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## India

## Energy - Oil & Gas

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This country-specific Q&A provides an overview of energy - oil & gas laws and regulations applicable in India.

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# India: Energy - Oil & Gas

## 1. Does your jurisdiction have an established upstream oil and gas industry? What are the current production levels and what are the oil and gas reserve levels?

India has a well-established upstream oil and gas industry with both state owned and private companies engaged in the sector as operators of oil and gas blocks.

As per the data issued by India's Petroleum Planning and Analysis Cell (PPAC), which operates under the aegis of Government of India: for the period between December 2023 November 2024, the provisional natural gas production was at 36,601 million metric standard cubic meters and the provisional production of crude oil and condensate was at ~28.88 million metric tonnes.

As per information provided by Directorate General of Hydrocarbons (DGH), Government of India in its Annual Hydrocarbon Outlook for 2023-24, as on April 1, 2024, the initial in-place gas is about ~4,001 billion cubic meters with the estimated ultimate recovery quantities being ~1,856 billion cubic meters and the reserves being ~643.4 billion cubic meters. With respect to crude oil, as on April 1, 2024, initial in-place quantities were ~ 7235.4 million metric tonnes, estimated ultimate recovery quantities being 1933 million metric tonnes and the reserves of crude oil were about 434.3 million metric tonnes.

## 2. How are rights to explore and exploit oil and gas resources granted? Please provide a brief overview of the structure of the regulatory regime for upstream oil and gas. Is the regime the same for both onshore and offshore?

India has a federal constitution whereby legislative powers are distributed between the Parliament of India (the federal legislative body of India), and the state legislatures. Under Article 246 of the Constitution of India, the regulation and development of oilfields, petroleum and petroleum products fall within the legislative powers of the Parliament of India. The respective state governments have the power to regulate matters such as right of use and access to land, water and local government.

Also, by virtue of Article 297 of the Constitution of India, petroleum in its natural state in the territorial waters, exclusive economic zone, and the continental shelf of India is vested in the Union of India. The key governing legislations (also noted in the sections below) thereby have provisions for grant of licenses and leases for exploration, development and production of oil and gas in India. The license and lease for exploration and production is granted by the appropriate government. The contract for exploration and production of oil and gas resources is executed between the companies and the Government of India.

In terms of legal and regulatory regime pertaining to the exploration and production of oil and gas resources in the upstream sector, the following are the key legislations:

- Oilfields (Regulation and Development) Act, 1948 (Oilfields Act) and the Petroleum and Natural Gas Rules, 1959 (PNG Rules): The Oilfields Act is the primary legislation governing the India upstream oil and gas sector. It incorporates provisions relating to licensing and leasing of oil and gas blocks. The Oilfields Act also provides for rule-making power of the Government of India with respect to mining leases, mineral oil development and royalty rates to be paid by the holder of a mining lease.

Pursuant to these rule making powers, the PNG Rules have been enacted and provide for detailed provisions for the grant of petroleum exploration licences (PEL) and petroleum mining leases (PML) for both offshore and onshore areas.

- Mines Act 1952 (Mines Act) and Oil Mines Regulations, 2017 (OMR): These legislations contain provisions relating to the health, safety and welfare of workers.
- Specifically, for offshore fields, the Petroleum and Natural Gas (Safety in Offshore Operations) Rules, 2008 (PNG Safety 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.

Apart from the above, there are other legislations including those governing environment, labour matters etc. which are key to the sector

 

## 3. What are the key features of the licence/production sharing contract/concession/other pursuant to which oil and gas companies undertake oil and gas exploration, development and production?

In terms of licensing of the oil and gas fields, the Government of India, from time to time, has adopted various regimes. An oil and gas block awarded under a particular regime continues to be regulated under such a regime, unless specifically amended. Accordingly, different blocks are governed by different regimes depending on the regime under which they were awarded. Broadly, the licensing regimes are described below:

a. Nomination regime (*blocks awarded till late 1970s*): Under this regime, the licences were granted to the two national oil companies on a nomination basis.
b. Pre-NELP regime (*blocks awarded between 1980-1995*): Under this regime, blocks were awarded to the national oil companies as well as certain private entities.
c. NELP regime (*blocks awarded between 1997-2010*): In the new exploration licensing policy (NELP) regime, blocks were awarded to companies through an international competitive bidding process and foreign entities were permitted to participate. Under the NELP regime, the entities were awarded through international competitive bidding and the selected entities would enter into production sharing contracts (**PSC**) with the Government of India. As part of the PSC, the selected entity would pay a share of the profits to the government, after deducting the costs incurred by the contractor.
d. HELP regime (*blocks awarded after 2016*): In 2016, the Government of India introduced the hydrocarbon exploration and licensing policy (HELP). The key features of the HELP regime are also noted below. Under this regime, the principle of international competitive bidding was retained with the selected entities entering into a revenue sharing contract (**RSC**) with the Government of India. The key features of the HELP regime are as follows:
    - Uniform licence for exploration and production of all forms of hydrocarbon including non-conventional hydrocarbons such as shale gas, coal bed methane, tight gas, gas hydrates, etc.;
    - An open acreage licensing policy (**OALP**) under which prospective bidders have the option to carve out exploration blocks;
    - A revenue sharing model;
    - Marketing and pricing freedom;
    - Reduced royalty rates payable to the Government of India; and
    - Exploration rights on all of the retained area for the full life of the contract

## 4. Are there any unconventional hydrocarbon resources (such as shale gas) being developed and produced and is there a separate regulatory regime for those unconventional resources?

Under the HELP regime, which is applicable to blocks awarded 2016 onwards, the selected entities responsible for exploration of the blocks have been granted the right to undertake exploration and production activities of both conventional and unconventional hydrocarbons under a unified/ single license. Prior to HELP regime and under the NELP regime, contractors were permitted to explore and produce only conventional resources.

Prior to HELP, the Government of India, from time to time, had formulated policies for the exploration and production of unconventional hydrocarbons, such as the Coal Bed Methane (CBM) policy (1997) basis which, the first bidding round for CBM commenced in 2001. Subsequently, there were three other bidding rounds in the years 2003, 2005 and 2008, respectively. This was followed by a policy dated October 14, 2013 granting permission for shale gas and oil exploration and exploitation to national oil companies for blocks awarded to these companies on nomination basis. Further, the Government of India, in August 2018 approved the policy on exploration of unconventional hydrocarbons to permit exploration and exploitation of unconventional hydrocarbons such as shale oil and gas and CBM under the existing PSCs, CBM contracts and nomination fields.

As per information issued by DGH, unconventional CBM regime accounts for 9% share in India's gas reserves and as on March 31, 2024 the cumulative production of CBM in India was 6.4 billion cubic meters.

## 5. Who are the key regulators for the upstream oil and gas industry?

For regulation and supervision of the upstream operations, the Ministry of Petroleum and Natural Gas (MoPNG) is the nodal ministry of the Government of India. Further, the Directorate General of Hydrocarbons (DGH) is an agency under the administrative control of the MoPNG which acts as an advisory body to the Central Government for the upstream sector activities, and a nodal agency for implementation of key policies.

Apart from these, the Ministry of Labour and Employment through the Directorate General of Mines Safety is

 

responsible for administration of Mines Act and the Oil Industry Safety Directorate is the safety regulator as has been designated the competent authority for exercising powers and functions under the PNG Safety Rules. There are ancillary legislations and their governing ministries such as the environmental laws and the Ministry of Environment Forest and Climate Change, which are also relevant for the sector given the role of environmental aspects.

## 6. Is the government directly involved in the upstream oil and gas industry? Is there a government-owned oil and gas company?

Yes, the Government of India is involved in the upstream oil and gas industry, both in terms of regulation of policies, as well as operations through state owned companies. Oil and Natural Gas Corporation (**ONGC**) and Oil India Limited (**OIL**) are the public sector undertakings which have a significant participation in the exploration and production related activities in the oil and natural gas fields.

## 7. Are there any special requirements for, or restrictions on, participation in the upstream oil and gas industry by foreign oil and gas companies?

As per the Foreign Direct Investment Policy (FDI Policy), read with the Foreign Exchange Management Act 1999 (FEMA) and the relevant regulations thereunder, 100 per cent foreign direct investment (FDI) is permissible without the approval of the Government of India for exploration and production in oil and gas fields. Accordingly, a foreign company can undertake operations in the oil and gas sector either by itself or as a consortium with an Indian partner.

However, under Press Note 3 has been issued by the Department for Promotion of Industry and Internal Trade, Government of India on April 17, 2020 to amend the FDI Policy. Pursuant thereto, an entity of another country which shares land border with India, or where the beneficial owner of an investment into India is situated in or is a citizen of any such country which shares land border with India, can invest only under the Government Route i.e., with the prior approval of the Government of India. While the meaning of beneficial owner has not been defined in the Press Note or FEMA, reliance may be placed on the related and ancillary laws to interpret what constitutes "beneficial ownership". For instance, under the Companies (Significant Beneficial Owners) Rules 2018 read with the Companies Act 2013, it has been stated that an individual or entity holding not less than 10% shareholding in an entity would be considered a beneficial owner.

