

# 3 m wide corridor, 694 km long: GAIL's gas pipeline breakthrough

PIONEER NEWS SERVICE  
■ New Delhi

GAIL (India) Ltd has completed the Mumbai-Nagpur Natural Gas Pipeline (MNPL), a 694-kilometre trunkline built almost entirely inside a 3-metre-wide utility corridor along Maharashtra's Samruddhi Mahamarg expressway, marking India's first major integration of a high-capacity pipeline into a dense transport corridor under the PM-Gatishakti framework.

Stretching across 675 km of expressway corridor, the pipeline posed unprecedented engineering and logistical challenges. Conventional pipelines typically require 20-30 metres of workspace; here, GAIL had to install a 24-inch high-capacity gas line within the width of an average foot path while simultaneously coordinating with expressway construction across multiple packages managed by the Maharashtra State Road Development Corporation (MSRDC).

Around 675 km, or 96 per cent, of the pipeline runs inside a utility strip just three metres wide along the expressway, a constraint that fundamentally shaped engineering design and construction methods, officials said.

The pipeline, with a capacity of about 16.5 million standard cubic metres per day and bi-directional flow capability, is nearing full operational completion.



## Engineering feats in the western ghats

Detailing the engineering feat accomplished by the state-owned gas transportation and marketing utility, officials said the steep terrain of the Western Ghats, especially near Fugale hill, presented the toughest challenge.

Elevation differences exceeding 200 metres, rocky slopes, dense forest, and monsoon rains required a hybrid construction approach. Engineers combined horizontal directional drilling (HDD) with a thruster system to safely pull nearly a kilometre of pipeline through a steep profile, a technique rarely used in India.

Monsoon months were managed through slope stabilisation, dewatering, and protective measures to maintain safety and minimise rework, demonstrating disciplined project execution

under extreme conditions.

The pipeline navigated multiple forest, railway, and highway clearances across 10 districts covering 56 km.

The pipeline received regulatory authorisation in May 2020 but faced delays due to pandemic-related disruptions and forest clearances across 10 districts covering about 56 km, which were granted in April 2023.

GAIL adjusted work sequences and deployment to maintain momentum as stretches were handed over.

Throughout execution, daily coordination was required between multiple expressway packages and three pipeline sections, creating a joint working model now seen as a reference for future corridor-based infrastructure projects.

Daily coordination meetings aligned 16 expressway packages with three pipeline sections, enabling synchronised progress

without delays, they said.

## Economic and energy impact

The Mumbai-Nagpur pipeline is expected to significantly expand access to natural gas across Maharashtra, enabling city gas distribution networks in 16 districts, supporting piped natural gas connections for an estimated 95 lakh households and supplying fuel to more than 1,700 CNG stations.

Officials said the pipeline will support growth in sectors such as power generation, fertilisers, chemicals and manufacturing, while enabling cleaner fuel adoption along the Samruddhi Mahamarg corridor.

Availability of gas would also encourage establishment of small and medium-scale industries along the pipeline route, promoting regional economic growth and entrepreneurship, officials said, adding that the pipeline's alignment with Samruddhi Mahamarg supports the creation of new commercial zones, logistics hubs, and CNG stations, increasing regional connectivity and convenience.

GAIL's MNPL demonstrates that expressways can double as utility corridors, reducing land acquisition challenges and accelerating infrastructure deployment. Officials say the project is now a blueprint for future multi-utility corridors under India's Gatishakti framework.

## L&T bags large order from Petronet LNG



HYDROCARBON

ONSHORE

business vertical  
of engineering

and construction major L&T (L&T Onshore) has won a large order from Petronet LNG, a JV promoted by ONGC, Indian Oil, GAIL and BPCL.

# GAIL completes 694-km MNPL

**PTI**

NEW DELHI

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The pipeline, with a capacity of about 16.5 million standard cubic metres per day and bi-directional flow capability, is nearing full operational completion.

