 Foreign Investment Rules Applicable to Domestic Investments in Hydrocarbons**).

The retail sphere and the pipeline sphere are dominated by PSUs. The development of pipeline infrastructure across the country is not uniform, with states close to gas sources having a robust pipeline infrastructure, while states further from gas sources have a significantly smaller pipeline network.

3.2 Downstream Operations Run by a National Monopoly: Rights and Terms of Access

As discussed in **1.3 National Companies**, the PSU GAIL owns more than half of the pipeline infrastructure in India and is a dominant player in the sector.

Right of Access

Third-party access to the natural gas pipeline is governed by the Petroleum and Natural Gas Regulatory Board (Guiding Principles for Declaring or Authorising Natural Gas Pipeline as Common Carrier or Contract Carrier) Regulations 2009 ("NG Pipeline Guiding Regulations"), while the Petroleum and Natural Gas Regulatory Board (Guiding Principles for Declaring or Authorising Petroleum and Petroleum Products Pipeline as Common Carrier or Contract Carrier) Regulations 2012 ("Petroleum Pipeline Guiding Principles") deal with third-party access to petroleum and petroleum products pipelines and other infrastructure. See **3.11 Third-Party Access to Infrastructure** for further discussion on third-party access.

Transportation

A customer or shipper enters into a contract with an authorised entity under the Petroleum and Natural Gas Regulatory Board (Authorising Entities to Lay, Build, Operate or Expand Natural

Gas Pipelines) Regulations 2008 ("NG Pipeline Regulations") for natural gas transportation or the PNGRB (Authorising Entities to Lay, Build, Operate or Expand Petroleum and Petroleum Products Pipelines) Regulations 2010 ("Petroleum Pipeline Regulations") for petroleum or petroleum product transportation.

Tariffs

The tariff for pipelines authorised under the NG Pipeline Regulations or the Petroleum Pipeline Regulations is fixed by the PNGRB based on the tariff zone, and based on the bid submitted by the entity. For natural gas pipelines laid down before or authorised before the NG Pipeline Regulations, the tariff is determined by the PNGRB as per the Petroleum and Natural Gas Regulatory Board (Determination of Natural Gas Pipeline Tariff) Regulations 2008 ("NG Tariff Regulations") and for petroleum and petroleum products pipeline entities authorised or laid down before the Petroleum Pipeline Regulations the tariff is determined by the PNGRB under the Petroleum and Natural Gas Regulatory Board (Determination of Petroleum and Petroleum Products Pipeline Transportation Tariff) Regulations 2024 ("Petroleum Pipeline Tariff Regulations").

3.3 Issuing Midstream/Downstream Licences

Authorisation from the PNGRB

Pursuant to Section 16 of the PNGRB Act, an entity is not permitted to develop pipelines or a natural gas distribution network without authorisation from the PNGRB. Such authorisation may be granted by the PNGRB either: (i) on receipt of an application for the development of a pipeline; or (ii) if the PNGRB is of the opinion that it is necessary or expedient to develop a pipeline in a specified geographical area. In each case, the PNGRB must invite applications from interested parties to develop such a pipeline. The PNGRB is required to adopt an objective and transparent manner in selecting an entity as specified by the NG Pipeline Regulations or Petroleum Pipeline Regulations, guided by principles including the objective of promoting competition, avoiding infructuous investment, maintaining or increasing supplies, or for securing equitable distribution or ensuring adequate availability of natural gas throughout India. The NG Pipeline Regulations and the Petroleum Pipeline Regulations regulate the manner of submission of a bid, its evaluation, the awarding of authorisations and the development of pipeline infrastructure. An entity is authorised to develop a pipeline after a competitive bidding process, following evaluation of its technical and financial bid. The NG Pipeline Regulations and the Petroleum Pipeline Regulations specify exhaustive technical and financial criteria which an entity must fulfil in order to be awarded authorisation to develop a pipeline.

Other Licences Required for Midstream/Downstream Operations

These include the following:

- a licence under the Petroleum Act 1934 read with the Petroleum Rules 2002 ("Petroleum Rules") is required from the government authority for storage of petroleum, based on the quantity and class of petroleum (similarly, a licence under the Gas Cylinder Rules framed under the Explosives Act 1884 is required for filling, possession, transport and the importation of petroleum);
- a licence under the Manufacture, Storage and Import of Hazardous Chemical Rules 1989; and
- a licence under Static and Mobile Pressure Vessels (Unfired) Rules 2016 framed under the Explosives Act 1884 for manufacturing,

filling, delivery and repair of pressure vessels and transportation of compressed gas.

In addition to the above, construction of pipelines also requires environmental clearance from the Ministry of Environment, Forest and Climate Change (MoEFCC), authorisations from the relevant state pollution control boards under the provisions of the Air (Prevention and Control of Pollution) Act 1981 and the Water (Prevention and Control of Pollution Act) 1974, and other approvals prescribed under applicable local laws.

3.4 Fiscal Terms and Commercial Arrangements: Midstream/Downstream

The prices of petrol and diesel are market-determined in line with changes in the international market prices and other market conditions.

The NG Tariff Regulations and the Petroleum Pipeline Tariff Regulations provide a procedure for determination of the natural gas and petroleum pipeline tariffs, respectively. As per the NG Tariff Regulations, the entity to which the regulations apply must submit all technical, operating, financial and cost data of the natural gas pipeline project to the PNGRB for determination of the natural gas pipeline tariff. The tariff is determined based on a reasonable rate of return on the normative level of capital employed, plus the normative level of operating expenses in the natural gas pipeline. The unit rate of the natural gas pipeline tariff to be charged for a period is calculated based on the discounted cash flow (DCF) methodology, which considers a reasonable rate of return to be the project's internal rate of return. The rate of return on capital employed will be the rate of return on capital employed equal to 12% post-tax. The rate of return on capital employed, once applied to a natural gas pipeline project, remains fixed for the entire economic life of the project. An authorised entity is allowed to charge shippers' compression charges, in addition to the transportation tariff, under the regulations framed by the PNGRB. For petroleum and petroleum products pipelines, the tariff is determined in accordance with the Petroleum Pipeline Tariff Regulations. Depending on when the pipeline was authorised/commissioned the tariff is either benchmarked against the goods tariff table of the Indian Railways or calculated based on the DCF methodology, as applicable.

