

India witnesses renewed spurt in oil and gas exploration: Petroleum Minister Hardeep S Puri

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Andaman Basin emerges as key frontier in India's energy exploration

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India is witnessing a renewed surge in oil and gas exploration, particularly in offshore regions, underscoring the country's vast untapped hydrocarbon potential. In a written reply to a starred question in the Rajya Sabha, Union Minister for Petroleum and Natural Gas, Hardeep Singh Puri, stated that the opening of nearly one million square kilometres of erstwhile 'No-Go' offshore areas in 2022 has been a landmark development. This move has unlocked significant exploration frontiers, especially in deepwater and frontier regions such as the Andaman-Nicobar (AN) offshore basin, and has been instrumental in triggering the current momentum in offshore activity.

Since 2015, Exploration and Production (E&P) companies operating in India have reported 172 hydrocarbon discoveries, including 62 in offshore areas. The Minister highlighted the geological significance of the AN basin, which lies at the junction of the Andaman and Nicobar Basins within the Bengal-Arakan sedimentary system. The tectonic setting, located at the boundary of the Indian and Burmese plates, has led to the formation of numerous stratigraphic traps that are conducive to hydrocarbon accumulation. This geological promise is further amplified by the basin's proximity to proven petroleum systems in Myanmar and North Sumatra. The region has attracted renewed global interest following significant gas discoveries in South Andaman offshore Indonesia, underlining the geological continuity across the region.

While the favourable geology sets a strong foundation, Shri Puri emphasized that the real breakthrough has come from the government's strategic policy interventions and a new exploration approach. The revised strategy has enabled aggressive acquisition of seismic data, initiation of both stratigraphic and exploratory drilling, and increased engagement with international exploration partners, several of whom have shown keen interest in the newly accessible frontier blocks.

National Oil Companies have planned to drill four offshore stratigraphic wells, including one in the AN basin. These scientific wells are designed to test geological models, validate the existence of petroleum systems, and help de-risk future commercial exploration. Although commercial accumulations have not yet been confirmed, these efforts mark a major step forward in systematic and knowledge-driven hydrocarbon exploration.

In a significant development, ONGC and Oil India Ltd (OIL) have launched an ambitious exploration campaign in the Andaman ultra-deepwater region. For the first time, drilling operations are targeting depths of up to 5000 metres. One such wildcat well, ANDW-7, drilled in a carbonate play in the East Andaman Back Arc region, has yielded encouraging geological insights. These include traces of light crude and condensate in cutting samples, heavy hydrocarbons like C-5 neo-pentane in trip gases, and the presence of reservoir-quality

facies. These findings establish, for the first time, the existence of an active thermogenic petroleum system in the region, comparable to those in Myanmar and North Sumatra. While commercial reserves remain to be established, this campaign has validated the presence of a working petroleum system and laid the foundation for focused exploration in the area.

Providing an overview of the exploration outcomes so far, the Minister informed that ONGC has made hydrocarbon discoveries in 20 blocks, with an estimated reserve of 75 million metric tonnes of oil equivalent (MMTOE). OIL, on its part, has made seven oil and gas discoveries over the past four years, with reserves estimated at 9.8 million barrels of oil and 2,706.3 million standard cubic meters of gas.

Referring to the Hydrocarbon Resource Assessment Study (HRAS) of 2017, which estimated the AN basin's hydrocarbon potential at 371 MMTOE, the Minister stated that a 2D broadband seismic survey covering approximately 80,000 Line Kilometres (LKM) of India's Exclusive Economic Zone, including the AN offshore region, was completed in 2024. Additionally, OIL acquired 22,555 LKM of 2D seismic data during the Deep Andaman Offshore Survey conducted in 2021–22. Several promising geological features have emerged from this data, which are now being validated through ongoing drilling campaigns by ONGC and OIL.

Shri Puri underscored that the current momentum in offshore and frontier exploration is a result of a series of progressive policy reforms introduced since 2014. These include the transition from the Production Sharing Contract (PSC) regime to the Revenue Sharing Contract (RSC) model in 2015, the launch of the Hydrocarbon Exploration and Licensing Policy (HELP) and the Open Acreage Licensing Programme (OALP) in 2016, the establishment of the National Data Repository in 2017–18, and the deregulation of crude oil marketing in 2022. Together, these measures have fostered a liberal, investor-friendly exploration environment backed by targeted incentives for frontier exploration, stratigraphic drilling, and data acquisition.

These reforms have enabled the kind of bold, risk-informed and scientific exploration now underway in the Andaman-Nicobar basin and other deepwater regions, offering the potential to significantly boost India's energy security and self-reliance.

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