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# GAIL's expressway pipeline marks 1st of its kind integration milestone

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## OUR CORRESPONDENT

**NEW DELHI:** GAIL (India) Ltd has completed the Mumbai-Nagpur Natural Gas Pipeline (MNPL), a 694-kilometre trunkline laid almost entirely within a three-metre-wide utility corridor along Maharashtra's Samruddhi Mahamarg expressway. The project marks India's first major integration of a high-capacity gas pipeline into a dense transport corridor under the PM GatiShakti framework.

Around 675 km, or nearly 96 per cent, of the pipeline runs inside the narrow utility strip along the expressway. Conventional pipelines typically require 20–30 metres of workspace, but GAIL executed the project within the width of an average footpath while coordinating construction across multiple expressway packages handled by the Maharashtra State Road Development Corporation (MSRDC). The pipeline, with a capacity of about 16.5 million standard cubic metres per day and bi-directional flow capability, is nearing full operational readiness.

### ENGINEERING FEATS IN THE WESTERN GHATS

Officials said the most demanding stretch lay in the



**The pipeline, with a capacity of about 16.5 million standard cubic metres per day and bi-directional flow capability, is nearing full operational readiness**

Western Ghats, particularly near Fugale hill, where elevation differences exceeded 200 metres amid rocky terrain, dense forests and heavy monsoon conditions. Engineers adopted a hybrid construction approach, combining horizontal directional drilling with a thruster system to pull nearly one kilometre of pipeline through steep gradients — a technique rarely deployed in India.

During monsoon months, slope stabilisation, dewatering and protective measures were implemented to maintain safety

and limit rework. The pipeline also traversed forest, railway and highway crossings across 10 districts, covering about 56 km that required complex statutory clearances.

Although the project received regulatory authorisation in May 2020, progress was slowed by pandemic-related disruptions and delays in forest approvals, which were granted in April 2023. GAIL adjusted work sequencing and deployment to sustain momentum as land parcels were progressively handed over.

## Highlights

- » GAIL executed project within width of an average footpath while coordinating construction across multiple expressway packages
- » The most demanding stretch lay in Western Ghats, particularly near Fugale hill
- » There, elevation differences exceeded 200 metres amid rocky terrain, dense forests and heavy monsoon conditions

Daily coordination meetings aligned 16 expressway packages with three pipeline sections, creating a joint working model that officials say could serve as a reference for future corridor-based infrastructure projects.

### ECONOMIC AND ENERGY IMPACT

The MNPL is expected to significantly expand access to natural gas across Maharashtra. It will support city gas distribution networks in 16 districts, enable piped natural gas connections for an estimated 95 lakh households, and supply

fuel to over 1,700 CNG stations.

Officials said the pipeline would aid growth in power generation, fertilisers, chemicals and manufacturing, while accelerating adoption of cleaner fuels along the Samruddhi Mahamarg corridor. The availability of gas is also expected to encourage the development of small and medium enterprises, promote entrepreneurship and support the emergence of new commercial zones, logistics hubs and CNG stations along the route. GAIL officials and infrastructure planners said the MNPL demonstrates how expressways can double as utility corridors, reducing land acquisition challenges and social impact while accelerating infrastructure rollout.

Conceived as a backbone of Maharashtra's gas supply and a key link in the National Gas Grid, the project has delivered 18.7 million safe man-hours and an unprecedented collaboration model with MSRDC.

The MNPL is now being cited as a blueprint for future gas and multi-utility corridors under India's expanding GatiShakti framework, showcasing the strategic value of integrating energy infrastructure with transport planning from the outset.



## मुंबई-नागपुर गैस पाइपलाइन को एक्सप्रेसवे से सटकर बिछाया गया

नई दिल्ली। सार्वजनिक क्षेत्र की गैस परिवहन एवं विपणन कंपनी गेल (इंडिया) लिमिटेड ने मुंबईनागपुर प्राकृतिक गैस पाइपलाइन (एमएनपीएल) परियोजना को पूरा कर लिया है। करीब 694 किलोमीटर लंबी यह पाइपलाइन मुख्यतः महाराष्ट्र की समृद्धि महामार्ग एक्सप्रेसवे के किनारे तीन मीटर चौड़ी पट्टी में बिछाई गई है। अधिकारियों ने कहा कि यह परियोजना प्रधानमंत्री गति शक्ति ढांचे के तहत देश में पहली बार किसी उच्च क्षमता वाली गैस पाइपलाइन को घने परिवहन कॉरिडोर के साथ एकीकृत करने का प्रमुख उदाहरण मानी जा रही है।