3.5 Income or Profits Tax Regime: Midstream/Downstream

The IT Act and the GST Act are applicable to midstream and downstream operations (see **2.4 Income or Profits Tax Regime: Upstream**).

3.6 Special Rights for National Companies

No special rights are given to national oil or gas companies in connection with downstream licences and PSUs, and private entities are treated equally.

3.7 Local Content Requirements: Midstream/Downstream

See **2.6 Local Content Requirements: Upstream** for further details.

3.8 Other Key Terms: Midstream/Downstream

Unlike in the upstream sector, no standard contract is entered into by the midstream/downstream licence holder, so the terms of the licence and the principal legislation under which such licence is awarded gain importance. The licensee must abide by the terms of such licence and the legislation under which such licence is granted.

As per the NG Pipeline Regulations, an authorised pipeline entity must meet its annual target of transporting natural gas equal to the volume of natural gas quoted in the bid and the PNGRB will monitor the actual progress in this regard on a quarterly basis. Failure to adhere to the annual target will result in encashment of the performance bond submitted to the PNGRB during the time authorisation, in proportion to the penalty specified under the NG Pipeline Regulations. An authorised entity operating pipeline facilities must enforce safety, technical and services standards including the affiliated code of conduct.

3.9 Condemnation/Eminent Domain Rights

The Petroleum and Minerals Pipelines (Acquisition of Right of User in Land) Act 1962 ("PMPA Act"), provides the framework governing the acquisition of right of user in land for laying pipelines for the transportation of natural gas and matters connected therewith. The PMPA Act provides the procedure for acquisition, restrictions on the use of land, and the compensation payable to the persons interested in the land. Pursuant to the PMPA Act, the GoI, for the purpose of acquisition of land for the laying of pipelines in the public interest, declares its intention by way of notification. Any person interested in the land after the declaration made by the GoI may object within 21 days of such notification. After the resolution of the objection (if any), the GoI may declare that the right to use of the land for the laying of pipelines may be acquired, after which, right over the land vests in the GoI and these rights can be passed on to the state government or any other corporation or entity.

The PMPA Act envisages that fair compensation should be paid to any person who was interested in land acquired under the PMPA Act. Additionally, for the purpose of establishing refineries and terminals, the government may acquire land from the public following the procedure prescribed under the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act 2013, provided such land is acquired for public purpose.

Notwithstanding the above, land may be procured by way of sale or lease entered into directly with the owners of the land.

3.10 Laws and Regulations Governing Transportation

As discussed in **1.1 System of Hydrocarbon Ownership**, the GoI is responsible for the policy framework related to hydrocarbons of India, and the union Parliament legislates on the matters related to hydrocarbons. The PNGRB established under the PNGRB Act regulates activity pertaining to transportation of hydrocarbons in India.

Please refer to **3.2 Downstream Operations Run by a National Monopoly: Rights and Terms of Access** and **3.4 Fiscal Terms and Commercial Arrangements: Midstream/Downstream** for further discussion on rules affecting access and transportation costs.

3.11 Third-Party Access to Infrastructure

The NG Pipeline Regulations and the NG Pipeline Guiding Principles deal with third-party access to natural gas pipelines and other infrastructure, whereas the Petroleum Pipeline Guiding Principles and the Petroleum Pipeline Regulations deal with third-party access to petroleum and petroleum products pipelines. The NG Pipeline Regulations and the Petroleum Pipeline Regulations specify that the authorised pipeline entities are to make extra capacity available for use on a common carrier basis. The entities must also

actively promote the capacity available in the pipelines to encourage maximum utilisation.

The NG Pipeline Guiding Principles and the Petroleum Pipeline Guiding Principles have been framed with an objective to serve consumer interests by promoting competition and avoiding infructuous investments, by optimum utilisation of the natural gas and petroleum pipeline infrastructure. Both the NG Pipeline Guiding Principles and the Petroleum Pipeline Guiding Principles classify pipelines into two categories, namely, a contract carrier (pipelines for transportation of natural gas/petroleum or petroleum products by more than one entity, over and above the entity's own requirement, pursuant to firm contracts for at least one year), and a common carrier (pipelines for transportation of natural gas/petroleum or petroleum products by more than one entity as the PNGRB may declare or authorise from time to time). The company laying, building, operating or expanding a common carrier or contract carrier pipeline has the right of first use of the capacity for its own and its associates' requirements. Common carrier capacity is allocated on a non-discriminatory first come, first served basis.

The NG Pipeline Regulations and the Petroleum Pipeline Regulations recognise the concept of allowing capacity in pipelines to be used by any entity on a non-discriminatory basis, through contract carriers or common carrier arrangements, with entities laying, building, operating or expanding petroleum and petroleum product pipelines.

In the Union Budget 2021–2022, it was announced that an independent gas transport system operator will be set up for facilitation and co-ordination of booking of common carrier capacity in all-natural gas pipelines on a non-discriminatory, open-access basis, and the same is in the deliberation stage.

3.12 Restrictions on Product Sales: Local Market

As discussed in **3.8 Other Key Terms: Midstream/Downstream**, since the midstream/downstream sector is highly regulated, with no contracts, the terms of the licences and the legislation under which such licences are granted are important in determining the various rights of the entities.

With respect to transportation and marketing of natural gas, an authorisation from the PNGRB under the Petroleum and Natural Gas Regulatory Board (Authorising Entities to Lay, Build, Operate or Expand City or Local Natural Gas Distribution Networks) Regulations 2008 ("CGD Regulations") is granted. An entity given authorisation under the CGD Regulations is granted two forms of exclusivity: (i) exclusivity for development of the city gas distribution (CGD) network; and (ii) exemption from purview of a common carrier or contract carrier.

Exclusivity for Development of a CGD Network

The PNGRB (Exclusivity for City or Local Natural Gas Distribution Network) Regulations, 2008 ("CGD Exclusivity Regulations") specify that the PNGRB may grant an authorised entity exclusivity in developing the CGD network for the economic life of the project which, pursuant to the CGD Regulations, is prescribed in the authorisation granted to the successful bidding entity. The period of exclusivity for development of a CGD network granted to an authorised CGD entity is 25 years.

