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Petroleum and Natural Gas Sector in India

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India’s first oil well was drilled in 1889, at Digboi, Assam. In 2026, the government approved a scheme worth more than most Ministries’ annual budgets, to find more. This article covers India’s petroleum and natural gas sector: its major companies, its exploration policy and its newest mega-scheme.

At a Glance

Four facts to hold on to.

01
1889

First oil discovery, at Digboi, Assam.

02
~70% / ~84%

ONGC’s share of India’s crude and gas output.

03
₹84,084 crore

Outlay of Samudra Manthan.

04
~85%

Share of crude oil India imports.

UpstreamFinding and producing crude oil and gas.
DownstreamRefining, storage, transport, distribution, sale.

NELP / OALP Two exploration licensing policies.
ISPRLManages the strategic crude reserve.

Chapter 1: The Major Companies

Must Know

From Digboi

- India’s first-ever oil discovery was made at Digboi, Assam, in 1889.
- Digboi is Asia’s oldest refinery. It was built right beside Assam’s own oil fields.
- See Assam for the state.

ONGC

- The Oil and Natural Gas Corporation (ONGC) was founded in 1956, as India’s national exploration company.
- It sits under the Ministry of Petroleum and Natural Gas.
- It produces about 70% of India’s crude oil and about 84% of its natural gas.
- It holds Maharatna status, the highest tier of financial autonomy for a public sector company.

Oil India Limited

- Oil India Limited (OIL) was founded in 1959. Its headquarters is at Duliajan, Assam.
- OIL was Navratna earlier and was elevated to Maharatna in August 2023, the same tier as ONGC.
- It operates in the same Assam basin as the 1889 discovery.

The regulator

- The Petroleum and Natural Gas Regulatory Board (PNGRB) was set up in 2006.
- It regulates only the downstream sector: refining, storage, transportation, distribution, marketing and sale.
- It does not regulate upstream production of crude oil or natural gas.
- India imports most of the crude it uses, so it is exposed to global price swings.

Remember: ONGC 1956 (Maharatna). OIL 1959 (Maharatna since August 2023, Duliajan). PNGRB 2006: downstream only.

> **Quick check 1.** PNGRB regulates the production of crude oil and natural gas. *(True or False?)* See answer ↓

Chapter 2: Opening Up Exploration

Good to Know

NELP, 1999–2010

- The New Exploration Licensing Policy took effect in 1999.
- Private and foreign firms could bid for blocks, competing with ONGC and OIL on equal terms.
- It used a production-sharing model, with profit shared only after the contractor recovered its costs.
- NELP ran till 2010 and led to 177 oil and gas discoveries.

OALP, 2016

- The Open Acreage Licensing Policy came in 2016. It replaced NELP's fixed bidding rounds.

- Companies can offer any block for exploration at any time of the year.
- A company carves out the exact area it wants and submits an Expression of Interest at any time.
- The government then auctions that area to other bidders.
- OALP switched to revenue-sharing. Gross revenue is split from day one, whether or not costs are recovered.

Same aim, different tools

- Both policies tried to bring private capital into a sector long led by ONGC and OIL.
- NELP used periodic rounds. OALP uses year-round offers.

Strategic petroleum reserves

- Indian Strategic Petroleum Reserves Limited (ISPRL), set up in 2004, manages India's emergency crude stock.
- The crude is stored in underground rock caverns at three coastal sites.
- Visakhapatnam holds 1.33 million metric tons (MMT). Mangalore holds 1.5 MMT. Padur holds 2.5 MMT.
- That totals 5.33 MMT, enough for about 9.5 days of India's crude needs.
- Oil marketing companies' own 64.5 days of commercial stock bring total cover to roughly 74 days.
- Expansion is planned at Chandikhol and a Padur Phase-II.

> **Quick check 2.** OALP lets companies pick their own block and offer it for exploration at any time. *(True or False?)* See answer ↓

Chapter 3: Why Refineries Follow Demand

Great to Know

Refineries near demand, not oil fields

- Modern refineries increasingly sit near demand centres, not oil fields.
- Refined products are far more numerous and harder to move efficiently than crude.
- Cross-country pipelines let refineries draw crude from distant fields cheaply.
- India imports roughly 85% of its crude. Coastal refineries like Jamnagar and Mumbai receive it by tanker.