In addition to the foreign exchange laws, where participation is proposed by way of acquisition of participating interest in existing blocks then prior approval would be required from the Government of India for transfer or assignment of participating interest or operatorship under the PSC/ RSC.

## 8. What are the key features of the environmental and health and safety regime that applies to upstream oil and gas activities?

As noted above, the Mines Act read with the OMR, and the PNG Safety Rules stipulate for provisions governing health and safety related aspects in an and gas fields including provisions relating to safety conditions, facilities, working conditions etc.

Further, in relation to environmental related aspects the environmental laws which have been formulated for protection and improvement of environment, regulation of air and water pollution including the Environment (Protection) Act, 1986, Water (Prevention and Control of Pollution) Act, 1974 (Water Act) and Air (Prevention and Control of Pollution) Act, 1981 (Air Act) would be applicable. There are environmental approvals and permissions that are required to undertake oil and gas exploration and production in India which include general environmental approvals as provided under the environmental legislations and specific approvals based on the location of the field. The general approvals include environmental clearances (for which the Government of India has recently stated that the entities will now require such clearance from the state governments and also an environment impact assessment report or public hearing will not be required), and consent to establish and consent to operate under the Water Act and Air Act. The specific approvals required on the basis of the location of the oilfield include permissions for coastal zones, forest clearances, wildlife clearances etc.

In addition to the above, the PSCs and RSCs also provide for certain additional obligations in relation to protection of the environment. Under the terms of the contract, the contractors are required to adopt modern oilfield and petroleum industry practices and standards or good international petroleum industry practices and standards, as relevant, including advanced technologies, practices and methods of operations for the prevention of environmental damage.

 

## 9. How does the government derive value from oil and gas resources (royalties/production sharing/taxes)? Are there any special tax deductions or incentives offered?

PSCs under the NELP regime was based on the 'production sharing model' i.e., the contractor is required to pay a part of the profits to the Government of India, after deducting the operation costs incurred by the contractor. In this regime, the bid parameters for the prospective contractors were the share of profits which the contractor was willing to share with the Government of India and the quantum of contract costs which the contractor would propose to deduct from the total value of petroleum produced and saved from a contract area during a year

However, in the HELP regime, the principle followed under RSCs is that the contractors pay a share of the revenue to the Government of India and the amount of revenue proposed to be shared is the biddable criteria. The bidder proposing to share the highest amount of revenue is awarded the concession to explore and produce from the relevant block. As per the terms of the model RSC under OALP bid round IX "revenue" has been defined to mean: '*all amounts that are accruing to the contractor, net of any taxes and duties levied on sales, supplies, export or production, except corporate income tax payable by the constituent(s) of the contractor, on account of the petroleum produced and saved from the contract area for the month LESS Royalty for that month calculated by applying the weighted average selling price for the relevant month at the delivery point*'.

In addition to the above, the contractors are required to pay royalty to the Government of India as determined under the Oilfields Act and the PNG Rules. Under the model RSC for NELP IX, the royalty rates for crude oil and natural gas have been prescribed on the basis of the nature of the block. For on-land blocks, the rate of royalty for crude oil is 12.5% and for natural gas the same is 10%. For deep-water blocks there is no royalty prescribed for the first seven years and thereafter the rate of wellhead royalty is 5% for both crude oil and natural gas and for ultra deep water blocks the same is 2%. For shallow water blocks, the royalty rates for both crude oil and natural gas has been specified as 7.5%. The RSC also provides for concessional rates of royalty to be imposed in relation to certain specific categories of basins if there is early commencement of commercial production from such basins.

In terms of tax concessions provided to entities engaged in exploration and production, the following may be taken into account:

- Foreign companies are exempt from tax on income earned from sale of crude oil to any consumer in India. The conditions for the aforementioned are that (1) the income is earned in Indian currency; (2) the agreement for such sale and the foreign company are approved and notified by the central government; and (3) the foreign company does not have any other activity in India.
- Under Section 35AD of the Income Tax Act, 1962 (**IT Act**), allowance may be claimed in relation to expenditure made by way of infructuous or abortive exploration expenses for any area surrendered before commencement of commercial production, drilling or exploration activities or services in respect of physical assets, and depletion of mineral oil in the mining area (subject to the terms of the agreement with the Government of India).
- Under Section 32(1) (iia) of the IT Act, in cases of new machinery or plant that have been acquired or installed after March 31, 2005, a sum of 20 per cent of actual cost of the machinery or plant is allowed as deduction when the taxpayer is engaged in the business of manufacture or production of any article or thing or in the business of generation, transmission or distribution of power.