Exemption From Purview of a Common Carrier or Contract Carrier

Pursuant to Section 20 of the PNGRB Act, the PNGRB has the right to declare a particular pipeline as a common carrier or a contract carrier, in which case, other entities may be permitted by the PNGRB to use such pipeline. Pursuant to CGD Regulations, an exemption from purview of a common carrier or contract carrier is granted for a period of eight years. Furthermore, if: (i) the entity meets all works programme targets in a timely manner, an extension of two years is granted; and (ii) if the entity does not meet all works programme targets in a timely manner but completes the cumulative works programme at the end of the eighth year, an extension of one year is granted, for exemption from purview of a common carrier or contract carrier.

3.13 Laws and Regulations: Imports and Exports

While India does not export crude oil or LNG, petroleum products may be exported, subject to obtaining a no-objection certificate from the MoPNG.

3.14 Transfers of Interest: Midstream/ Downstream Licences and Assets

Any transfer of licences granted under the Petroleum Rules is subject to prior approval by the issuing authority.

The authorisation granted by the PNGRB for laying, developing and operating a petroleum or natural gas pipeline, or a CGD network, is subject to lock-in periods and any transfer of such authorisation is subject to the approval of the PNGRB. Typically, the PNGRB allows the transfer of authorisation on the same terms and conditions applicable to the transferor.

4. Foreign Investment

4.1 Foreign Investment Rules Applicable to Domestic Investments in Hydrocarbons

Foreign Investment in Petrol and Gas

Automatic route

100% foreign direct investment (FDI) under the automatic route is permitted in the following:

- exploration activities of oil and natural gas fields;
- infrastructure related to the marketing of petroleum products and natural gas;
- marketing of natural gas and petroleum products, petroleum product pipelines and natural gas pipelines; and
- LNG re-gasification infrastructure, market study, formulation and petroleum-refining in the private sector.

FDI in petroleum-refining by the PSUs has been permitted to the extent of 49% under the automatic route, without any divestment or dilution of domestic equity in the existing PSUs. In July 2021, the FDI policy was further liberalised allowing FDI up to 100% under the automatic route for petroleum-refining PSUs, subject to in-principle approval for strategic disinvestment of such PSU by the GoI.

In March 2021, the government put LNG imports under the Open General Licensing (OGL) category and the establishment of LNG infrastructure, including LNG terminals, is also under 100% FDI (automatic route) to promote the usage and distribution of LNG. Further, in July 2021, the GoI amended the FDI policy on the petroleum and natural gas sector, pursuant to which foreign investment of up to 100% under the automatic route has been allowed in petroleum-refining PSUs where an in-principle approval for strate-

gic disinvestment of a PSU has been granted by the GoI.

Government route

Under the extant Indian foreign exchange laws, an entity of a country which shares its land border with India, or the beneficial owner of an investment into India who is situated in, or is a citizen of, any country which shares a land border with India, can only invest in an Indian entity with the approval of the GoI, irrespective of the sector involved. This approval is applicable whether the beneficial ownership is held directly or indirectly.

Dispute Resolution in Relation to Foreign Investors

The RSC does not provide for international arbitration and arbitration under the RSC is pursuant to the (Indian) Arbitration and Conciliation Act 1996, with the venue of the arbitration being New Delhi. A contractor does not therefore have the freedom to choose the arbitration procedure and law.

For the downstream sector, in the absence of any contract governing the rights of private entities vis-à-vis the government, the legislation under which the licence or authorisation is granted determines the dispute resolution process. Other than its regulatory function, the PNGRB also performs an adjudicatory function for the downstream sector and has the jurisdiction to hear and decide any dispute arising from the PNGRB Act and its regulations.

4.2 Sanctions

In India, there are currently no specific sanctions with respect to investing in the oil and gas sector. However, any investment in that sector needs to be in compliance with exchange control regulations and applicable laws.

5. Environmental, Health and Safety (EHS)

5.1 Environmental Laws and Environmental Regulator(s)

Key Environmental Laws

The key environmental laws applicable to various industries, including to entities in the oil and gas sector, are listed below.

Water (Prevention and Control of Pollution) Act 1974 ("Water Act")

The Water Act was enacted to govern the prevention and control of water pollution and the maintenance/restoration of the wholesomeness of India's water. Pursuant to Section 25 of the Water Act, prior consent of the relevant State Pollution Control Board (SPCB) is required to establish any industry which is likely to discharge sewage or trade effluent into any land or water source.

Air (Prevention and Control of Pollution) Act 1981 ("Air Act")

The Air Act was enacted to provide for the prevention, control and abatement of air pollution. Under Section 19 of the Air Act, the state governments are empowered to declare any areas within the state as air pollution control areas. Section 21 of the Air Act prohibits the undertaking of industrial activities in the air pollution control area without the previous consent of the SPCB.

Environment Protection Act 1986 ("EP Act")

This was enacted to govern the protection and improvement of the environment and, in furtherance of the same, the MoEFCC issued a notification in 2016 dealing with environmental impact assessments ("EIA Notification") to minimise the adverse impact of development projects on the environment. Furthermore, as per Coastal Reg-

ulation Zone Notification 2011, the exploration and extraction of oil and natural gas in the coastal zone requires permission from the MoEFCC.

Hazardous Wastes (Management, Handling and Trans-boundary Movement) Rules 2016 ("HWM Rules")

The HWM Rules were framed under the EP Act to provide for the management and transportation of hazardous waste. Under Rule 6 of the HWM Rules, the occupier of a facility that generates hazardous waste is required to obtain authorisation under the HWM Rules from the relevant SPCB.

Forest (Conservation) Act 1980 ("Forest Act")

Pursuant to Section 2 of the Forest Act, prior permission is required from the forest department of the relevant state, along with subsequent approval from the MoEFCC, for use of forest land for a non-forest purpose.

Wildlife (Protection) Act 1972

This also applies to gas/oil exploration.

Oil Mines Regulations 2017

This includes detailed provisions relating to the health, safety and welfare of workers in oil mines.

The Merchants Shipping Act 1958

This act stipulates safeguards and civil liability in the case of oil pollution damage.