Digboi versus Jamnagar

- Digboi is the rare field-adjacent exception.
- Reliance's Jamnagar complex is the world's largest single refining complex. It sits nowhere near a major Indian crude field.

- It runs on imported crude and is built for export-oriented trade.
- Barauni, Panipat and Mathura were sited partly for regional development goals. Policy spread industrial investment to specific States this way.

The strategic cost

- Building refineries near ports deepens dependence on imported crude and the shipping routes that carry it. See The Strait of Hormuz and India's Energy Security.
- Coastal siting also shifts pollution and environmental risk to port cities and consumption regions.
- Remote crude-producing areas carry less of that burden.

Cutting oil dependence

- One reason India pushes EVs is to cut oil imports. See Electric Vehicles in India.
- See also GOBARdhan: National Circular Bioenergy Scheme, Solar Energy in India and Coal Sector in India: From Nationalisation to the Coal Exchange.

Exam Edge

Previous Year Questions

PNGRB and refinery location are the repeat questions.

Chapter 4: Current Affairs

Great to Know

Samudra Manthan deepwater scheme guidelines, October 2026

- [Policy] New operational guidelines for the **₹84,084 crore Samudra Manthan** scheme say the Centre will pay up to **50%** of the cost of risky deepwater exploration wells.
- The scheme backs **60 wells** in deepwater (deeper than 400 metres) and ultra-deepwater (deeper than 1,500 metres).
- Fifty-six exploratory wells get up to 50% of actual cost, capped at ₹675 crore per well. Four stratigraphic wells get up to 100%, capped at ₹1,350 crore each.
- Only state-run firms, or consortia they lead, can apply. They can apply only for blocks awarded under the Revenue Sharing Contract regime.
- If a well finds oil or gas, the support is recovered after seven years of commercial production or once 50% of costs are recouped, whichever comes first. If it finds nothing, the State absorbs the loss.
- The scheme runs through FY2030-31. (Source: The Hindu, 25 October 2026.)

Samudra Manthan, 31 July 2026

- The Union Cabinet approved Samudra Manthan, formally the National Offshore Exploration Scheme.
- It is a Central Sector Scheme under the Ministry of Petroleum and Natural Gas.
- The outlay is ₹84,084 crore, up to FY 2030-31.
- It targets reserve accretion of over 600 million metric tons of oil equivalent.
- It funds seismic data, deepwater and ultra-deepwater drilling, shared offshore infrastructure, and a new Oil & Gas Manufacturing and Services Zone.

- Tying exploration funding to indigenous manufacturing under Make in India and Atmanirbhar Bharat marks a break from past schemes, which generally funded exploration alone.
- The name refers to the mythological churning of the cosmic ocean. See Samudra Manthan: The Churning of the Ocean. (Source: PIB)

Mahanadi basin and OALP progress

- A week earlier, on 25 July 2026, drilling began on India's first appraisal well in the Mahanadi Offshore Basin.
- Minister Hardeep Singh Puri marked the milestone. The well, MN-DWN18-1-HD, is the first of four planned deepwater wells there. (Source: PIB)
- Puri also cited OALP progress: 172 exploration blocks awarded, covering over 3.8 lakh sq km, with committed investment above $4.3 billion. (Source: PIB)
- Samudra Manthan signals a return to large, direct government-funded exploration, even as OALP keeps the door open to private players.

Incentive scheme for domestic PNG connections

- The Incentive Scheme for Promotion of Domestic PNG Connections was launched on 18 August 2026. It took effect from 1 September 2026. (Source: PIB)
- As of 18 August 2026, India had 1.74 crore domestic PNG connections across 309 PNGRB-authorised Geographical Areas.
- For each billed connection added beyond a fixed minimum per area, a City Gas Distribution entity earns an extra 200 SCM of cheaper, domestically produced APM gas.
- That replaces costlier LNG used for CNG for transport.