Finally on the customs front, full exemption from payment of basic customs duty and partial exemption from integrated Goods and Services Tax (GST) is allowed on specific goods imported for use in petroleum or CBM operations, subject to fulfilment of other prescribed conditions. In a recent notification, the requirement to submit an essentiality certificate from DGH has been done away with for seeking exemption from customs duty.

## 10. Are there any restrictions on export, local content obligations or domestic supply obligations?

In India, there is prohibition on the export of oil and natural gas which is produced domestically. As per the terms of the PSCs and RSCs, until India becomes self-sufficient, oil and natural gas produced in India are to be sold within the domestic market in India exclusively. Currently, India is a net importer of natural gas and hence export of domestic natural gas looks improbable in the coming years.

With respect to local content and employment to Indian citizens, the PSCs and RSCs provide that: (1) the contractor shall, to the maximum extent possible, employ

 

(and require the operator and its subcontractors to employ) Indian citizens having appropriate qualifications and experience; and (2) give preference to the purchase and use of goods (equipment, materials and supplies) that are manufactured, produced or supplied in India subject to their timing of delivery, quality and quantity required, price and other terms.

## 11. Does the regulatory regime include any specific decommissioning obligations?

The PNG Rules provide that on termination of the PEL or PML, the area and any wells contained in it must be delivered in good order and condition. For six months after the licence or lease ends, the former licensee or lessee can remove or dispose of any petroleum recovered during the licence or lease period, along with stores, equipment, tools and machinery and any improvements on the land covered by the licence or lease that the state government permits.

As per the terms of the PSCs and RSCs, the contractors engaged in exploration and production are required to remove all equipment and installations from the contract area in a manner as agreed with the Government of India pursuant to an abandonment plan. The contractor is required to prepare and submit a proposal to the Government of India for site restoration, including an abandonment plan and requirement of funds for site restoration and annual contribution.

In addition, the Site Restoration and Abandonment Guidelines for Petroleum Operations was issued by MoPNG, Government of India in April 2018. These guidelines prescribed detailed obligations regarding decommissioning of offshore and onshore production sites by the exploration and production entities including opening up of site restoration fund (SRF) by the exploration and production entity.

## 12. What is the regulatory regime that applies to the construction and operation of offshore and onshore oil and gas pipelines?

The downstream oil and natural gas sector is regulated by the Petroleum and Natural Gas Regulatory Board (**PNGRB**), which is an authority established under the Petroleum and Natural Gas Regulatory Board Act, 2006 (**PNGRB Act**). The PNGRB Act authorizes the PNGRB to formulate regulations for regulating the downstream oil and natural gas sector including for pipelines. Pursuant to such authority, the PNGRB has framed PNGRB (Authorizing Entities to Lay, Build, Operate or Expand Natural Gas Pipelines) Regulations, 2008 (**NG Pipeline Regulation**), which stipulates for provisions for laying, setting up or expanding a natural gas pipelines, and the PNGRB (Authorizing Entities to Lay, Build, Operate or Expand Petroleum and Petroleum Products Pipelines) Regulations, 2010 (**PP Pipeline Regulation**) which lays down the manner in which pipelines for petroleum and petroleum products may be constructed and operated. As per the NG Pipeline Regulation and the PP Pipeline Regulation, entities are authorized to lay and operate the pipelines whereby such authorisation are granted by PNGRB including through a bid process.

## 13. What is the regulatory regime that applies to LNG liquefaction plants and LNG import terminals? Are there any such liquefaction plants or import terminals in your jurisdiction?

As per Section 15 of the PNGRB Act, every entity establishing or operating an LNG terminal will be required to make an application to PNGRB and seek registration. The PNGRB has notified the PNGRB (Eligibility Conditions for Registration of Liquefied Natural Gas Terminal) Rules, 2012 whereby in order to be eligible for getting a registration from PNGRB, certain conditions have to be fulfilled by the entities.

The PNGRB has also issued the draft PNGRB (Registration for Establishing & Operating Liquefied Natural Gas (LNG) Terminals) Regulations, 2024 which would regulate the registration of LNG terminals for comments from stakeholders. The draft regulations have defined LNG terminal to mean infrastructure required to (i) receive LNG; (ii) store LNG; (iii) enable regasification of LNG; (iv) transport re-gasified LNG to the outside boundaries of the facility; and (v) transport Liquefied natural gas to the outside boundaries of the facility; and (vi) infrastructure such as on-land LNG terminal, Floating Storage Regassification units (FSRU), small-scale LNG storage and regassification terminals or small-scale LNG producing facilities at land locked sites. However, these regulations are at the draft stage and have not yet been notified.