Key Environmental Regulators

These are the MoEFCC and the Central Pollution Control Board.

5.2 Environmental Obligations for a Major Hydrocarbon Project

As per the EIA Notification, all projects in respect of offshore and onshore oil and gas development and production, except exploration, require prior environmental clearance. Seismic surveys, which are part of exploration surveys, are exempted, provided the concession areas have previous clearance for physical surveys.

The assessment is carried out by the Expert Appraisal Committee (EAC) set up under the aegis of the MoEFCC. After the assessment is completed, the EAC makes recommendations to the regulatory authority concerned either with granting prior environmental clearance on stipulated terms and conditions, or rejecting the application for prior environmental clearance, together with reasons.

Environmental Impact Assessments

An EIA involves three stages:

Scoping

At the scoping stage, the EAC determines comprehensive terms of reference addressing all relevant environmental concerns for preparation of the EIA report. In February 2020, sector-specific standard terms of reference were developed in order to streamline the process of scoping and bring uniformity across the proposals. All new projects or activities are to be referred to the EAC by the regulatory authority within 30 days from the date of application, for recommending the specific terms of reference. If the regulatory authority does not refer the matter to the EAC within 30 days of the date of application, standard terms of reference will be issued by the regulatory authority on the 30th day.

Public consultation

This public hearing, at the site or in close proximity to it, is conducted to ascertain the concerns of the locals and obtain responses in writing from other stakeholders. After completion of the public consultation, the applicant must address material environmental concerns expressed dur-

ing this process and make appropriate changes to the draft EIA and environmental management plan.

Appraisal

This stage covers detailed scrutiny by the EAC of the application and the final EIA report. The appraisal is done transparently and the applicant is invited to furnish any necessary clarifications. On conclusion of this proceeding, the EAC makes recommendations either to grant environmental clearance on stipulated terms and conditions, or to reject the application for environmental clearance, together with reasons.

The MoEFCC, pursuant to a notification in January 2020, changed onshore and offshore oil and gas exploration activities from Category A to Category B2. As such, oil and gas exploration activities will now require environmental clearance only from the states and will not require preparation of an EIA report or public hearing. Development or production activities, both on offshore or onshore fields as hydrocarbons blocks, continue to fall under Category A, requiring an EIA report and public hearing.

5.3 Offshore Environmental, Health and Safety (EHS) Requirements

In addition to the general environmental, health and safety regulations, entities involved in offshore development must adhere to the Petroleum and Natural Gas (Safety in Offshore Operations) Rules 2008 ("PNG Offshore Rules"). These rules have been framed under the Oilfields Act and prescribe safety standards and measures to be taken for the safety of offshore oil and gas operations. The PNG Offshore Rules stipulate various consent requirements and prescribe penalties for contravention of these rules.

5.4 Decommissioning Requirements

Under the PNG Rules, on termination of the PEL or PML, the contractor has to deliver the leased area and any wells contained therein in good condition. The licensee/lessee is given six months to remove or dispose of any petroleum recovered during the period of such licence or lease, as well as stores, equipment, tools and machinery, and other improvements on the land covered by the licence or lease. Failure to remove or dispose of the materials from the land within the aforementioned timeline, entitles the government to auction the material lying on the land.

Under the RSC regime, upon expiry or termination of the RSC or relinquishment of the contract area, the contractors are, among other things, required to:

- remove all equipment and installations from the contract area pursuant to an abandonment plan; and
- perform site restoration in accordance with any specific guidelines, rules or regulations formulated by the government in relation to site restoration and, in the absence of any specific guidelines, rules or regulations by GIPIP, to take all other actions necessary to prevent hazards to human life, to the property of others and to the environment.

The government has published the Site Restoration and Abandonment Guidelines for Petroleum Operations which provides detailed guidelines for decommissioning offshore and onshore production sites.

For blocks under Discovered Small Field Policy 2015, it is also envisaged that a site restoration fund should be maintained by the contractor, as per the Site Restoration Fund Scheme 1999.

5.5 Climate Change Laws

Under the Paris Agreement, India has pledged to reduce the emission intensity of its gross domestic product (GHG emissions per unit GDP) by 45% over 2005 levels by 2030 and to create an additional carbon sink of 2.5–3 billion tonnes of CO_2-equivalent through additional forest and tree cover. While no specific legislation has been enacted to fulfil the commitment to the Paris Agreement, the government has formulated various guidelines and policies aimed to promote renewable energy. In 2008, the government launched the National Action Plan on Climate Change, under which eight national missions on advancing India's climate change-related objectives are provided, including missions relating to solar power, water, sustainable agriculture and energy efficiency.

See **5.1 Environmental Laws and Environmental Regulator(s)** for specific legislation pertaining to the environment which is, in turn, related to climate change.

5.6 Local Government Limits on Development

As discussed in **1.1 System of Hydrocarbon Ownership**, under the constitutional scheme of India, power to legislate is divided between the centre and the states. As a result, the government authorities from which licences are obtained will vary according to the authority legislating on the subject. Furthermore, in India there is decentralisation of power to local authorities for better administration.

6. Impacts of Energy Transition

6.1 Energy Transition Laws and Regulations

Energy transition plays an important role in the GoI policies, with a focus on clean energy. India set a target of net zero emissions by 2070 at COP26 and has been actively promoting use of renewable energy. In line with its commitment to achieve 50% cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030, the GoI plans to invite bids for 50 GW of renewable energy capacity annually for the next five years – ie, from 2023–24 until 2027–28.

Some of the major government programmes focused on energy transition are as follows.

- National Green Hydrogen Mission – The GoI has launched the National Green Hydrogen Mission, providing an enabling framework for the development of green hydrogen in the country. The mission provides a roadmap for 2030, to make India a global hub for production, usage and export of green hydrogen and a framework for creation of a comprehensive green hydrogen ecosystem. The GoI aims to achieve 5 MMT of green hydrogen production capacity per annum and to reduce the dependency on import of fossil fuels. The GoI has proposed a phased approach for creating a hydrogen ecosystem, with the first phase focusing on creating demand for green hydrogen and bringing down of cost of green hydrogen for greater deployment. The key sectors for demand creation would be refineries, fertilisers and CGD sector. The second phase would focus on wider coverage of green hydrogen in other sectors to achieve net zero emissions. Under the mission, the GoI inter alia provides for Strategic

Interventions for Green Hydrogen Transition Programme which would focus on development of domestic manufacturing units for electrolysers and other technology along with production of green hydrogen and setting up of pilot projects in the sectors with potential to adopt and transition to green hydrogen, such as steel, heavy duty mobility, and shipping, etc.