- This is expected to shrink a domestic connection's payback period from about 10 years to nearly 3.

> **Think it through: Why does PNGRB's upstream/downstream line matter so much?**
>
> Production is finding and lifting the oil. PNGRB steps in only after that, when the fuel is refined, moved and sold.

Quick Q&A

First oil discovery?

Digboi, 1889.

ONGC status?

Maharatna.

PNGRB covers?

Downstream only.

OALP started?

2016.

Samudra Manthan outlay?

₹84,084 crore.

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Assam

Practice MCQs

1. In which year was the Oil and Natural Gas Corporation (ONGC) founded?

A. 1972

B. 1964

C. 1956

D. 1948

See answer ↓

2. About what share of India's crude oil and natural gas production does ONGC account for?

A. 90% crude, 95% gas

B. 40% crude, 50% gas

C. 50% crude, 60% gas

D. 70% crude, 84% gas

See answer ↓

3. Under which exploration policy, effective from 1999, could private and foreign firms compete with ONGC and OIL for exploration blocks?

A. OALP

B. NELP

C. DFSM

D. HELP

See answer ↓

4. How does the Open Acreage Licensing Policy (OALP) mainly differ from NELP?

A. It replaced production-sharing with fixed royalties

B. It banned private companies from bidding

C. It only allows government companies to bid

D. It offers blocks for exploration year-round, not in cyclic rounds

See answer ↓

5. What is the approved outlay of the Samudra Manthan scheme?

A. ₹42,000 crore

B. ₹1,20,000 crore

C. ₹56,000 crore

D. ₹84,084 crore

See answer ↓

6. Up to which financial year will the Samudra Manthan scheme run?

A. FY 2032-33

B. FY 2028-29

C. FY 2027-28

D. FY 2030-31

See answer ↓

7. Consider the following statements about the Petroleum and Natural Gas Regulatory Board (PNGRB):

1. PNGRB is the first regulatory body set up by the Government of India.

2. One of PNGRB's tasks is to ensure competitive markets for gas.

3. Appeals against PNGRB's decisions go before the Appellate Tribunal for Electricity.

Which of the statements given above are correct?

A. 1 and 2 only

B. 2 and 3 only

C. 1 and 3 only

D. 1, 2 and 3

See answer ↓

8. As cited on 25 July 2026, roughly how many exploration blocks has the OALP awarded, with committed investment above $4.3 billion?

A. 674

B. 300

C. 50

D. 172

See answer ↓

Answer Key

1. **C.** ONGC was founded in 1956 and is India's largest oil and gas company, under the Ministry of Petroleum and Natural Gas. ↑ Q1
2. **D.** ONGC accounts for about 70% of India's crude oil production and about 84% of its natural gas production. ↑ Q2
3. **B.** The New Exploration Licensing Policy (NELP), effective from 1999, let private and foreign firms compete for blocks under a production-sharing model. ↑ Q3
4. **D.** OALP, introduced in 2016, replaced NELP's cyclic bidding rounds with year-round block offers. ↑ Q4
5. **D.** The Samudra Manthan scheme has an approved outlay of ₹84,084 crore. ↑ Q5
6. **D.** The Samudra Manthan scheme runs up to FY 2030-31. ↑ Q6
7. **B.** The correct answer is (b) 2 and 3 only. Statement 1 is false. PNGRB was set up under the PNGRB Act, 2006. Two other Indian regulators came earlier — TRAI in 1997 and SEBI in 1992. So PNGRB is not India's first regulatory body. Statement 2 is true. The PNGRB Act tasks the Board with promoting competitive markets for petroleum, petroleum products, and natural gas. Statement 3 is true. Section 30 of the PNGRB Act makes the Appellate Tribunal for Electricity (APTEL) the appellate authority for PNGRB's orders. ↑ Q7
8. **D.** Under OALP, 172 exploration blocks covering nearly 3.8 lakh sq km have been awarded, with committed investments exceeding $4.3 billion. ↑ Q8

Quick-check answers

1. **False.** ↑ 1
2. **True.** ↑ 2

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