In India, presently, there are seven LNG terminals, namely at Dahej, Hazira, Dabhol, Ennore, Kochi, Mundra and Dhamra with capacity of 47.7 million metric tons per annum (MMTPA). There are four other projects related to LNG re-gasification terminals which are under construction for development of additional 17.3 MMTPA capacity.

 

### 14. What is the regulatory regime that applies to gas storage (not LNG)? Are there any gas storage facilities in your jurisdiction?

Under Section 15 of the PNGRB Act, it has been stated that any entity establishing storage facilities for petroleum, petroleum products or natural gas exceeding such capacity as may be specified by PNGRB, would need to be registered with PNGRB.

Under the NG Pipeline Regulation, the definition of natural gas pipeline includes any pipeline including spur lines for transport of natural gas and includes all connected equipment and facilities such as compressors, 'storage facilities', metering units but excludes dedicated pipelines laid to transport natural gas to specific customers and also the pipelines in a city gas distribution (CGD) network. Hence, storage facilities associated with natural gas pipelines would have to adhere to the requirements and obligations laid down in the NG Pipeline Regulations.

### 15. Is there a gas transmission and distribution system in your jurisdiction? How is gas distribution and transmission infrastructure owned and regulated? Is there a third party access regime?

There is a well-established gas transmission and distribution system in India and the same is principally regulated by the PNGRB. Natural Gas can be transported directly through natural gas pipelines to large consumers having a consumption capacity of more than 100,000 SCMD. These are owned and operated by authorised entity under the NG Pipeline Regulation, and GAIL (India) Limited which is also a state-owned company operates about 65% of the total natural gas pipelines.

Transportation of natural gas to small-scale consumers i.e., with a requirement of up to 50,000 SCMD such as piped natural gas (PNG) for domestic purposes or small-scale industries and compressed natural gas (CNG) as transportation fuel, is made through CGD networks. For customers with requirement between 50,000 SCMD and 100,000 SCMD, there is a choice to source the natural gas from the CGD network or from other sources. Under the CGD model, areas are categorised as geographical areas, whereby the PNGRB grants authorisation to an entity to lay, build, operate or expand the CGD network as per the PNGRB (Authorising Entities to Lay, Build, Operate or Expand City or Local Natural Gas Distribution Networks) Regulations, 2008 (CGD Authorisation Regulations). As per the CGD Authorisation Regulations, a proposal for the laying of a CGD network may be submitted by an entity wishing to laying a CGD network or the PNGRB may suo moto initiate a proposal for laying a CGD network in a given area.

In terms of third party access to the CGD network, the same may be restricted on account of exclusivity granted to the authorised entity from providing access to the CGD network on a common carrier or contract carrier basis, for a period of 8 years. However, post the aforesaid exclusivity period, access to the CGD network may be provided to third parties either on common carrier or contract carrier basis. Such access is granted pursuant to the terms of the PNGRB (Access Code for City or Local Natural Gas Distribution Networks) Regulations, 2020 provided that the CGD network has been declared as a common carrier or a contract carrier under the PNGRB (Guiding Principles for Declaring City or Local Natural Gas Distribution Networks as Common Carrier or Contract Carrier) Regulations, 2020, whereby more than one entity can use such pipelines.

### 16. Is there a competitive and privatised downstream gas market or is gas supplied to end-customers by one or more incumbent/government-owned suppliers? Can customers choose their supplier?

As mentioned in the response for Query 15, downstream transportation of natural gas to small-scale consumers i.e., with a requirement of up to 50,000 SCMD such as piped natural gas (PNG) for domestic purposes or small-scale industries is made through CGD networks. As mentioned above, a proposal for the laying of a CGD network may be submitted by an entity or the PNGRB may *suo moto* initiate a proposal for laying a CGD network in a given area. PNGRB has been authorising entities by way of bidding process, whereby entity is granted with authorisations to lay and operate the CGD network for specified geographical area. The bidding entities can be owned, privately owned, a foreign entity or a consortium of these entities. However, after the completion of the exclusivity period of 8 years, the CGD network may be declared as a common carrier/contract carrier.

### 17. How is the downstream gas market regulated?

The downstream oil and natural gas sector is regulated by the Petroleum and Natural Gas Regulatory Board (PNGRB), which is an authority established under the Petroleum and Natural Gas Regulatory Board Act, 2006

 

(PNGRB Act).

PNGRB is responsible for, inter alia, registering entities to market notified petroleum and petroleum products and natural gas, establish and operate LNG terminals, establish storage facilities for petroleum, petroleum products or natural gas exceeding such capacity as may be specified by regulations, and as noted above authorise entities to lay and operate NG pipelines, PP Pipelines and CGD network. PNGRB also lays down the technical standards and specifications including safety standards in activities relating to petroleum, petroleum products and natural gas.