- National Policy on Biofuels 2018 ("Biofuel Policy") – The policy published by MoPNG seeks to increase the use of biofuel in India's energy and transportation sector. The Biofuel Policy categorises biofuels as "Basic Biofuels", namely First Generation (1G) bioethanol and biodiesel and "Advanced Biofuels", namely Second Generation (2G) ethanol, Municipal Solid Waste (MSW) to drop-in fuels, Third Generation (3G) biofuels, bio-CNG etc, to enable extension of appropriate financial and fiscal incentives under each category. The Biofuel Policy provides for an indicative target of 20% blending of ethanol in petrol and 5% blending of biodiesel. To enable stakeholders to make financing available, the policy envisages declaring oil expelling/extraction and processing units for production of biodiesel and storage and distribution infrastructure for biofuels as a priority sector for the purpose of lending by financial institutions.
- Green Credit Programme under the Environment (Protection) Act – The GoI published the Green Credit Rules 2023 under the Environment (Protection) Act, 1986 on 12 October 2023. Pursuant to this "Green Credit Programme" is proposed to be launched at a national level to leverage a competitive market-based approach for Green Credits, incentivising voluntary environmental actions of various stakeholders. The Green Credit Programme is envisaged to encourage private sector industries and companies to meet their existing obligations, stemming from other legal frameworks, by conducting activities which generate Green Credits. Green Credits will arise from a range of sectors like tree plantation, sustainable agriculture, waste management and air pollution reduction. Green Credits will be made available for trading on a domestic market platform. It is envisaged that an activity generating Green Credits may also get carbon credits from the same activity under the carbon market.
- Credit Trading Scheme Carbon, 2023 – On 28 June 2023, the GoI notified the Carbon Credit Trading Scheme, 2023 under the Energy Conservation Act, 2001. The primary objective of the Carbon Credit Trading Scheme is to establish a robust platform for the trading of carbon credits. Such credits may be traded within the country's industries and entities to control the emissions of greenhouse gases. The scheme intends to encourage obligated entities to minimise their carbon footprint by reducing emissions.
- Sustainable Alternative Towards Affordable Transportation ("SATAT") initiative to promote Bio-CNG – The SATAT Scheme was launched by the MoPNG for promoting use of CBG (bio-CNG) in the CNG (transport) and PNG (domestic) sector of City Gas Distribution (CGD) supplies of natural gas. The SATAT Scheme has envisaged developing 5,000 CBG plants with total CBG production capacity of 15 Million Metric Tonne Per Annum (MMTPA) – ie, equivalent to 54 MMSCMD of gas by 2023–24. Under the scheme Oil Marketing Companies (OMCs) invite Expression of Interest (EoI) from potential entrepreneurs to establish CBG production plants and make CBG available in the market for automotive fuel use.

Notwithstanding the above, the government has been actively promoting clean energy transition by providing financial incentives and support to stakeholders in the clean energy ecosystem.

6.2 Energy Transition and Oil and Gas Development

Several state-owned oil and gas majors such as ONGC, IOCL, HPCL and BPCL and GAIL have prepared roadmaps for net zero emissions and are earmarking significant amounts towards investment in energy transition projects.

The PNGRB is considering using the natural gas pipeline and the CGD networks developed as the first choice for transportation of green hydrogen, and recently organised a stakeholder interaction on the topic. The vast pipeline networks will facilitate transporting the green hydrogen from one part of the country to the other by blending it with natural gas. This would aid the government's Hydrogen Mission and will promote use of green hydrogen in the country. IOCL has resolved to achieve net zero operational emission by 2046, and the plan encompasses both scope 1 and 2 emissions.

In July 2022, the MoPNG had issued a Draft 2030 Roadmap for CCUS for upstream exploration and production companies and similarly, in November 2022, Niti Aayog also issued a report on policy framework for adoption of CCUS technologies. However, no subsequent legislation or scheme was formulated pursuant to the above.

6.3 Other Energy Transition Considerations

With the net zero commitment, the government has been promoting clean energy investments to reduce fossil fuel dependency and fostering a more sustainable energy landscape. India's energy transition is based on a holistic approach and, being historically dependent on conventional fuels, the energy-transition plans of the government also focus on the oil and gas industry. Natural gas is one such strategic fuel and, given its versatility and low carbon content, the government is actively promoting the same. While the government has adopted a multi-pronged strategy for promoting energy efficiency, efforts have been made to increase the net-geographical area under exploration. From time to time, the DGH has invited bids for new blocks under HELP and DSF and has promoted exploration activities.

7. Additional Information

7.1 Unconventional Interests: Upstream

In 2018, the GoI issued a policy framework for the exploration and exploitation of unconventional hydrocarbons ("Policy on Unconventional Hydrocarbons"). Until the launch of the policy, contractors were not permitted to exploit unconventional hydrocarbons under licence or in leased areas. In furtherance of the Policy on Unconventional Hydrocarbons, the HELP and DSF regime focuses on a uniform licensing policy under which a single licence is granted encompassing exploration and production of all hydrocarbons, including unconventional hydrocarbons, such as shale gas or oil.

In line with the Policy on Unconventional Hydrocarbons, the definition of petroleum under the PNG Rules was also amended to include unconventional hydrocarbons.

7.2 Liquefied Natural Gas (LNG)

The PNGRB Act mandates registration of any entity establishing or operating an LNG terminal. The PNGRB (Eligibility Conditions for Registration of Liquefied Natural Gas Terminal) Rules

2012 stipulate the eligibility conditions for registration of an LNG terminal and state that any entity desirous of establishing an LNG terminal and fulfilling the eligibility condition has to apply to the PNGRB. On 5 June 2024, the PNGRB circulated the draft PNGRB (Registration for Establishing & Operating Liquefied Natural Gas (LNG) Terminals) Regulations 2024 ("Draft LNG Guidelines") seeking comments from stakeholders. The Draft LNG Guidelines provide a detailed procedure for obtaining registration for entities desirous of establishing and operation of LNG terminals.

7.3 Unique or Interesting Aspects of the Hydrocarbon Industry

In September 2020, the PNGRB published the PNGRB (Gas Exchange) Regulations, 2020 ("Gas Exchange Regulations"). This was the first time the PNGRB had come out with comprehensive gas exchange regulations, allowing trading in gas contracts through a gas exchange and allowing buyers and sellers (including but not limited to aggregators, CGD companies, consumers and trading licensees) to transact on gas contracts. Currently, the Gas Exchange Regulations are applicable to the following contracts:

- delivery-based contracts for natural gas or LNG transacted on the gas exchange including:
  - (a) day-ahead contracts (delivery of gas on the next day);
  - (b) intra-day contracts (delivery of gas occurs on the transaction day); and
  - (c) term-ahead contracts (physical delivery of gas occurs two days from the date of transaction);
- pipeline capacity contracts, which are for secondary trade of natural gas pipeline capacity; and
- any contract for trading of natural gas or LNG, including those with a price link to other established markets or reported indices, either in India or elsewhere.

Under the Gas Exchange Regulations, a gas exchange or clearing corporation has to obtain authorisation from the PNGRB before setting up its operations, subject to fulfilling eligibility criteria set out in the Gas Exchange Regulations. Every gas exchange or clearing corporation must maintain a net worth of INR250 million at all times, as well as shareholding patterns, as provided in the Gas Exchange Regulations. Authorisation to operate as a gas exchange is given for 25 years.

Pursuant to the Gas Exchange Regulations, India Gas Exchange Limited (IGX) was granted authorisation by the PNGRB in December 2020, thereby becoming the first gas exchange in India. IGX allows buyers and sellers to engage in spot and forward gas contracts at designated physical hubs.

7.4 Material Changes in Law or Regulation

The Government of India has been constantly bringing about changes to simplify procedures and to promote ease of doing business in the sector. The following are the recent material changes in the past year in the oil and gas laws and regulations.

Mandatory Blending of Compressed Biogas in CNG (Transport) and PNG (Domestic) Segments of CGD Sector

In November 2023, the GoI approved phased mandatory blending of compressed bio gas (CBG) in CNG (transport) and PNG (domestic) segments of the CGD sector. The CBG blending obligation (CBO) will be voluntary for FY 2024–

25, becoming mandatory from FY 2025–26, with blending targets set at 1%, 3%, and 4% for FY 2025–26, 2026–27, and 2027–28 respectively, and increasing to 5% from 2028–29 onwards.

Marketing Margin for Domestic Gas Supply to Fertilizer (Urea) Units

On 1 February 2024, the Union Cabinet approved the marketing margin on domestic gas supplied to fertilizer (urea) units between 1 May 2009 to 17 November 2015. This approval is in the nature of a structural reform. Gas marketing companies impose a marketing margin on consumers, beyond the gas cost, to account for the extra risks and expenses related to gas marketing.

Sale and Resale of Gas Produce From Discoveries in Deepwater, Ultra Deepwater and High Pressure High Temperature Areas with Marketing and Pricing Freedom

In January 2023, the MoPNG clarified that the bidders for gas produced from discoveries in deepwater, ultra deepwater and HP-HT areas will have to specify whether they wish to purchase gas through the auction for own use as end consumers or as traders. Traders are allowed to resell the gas to another trader or end consumer subject to a trading margin specified by the government. In case the bidders are the end consumers, then any quantity of gas which remains unconsumed for any reason including in cases of unplanned plant shutdowns can be resold subject to separate conditions to be notified by MoPNG in this regard.

Deregulation of Sale of Domestically Produced Crude Oil

On 11 July 2022, the GoI notified the deregulation of sale of domestically produced crude oil. Pursuant to this, exploration and production (E&P) companies have been given marketing freedom to sell crude oil from their fields directly to the domestic market. Previously, all E&P companies had to sell crude oil produced from their fields to the government or its nominee or government companies. Pursuant to the notification, the condition in Production Sharing Contracts (PSCs) to sell crude oil to the GoI or its nominee or company of GoI will stand waived off.

Trends and Developments

Contributed by:
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Khaitan & Co

Khaitan & Co was founded in 1911 and is one of India's oldest and best-recognised full-service law firms. Built on foundations of integrity, simplicity, dedication and professionalism, the firm has expanded its presence in India from Kolkata (1911) to New Delhi (1970) to Bangalore (1994) to Mumbai (2001) to Chennai (2021), to Singapore (2021) to Pune (2024) and to Ahmedabad (2024). The firm takes pride in its steady growth and celebrated its centenary in 2011. Khaitan & Co has advised several domestic and international clients on the entire value chain of the oil and gas sector, and the team regularly deals with diverse transactions, including upstream, midstream and downstream issues; pipelines; liquefied natural gas (LNG); distribution networks; trading; refineries and petrochemicals. The firm assists clients on the entire gamut of project development contracts; mergers and acquisitions; joint ventures; privatisations; finance; tax; and environmental, litigation and regulatory issues.

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India is one of the fastest growing economies in the world. Its GDP grew by 8.2% in 2023–24 and is projected to grow by 7.2% in 2024–25. With industries that have been historically dependent on conventional fuels, India faces the challenge of balancing its energy needs with environmental sustainability. The transition from conventional fossil fuels to clean energy sources is important in achieving this equilibrium. The Government of India (GoI), as a part of the Nationally Determined Contributions (NDC), has committed to achieve about 50% of cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030, and to gradually transition from fossil-fuel-generated energy sources to renewables. Aware of its commitment to net zero emission, GoI has prescribed a renewable energy bid trajectory of 50 GW per annum from FY 2023–24 to FY 2027–28 and has been promoting policies for increasing and expediting the implementation of an entire value chain of renewable energy project development. India has been adding renewable energy capacity at a record pace, with several implementing agencies already exceeding their bidding goals for solar, hybrid, wind, and round-the-clock projects for the current financial year. Recent tenders for firm and dispatchable renewable energy (FDRE) projects have gained significant traction. Given the intermittent nature of renewable energy, integrating energy storage systems with renewable energy projects ensures a round-the-clock supply of renewable power.