## 18. Have there been any significant recent changes in government policy and regulation in relation to the oil and gas industry?

Some of the significant changes in government policies and regulations have been summarised below:

- As on August 1, 2024, the Petroleum and Natural Gas Regulatory Board (Determination of Petroleum and Petroleum Products Pipeline Transportation Tariff) Regulations, 2010, which used to provide the manner in which tariff chargeable from third parties using common carrier pipelines, was repealed and replaced with Petroleum and Natural Gas Regulatory Board (Determination of Petroleum and Petroleum Products Pipeline Transportation Tariff) Regulations, 2024. As per the erstwhile regulations, tariffs were being established by benchmarking against alternate transportation mode of railways at 75% of the rail tariff except for LPG wherein it was set at 100% of the rail tariff, based on the equivalent rail distance along the pipeline route. However, it was noticed by the PNGRB and the government that railway goods rates had not been revised since 2018, and that the tariffs for petroleum product pipelines have not accounted for inflation during this period. It was also felt that Indian Railways freight charges are based on a macro-economic model and does not account for the costs incurred by pipeline operating entities. As per the newly notified regulations, the tariff will be determined in the following manner:
    - *For petroleum product pipelines commissioned before December 20, 2010 and which were not awarded through a bid*, the tariff shall be 75% of basic railway freight with a one-time escalation of 17% effective from the date August 1, 2024 till 31st March 2025. Thereafter, from April 1, 2025, there will be an annual escalation @ 3.4% shall be considered and this percentage is based on 10 years' compounded annual growth rate (CAGR) of Wholesale Price Index issued by the Government of India, on rolling basis. Additionally, these pipelines have been provided with a one-time option to get the tariff determined based on discounted cash flow method, in case they incur capital expenditure on its replacement, expansion or augmentation.
      Discounted cash flow (**DCF**) method has been explained to mean equating the actual/projected inflows from the revenue earnings earned out of applicable petroleum and petroleum product pipeline tariff with the actual/projected outflows of capital and operating expenditures over the economic life of the project by discounting these flows at the project's reasonable rate of return. The inflows and outflows are considered at actuals till August 1, 2024 and for the remaining economic life of the pipeline the inflows and outflows are estimated. These combined cashflows and outflows are used to arrive at the internal rate of return of the pipeline over the economic life.
    - *For the pipelines commissioned after December 20, 2010 and which were not awarded through a bid*, the tariff shall be determined based on the DCF methodology with 12% post tax returns on capital employed over economic life of the pipeline.
    - For bid-out pipelines authorized by PNGRB prior to December 18, 2023, where pipelines have been authorized based on bidding parameters for first 10 years of pipeline operations, the transportation tariff shall be determined based on the DCF methodology with 12% returns over remaining economic life of the pipeline considering the Net Fixed Asset as at beginning of the 11th year of operations.
    - Post bid out petroleum product pipelines which received PNGRB authorization after December 18, 2023, bidders have to quote tariff for the entire life of 25 years.
- On December 3, 2024, a Bill was passed by the Upper House of the Indian Parliament i.e., the *Rajya Sabha*, seeking to amend the Oilfields Act. With an aim towards creating a more investor-friendly environment, the Bill incorporates a provision that the terms and conditions of PML will remain unchanged during the lease period and that there will be no alterations unfavourable to the lessee. Further, the penalty provision of the statute has been amended by replacing imprisonment as a punishment for violation of the statute with monetary penalties. There is also a proposed amendment permitting the government to make rules to formulate alternate dispute resolution

 

mechanisms for disputes relating to petroleum leases. Specific provisions are also proposed to be incorporated in the statute to create adjudication mechanisms, empowering an authority to conduct investigations and provide the potential offender a right to be heard before imposition of penalties under the statute. These are a pivotal step as it would provide comfort to investors including entrants in the sector in terms of risk stability. Additionally, emphasising on decarbonisation, the Bill proposes rule making powers to include promoting and facilitating adoption of measures for reducing carbon and greenhouse gas emissions, reporting of carbon and greenhouse gas emissions related to mineral oil operations, etc., and promotion of comprehensive energy projects (including for planning, development, sharing of infrastructure for mineral oil operations with renewal projects) to promote energy transition. The Bill is now pending discussion and passage before the Lower House of the Indian Parliament i.e., the Lok Sabha.