To facilitate the procurement of FDRE power by distribution companies from grid-connected renewable energy power projects with energy storage through tariff-based competitive bidding, the Ministry of Power introduced the Guidelines for Tariff Based Competitive Bidding Process for Procurement of Firm and Dispatchable Power from Grid Connected Renewable Energy Power Projects with Energy Storage Systems ("FDRE Bidding Guidelines"). These guidelines have paved the way for procurers to float tenders for the procurement of FDRE. With the clarity on projects and timelines set out in the guidelines, generators are also coming forward to participate in the tenders.

In addition, the Indian oil and gas sector has witnessed a steady growth over the years. India is one of the largest consumers of energy in the world and most of the demand is met by hydrocarbons. According to the International Energy Agency, India will become the largest source of global oil demand growth by 2030. Crude oil and natural gas requirements are primarily met by imports. The GoI is aware of the necessity of oil and gas to its economy, has been promoting policies and reforms to reduce its import dependency and has promoted domestic production by actively tapping the green shoots. The country has been pursuing its energy transition programme strategically by finding a balance between its energy transition goals and the oil and gas sector. Through its policy reforms, the government has ensured its commitment to energy security, ease of doing business and energy transition. The GoI has been actively pursuing various reforms in the upstream, midstream and downstream sectors. Some of the key reforms are as follows:

- revision of natural gas pricing guidelines to ensure stable pricing of natural gas;
- concessions on royalty rates on the early monetisation of hydrocarbon fields;
- offering the marginal fields of national oil companies for exploration and production under the Discovered Small Field (DSF) Policy;

- providing incentives in the form of revenue-sharing exemptions for a certain category of sedimentary basin;
- lifting restrictions on exploration in previously designated "no-go zones"; and
- promoting the ease of doing business by reducing the number of approvals required under the exploration contract and through the introduction of single-window clearances.

Currently active bid rounds for oil and gas blocks are as follows:

- the GoI has recently launched the Open Acreage Licensing Policy Bid Round IX offering 28 blocks with an area of approximately 1,36,596 square kilometres. Out of 28 blocks on offer, nine blocks are in onland, eight blocks are in shallow water, and 11 blocks are in ultra deep-water areas. The bid due date is 31 August 2024; and
- the GoI has also launched a special DSF Bid Round 2024 offering two DSF located in Mumbai Offshore and one coal bed methane field located in West Bengal. The bid due date is 13 September 2024.

Gas-Based Economy

The GoI has set a target to raise the share of natural gas in its energy mix to 15% in 2030, and natural gas is one of the important pillars in India's energy transition goals. Some of the significant initiatives taken by the government for providing impetus to a gas-based economy are as follows:

- marketing and pricing freedom to gas;
- expansion of national gas grid;
- promotion of city gas distribution (CGD) and expansion of CGD network;
- setting up of LNG terminals;
- allocation of domestic gas to compressed natural gas (transport)/piped natural gas (domestic); and
- Sustainable Alternative Towards Affordable Transportation (SATAT) initiatives to promote Bio-CNG.

Expansion of city gas distribution (CGD) network

In a bid to increase the natural gas in the energy mix of the country to 15% (currently at 6%), the GoI has been promoting the CGD infrastructure which comprises piped natural gas infrastructure and compressed natural gas stations. The CGD sector has witnessed outstanding growth over the years with active private participation from domestic and foreign investors. The Petroleum and Natural Gas Regulatory Board (PNGRB) is the regulatory body entrusted with regulating the CGD sector, which authorises entities to develop the CGD network in India. The PNGRB recently concluded its 12th CGD bidding round, pursuant to which PNGRB seeks to achieve 100% coverage of the country's area (except islands) for the development of the CGD network.

National gas grid pipeline

"One Nation, One Gas Grid" is one of the ambitious projects of the GoI, for the development of a national gas grid which integrates various regional grids. The PNGRB is the body entrusted to authorise the development of pipelines. The PNGRB has authorised approximately 33,622 km of gas pipeline networks in the country, of which 24,623 km is in operation, and a total of 10,860 km length of pipelines are under various stages of construction. The PNGRB amended the PNGRB (Determination of Natural Gas Pipeline Tariff) Regulations 2008 to incorporate the regulations pertaining to unified tariff for natural gas pipelines with a mission of "One Nation, One Grid and One tariff". The introduction of a lev-

elised, unified tariff will benefit consumers and increase gas use in the country.

Further, the PNGRB is advancing efforts to transport green hydrogen by blending it with natural gas in existing transmission lines. Given the network of authorised natural gas transmission pipelines, these pipelines are the primary choice for green hydrogen transport. This infrastructure will connect areas abundant in renewable energy resources (and therefore high green hydrogen supply) with major hydrogen consumers, including fertilizer plants, refineries, and heavy iron and steel industries.

Draft LNG Terminal Regulations

The PNGRB recently published draft PNGRB (Registration for Establishing & Operating Liquefied Natural Gas (LNG) Terminals) Regulations 2024 ("Draft LNG Terminal Regulations") for comments from stakeholders. In India, there are no regulations providing procedure for obtaining registration for LNG terminals, while the PNGRB Act 2006 mandates registration of any entity establishing or operating an LNG terminal. The Draft LNG Terminal Regulations, if adopted and notified, will signal the first time PNGRB has provided for the procedure to obtain registration of an LNG terminal in India. The Draft LNG Terminal Regulations define an LNG terminal as "an infrastructure required to: (i) receive liquefied natural gas; (ii) store liquefied natural gas; (iii) enable regasification of liquefied natural gas; (iv) transport re-gasified liquefied natural gas to the outside boundaries of the facility; and (v) transport liquefied natural gas to the outside boundaries of the facility; and such an infrastructure on-land LNG terminal, Floating Storage Regassification unis (FSRU), small-scale LNG storage and regassification terminals or small-scale LNG-producing facilities at land-locked sites shall also form a part of the definition Liquefied Natural Gas terminal".

National Green Hydrogen Mission

The National Hydrogen Mission ("Hydrogen Mission") is an ambitious energy transition mission of GoI pursuant to which the government aims to make India a global hub for production, utilisation and export of green hydrogen and its derivatives. The GoI also published the Green Hydrogen Policy on 17 February 2022, which defined green hydrogen and green ammonia as hydrogen or ammonia produced by way of electrolysis of water using renewable energy, including renewable energy which has been banked or produced from biomass.

The GoI has committed nearly INR197 billion towards the Hydrogen Mission and the Ministry of New and Renewable Energy (MNRE) has been assigned the responsibility for overall co-ordination and implementation of the Hydrogen Mission. The Hydrogen Mission provides a blueprint by providing a robust framework for the creation of a green hydrogen ecosystem. The GoI aims to achieve the following through the Hydrogen Mission:

- development of green hydrogen production capacity of 5 MMT per annum entailing INR8 trillion investments;
- renewable energy capacity addition of 125 GW;
- creation of 0.6 million jobs; and
- abatement of 50 MMT of annual greenhouse gas emissions.

On 19 August 2023, the MNRE published an office memorandum on the green hydrogen standard for categorising hydrogen as "green hydrogen". The standard defines green hydrogen as the hydrogen obtained from renew-

able resources including through electrolysis or biomass conversion. The standard also limits greenhouse gas emissions arising from water treatment, electrolysis, gas purification, drying and compression of hydrogen, biomass processing, heat/steam generation and conversion of biomass, to less than or equal to 2 kg carbon dioxide equivalent/kg hydrogen, taken as an average over the last 12-month period. The MNRE's green hydrogen standard has also envisaged the release of a detailed methodology for measuring, reporting, monitoring, on-site verification, and certification of green hydrogen.

The GoI intends to implement the Hydrogen Mission in a two-phased manner, with the first phase being from 2022/23 to 2025/26, with focus on creation of demand and bringing down the cost of production to ensure wide coverage. In this phase, the government intends to promote use of green hydrogen in the refineries, fertilizers and CGD sectors. The second phase will be from 2026/27 to 2029/30, in which the GoI intends to achieve accelerated growth in production of green hydrogen and scale up the projects. In the second phase, the government also plans to deploy green hydrogen usage in steel, mobility and shipping industries based on the evolution of cost and demand in the first phase.

The MNRE notified the scheme guidelines for implementation of Strategic Interventions for Green Hydrogen Transition (SIGHT) Programme – Component II: Incentive Scheme for Green Hydrogen Production (under Mode 1) on 28 June 2023, and ten companies were awarded a tender for setting up production facilities for green hydrogen in India. On 12 January 2024, eight companies were awarded a tender for setting up manufacturing capacities for electrolysers under SIGHT Scheme (Tranche-I), for a total capacity of 1,500 MW per annum.

On 16 January 2024, the GoI notified the scheme guidelines for SIGHT Mode 2A (aggregation model for Green Ammonia) and Mode 2B (aggregation model for Green Hydrogen). Under Mode 2A, the implementation agency is to aggregate demand and call for bids for production and supply of green ammonia at the lowest cost through a competitive selection process with the incentive being fixed and under Mode 2B. The implementation agency will call for bids for production and supply of green hydrogen at the lowest cost for a single refinery or multiple refineries, as decided by the implementing agency, through a competitive selection process with the incentive being fixed.

Following the Hydrogen Mission, several states such as Andhra Pradesh, Maharashtra, Punjab, and Uttar Pradesh have published their own hydrogen policy to promote development of green hydrogen projects in the respective states.

Biofuel and Bio-Gas

National Biofuel Policy 2018 (Biofuel Policy)

The GoI envisages the increased use of biofuels in the country's energy and transportation sector over the next decade through the Biofuel Policy. Key points of the policy include the following.

- Categorisation of biofuels – The policy classifies biofuels into "basic biofuels", such as First Generation (1G) bioethanol and biodiesel, and "advanced biofuels", including Second Generation (2G) ethanol, Municipal Solid Waste (MSW) to drop-in fuels, Third Generation (3G) biofuels and bio-CNG. This classification facilitates the extension of suitable financial and fiscal incentives for each category.
- Financing facilitation – To help stakeholders secure financing, the policy designates oil expelling/extraction and processing units for

biodiesel production, as well as biofuel storage and distribution infrastructure, as priority sectors for lending by financial institutions.
- Foreign direct investment (FDI) – The policy permits 100% FDI in biofuel technologies through the automatic approval route, provided the produced biofuels are for domestic use only.
- Encouragement of indigenous production – The policy promotes local biofuel production and allows the import of feedstock for biodiesel production as needed, based on domestic feedstock availability and blending requirements.

In 2022, the Biofuel Policy was amended and the target for blending 20% ethanol in petrol and 5% biodiesel in diesel was pre-dated from 2030 to 2025. Initially, the policy prohibited biofuel exports due to insufficient domestic availability. However, the 2022 amendment allows for biofuel exports under specific conditions, such as a surplus of biofuels, high biofuel prices leading to poor domestic sales, or in cases of emergencies, disasters, or other medical needs.

Sustainable Alternative Towards Affordable Transportation (SATAT) scheme

The SATAT Scheme aims to establish 5,000 compressed biogas (CBG) plants with a total production capacity of 15 million metric tonnes per annum (MMTPA) through private entrepreneurs. Under this scheme, oil marketing companies invite Expressions of Interest (EoI) from potential entrepreneurs to set up CBG production plants and supply CBG for automotive fuel use.

To ensure the offtake of CBG, the Ministry of Petroleum and Natural Gas (MoPNG) issued guidelines for synchronising CBG with the CGD network. The CBG-CGD Synchronisation Scheme, successfully implemented nationwide since 19 April 2021, designates GAIL (India) Limited for gas offtake, subject to the rights of oil marketing companies as the Letter of Intent (LOI) issuers and CBG producers' commitments to other buyers.

As part of the interim Union Budget 2024, the GoI announced phased mandatory blending of CBG in compressed natural gas (CNG) for transport and Piped Natural Gas (PNG) for domestic use. Both the SATAT Scheme and the CBG-CGD Synchronisation Scheme include a pricing mechanism for procuring CBG. To encourage the establishment of CBG plants and facilitate developers in achieving financial closure, CBG prices have been indexed to the current retail selling price of CNG.