- In terms of domestically produced oil and gas, to bring about uniformity in the gas pricing regime, the MoPNG notified the New Domestic Natural Gas Pricing Guidelines, 2014 (**Gas Pricing Guidelines**). The Gas Pricing Guidelines prescribe a formula for determining the well head price of gas produced, and this price is notified on a half-yearly basis by the Petroleum Planning and Analysis Cell (**PPAC**). The price determined in accordance with the Gas Pricing Guidelines was applicable to all gas produced in India (including gas from nominated blocks, pre-NELP blocks, NELP blocks and CBM blocks), except in specified circumstances. On April 7, 2023, Government of India amended the Gas Pricing Guidelines. Some of the key changes notified include:
    - Price of domestic gas under the guidelines will be 10% of the Indian Crude Basket Price (defined by PPAC from time to time), as declared on a monthly basis. Earlier, under the Gas Pricing Guidelines, the price of gas was determined on half-yearly basis and was linked with prices in international gas trading hubs i.e., Henry Hub, National Balancing Point, Alberta Hub and Russia.
    - Specifically for gas produced from nomination fields, the price will be subject to a floor (US Dollars 4 /MMBTU) and a ceiling (US Dollars 6.5 /MMBTU) whereby the ceiling would increase by US Dollars 0.25/MMBTU each year after the completion of two financial years i.e., financial year 2023 – 24 (1 April 2023–31 March 2024) and financial year 2024–25 (April 1, 2024 –March 31, 2025).
    - Subject to provisions of the PSCs, the price declared by PPAC on monthly basis would also be applicable where the contracts of NELP or Pre-NELP blocks provide for GoI's approval of prices.
    - Gas produced specifically from new wells or well intervention in the nomination fields would be allowed 20% premium and such gas would be subject to GoI's policy related to the commercial utilisation of natural gas.
- Under the HELP regime 8 bidding rounds have been completed with 144 blocks being awarded to successful bidders. As on date OALP bid round IX is almost reaching a conclusion with 28 blocks on offer and this also includes several offshore blocks. The DGH has recently announced the total number of bids received as part of OALP bid round IX.
- In April 2023, PNGRB amended the PNGRB (Determination of Natural Gas Pipeline Tariff) Regulations, 2008 (**NG Tariff Regulations**) to incorporate the regulations pertaining to Unified Tariff for natural gas pipelines with a mission of "One Nation, One Grid and One tariff".
- PNGRB initiated concluded the 12$^{th}$ CGD bidding round covering a total of 8 geographical areas comprising of 6 North Eastern states of India- Arunachal Pradesh, Meghalaya, Manipur, Nagaland, Sikkim & Mizoram and 2 Union Territories of Jammu & Kashmir and Ladakh. Under the city gas distribution system, the PNGRB seeks to provide rights to various entities pursuant to a bidding process to lay and establish a city gas pipeline network for supplying gas to the entire geographical area of the country.
- On July 11, 2022, the Government of India announced that with effect from October 1, 2022, the condition in PSCs to sell crude oil to government or government nominee or government companies, shall be waived off, and if such a condition is mentioned in any PSC and the PSC shall stand amended accordingly.
- In September 2020, the PNGRB notified the PNGRB (Gas Exchange) Regulations, 2020 pursuant to which PNGRB provided a framework and allowed trading in gas contracts through a gas exchange.

**19. What key challenges have been identified by the government and/or industry in relation to your jurisdiction's oil and gas industry? In this context, for example, has the Russia/Ukraine war had an impact on the oil and gas industry and if so, how has the government and/or industry**

 

**responded to it?**

The Ukraine crisis followed by the conflict in the Middle East has had a deep impact on crude oil and natural gas pricing and supply side factors. India being a net importer of crude oil and natural gas has suffered price volatility and supply side issues. With the outbreak of the Russia-Ukraine war crude oil prices had reached a 14-year high of US$133 per barrel in the first week of March 2022. Prices had remained volatile thereafter fluctuating around US$110 per barrel, although towards the latter half of 2022 and the first half of 2023 there was a downward trajectory in crude oil prices. However, an increase in international crude oil prices was witnessed once again with the onset of the Middle East crisis with the World Bank reporting that crude oil prices rose by 6% since the start of the conflict to around US$96.5 per barrel. The calendar year of 2024 also witnessed fluctuations in crude oil prices with the Brent crude benchmark showing a rise up to approximately US$ 91 per barrel during the month of April.

To offset such volatility in international prices, the Government of India has attempted to diversify its crude oil import portfolio. For instance, during the financial years 2022-23 and 2023-24, India had significantly increased import of crude oil from Russia with one of India's largest government oil and gas companies, Indian Oil Corporation, concluding a long term contract with Russia based Rosneft for importing 4 million barrels of Ural grade crude oil per month. However, the government has been nimble in its efforts to not become dependent on a single source and has sourced crude oil from varying sources depending upon competitive price offers available in the market. India has over the years developed a diverse portfolio in its crude basket with crude oil being imported from USA, Russia, Canada, Guyana, Angola, Mexico along with the OPEC countries.

Apart from the above, the government has also taken steps to reduce import dependency on crude oil through diversification of sources of energy. The government has been promoting usage of natural gas as fuel and has increased the share of natural gas as a source of energy. It has also been promoting alternate fuels like ethanol, compressed bio gas and biodiesel and the same has been discussed below in response to Query No. 20.

**20. Are there any policies or regulatory requirements relating to the oil and gas industry which reflect/implement the global trend towards the low-carbon energy transition? In particular, are there any (i) requirements for the oil and gas industry to reduce their carbon impact; and/or (ii) strategies or proposals relating to (a) the production of hydrogen; or (b) the development of carbon capture, utilisation and storage facilities?**

During COP 26, India had pledged that:

- India will take its non-fossil energy capacity to 500 GW by 2030.
- India will meet 50 percent of its energy requirements from renewable energy by 2030.
- By the year 2070, India will achieve the target of Net Zero.

In addition, as part of its commitments during COP 27, India launched its Long-Term Low-Emission Development Strategy (LT-LEDS) where it was stated that the plan in the short term is for India to focus on usage of ethanol, compressed natural gas (CBG), biodiesel and liquified natural gas (LNG), use biodiesel and methanol/dimethyl ether (DME) supplemented by pipeline biogas (Bio-PNG) in the medium term and use green hydrogen as long term alternative fuel. Subsequently, during COP 28, India announced that it had successfully reduced the emission intensity vis-à-vis its GDP by 33% between 2005 and 2019, thus achieving India's initial NDC target for 2030, 11 years ahead of scheduled time. India also highlighted that it had achieved 40% of electric installed capacity through non fossil fuel sources, 9 years ahead of the target for 2030, and between 2017-2023, India added ~100 GW of installed electric capacity, of which around 80% is attributed to non-fossil fuel-based resources.

India already has a National Policy on Biofuels, 2018 where the indicative target for 2025 is 20% blending of ethanol in petrol, which will amount to an annual savings potential of INR 300 billion of foreign exchange. The total reductions in CO2 emissions achieved in the last seven years due to the programme for Ethanol Blended Petrol are estimated to be 22.6 MtCO2. In 2020-21 alone, a reduction of 6.44 Mt CO2 was achieved due to this program. To demonstrate India's commitment towards biofuels, India in its capacity as the Chair of the G20 launched the Global Biofuel Alliance (**GBA**) in September 2023 with key components including encouraging the global uptake and usage of biofuels by technological collaboration between members of the GBA and overall technological advancement, intensifying the usage of sustainable biofuels in the member nations of the GBA, etc. In August 2024, the government approved a modified Pradhan Mantri JI-VAN Scheme wherein timeline for

 

achieving 20% blending of ethanol in petrol implementation was extended by five years, until 2028-29, and the scope of the scheme was expanded to include advanced biofuels produced from lignocellulosic feedstocks, such as agricultural and forestry residues, industrial waste, synthesis (syn) gas, and algae.

In terms of green hydrogen, the Government of India launched its first Green Hydrogen Policy in February 2022 with policy's main thrust being towards reduction in the cost of renewable energy for production of hydrogen. This has been followed by the launch of the National Green Hydrogen Mission in January 2023 along with a detailed Mission document. Under the Mission, Government of India has launched fiscal incentives to manufacturers of electrolysers and producers of green hydrogen and the selection process has commenced. The government has also commenced issuing call for proposals for setting up centres of excellence for research and development of green hydrogen technologies as well announcing scheme for providing support to innovative models and technologies for production and utilisation of green hydrogen.

Pursuant to the Mission, Government of India has also announced the green hydrogen standard for India delineating specific emission thresholds that must be satisfied to categorise hydrogen produced as “green". Under the National Green Hydrogen Mission, India has an ambitious target of building capabilities within India to produce at least 5 MMT of green hydrogen *per annum* by 2030, with the potential to reach 10 MMT *per annum* with the growth of export markets.

Finally, in terms of carbon capture and storage, Niti Aayog (which is the apex public policy think tank of the GoI), in November 2022, issued a report on policy framework for adoption of carbon capture utilisation and storage (**CCUS**) technologies. As per the report, CCUS can be used to convert the captured CO2 to different products such as green urea, food and beverage form application, building materials (concrete and aggregates), chemicals (methanol and ethanol), and polymers (including bio-plastics).

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