## गेल (इंडिया) लिमिटेड को आईजीएक्स ऊर्जा संवाद 2026 में 'प्रोप्राइटरी मेंबर ऑफ द ईयर' सम्मान

नई दिल्ली। गेल (इंडिया) लिमिटेड को इंडियन गैस ए के स चें ज (आईजीएक्स) द्वारा आयोजित वार्षिक कार्यक्रम ऊर्जा संवाद 2026 में 'प्रोप्राइटरी



मेंबरऑफ द ईयर' पुरस्कार से सम्मानित किया गया। यह कार्यक्रम नई दिल्ली में 'आयोजित हुआ। गेल की ओर से यह पुरस्कार श्री सुमित किशोर, कार्यकारी निदेशक (गैस विपणन) ने पेट्रोलियम और प्राकृतिक गैस विनियामक बोर्ड (पीएनजीआरबी) के सदस्य श्री ए.के. तिवारी से प्राप्त किया।

# Coal gasification likely to see a ₹50K-cr incentive push by govt

IT WILL ALSO comprise other incentive structures for investors in underground coal gasification, and technology-intensive ventures for converting unmineable coal into combustible gases through *in situ* gasification.

Officials expect the higher Budget outlay and the revamped scheme will be closely tracked by energy PSUs, private developers and lenders as a reference point for capital allocation in clean-coal technologies.

Coal gasification converts coal into synthetic gas that can be used for power generation or as feedstock for fertilisers and chemicals. Policymakers increasingly see it as a transition lever—less emissions-intensive than direct coal combustion and capable of providing firm energy support as renewable capacity expands.

## Import dependence, stranded assets drive urgency

A key driver behind the proposed Budget push is India's exposure to volatile global gas (LNG) and fertiliser markets. The country currently has close to 20,000 MW of gas-based power capacity operating at low utilisation due to high LNG prices.

Under the emerging framework, new coal gasification units are expected to be located near existing gas-based plants, allowing domestically produced syngas to substitute imported LNG. Officials said this could improve plant load factors while creating demand certainty for gasification projects. Gasification also offers a pathway to monetise domestic coal without adding conventional coal-fired generation capacity, aligning with the govt's broader effort to reduce



emissions intensity while safeguarding energy security.

## From pilots to scale

"The government has set a target of achieving 100 million tonne per annum of coal gasification by 2030," said Rajib Maitra, partner, Deloitte India. "The earlier scheme could support only about 10% of this target. A larger incentive package is now being proposed to scale capacity to around 60–70% of the overall target." Officials said the expanded framework is aimed at commercial deployment, with enhanced VGF expected to lower equity requirements and address financing constraints.

## PSUs to anchor, private capital to follow

State-owned firms such as Coal India, NTPC, BHEL, GAIL, NLC India and SAIL are expected to anchor the initial phase, leveraging balance sheets, technical capability and existing infrastructure. NTPC has already initiated plans for a coal-to-synthetic natural gas facility and is in the process of appointing technical consultants to develop the project blueprint. Officials said similar projects could emerge across fertiliser- and steel-linked clusters.

Private participation is also expected to expand. Under the earlier incentive framework, private developers secured nearly ₹2,000 crore through competitive categories. "The expanded package may extend the VGF mechanism further for private companies, significantly lowering their equity burden," Maitra said. "This improves project bankability and enables lenders to engage more comfortably."

## Technology choices shaped by Indian coal

Coal quality remains a structural constraint. Indian coal typically has ash content of 30–45%, compared with 10–20% globally, leading to lower syngas yield and higher costs. To address this, policymakers are aligning incentives towards gasification technologies suited to Indian coal, with fluidised bed gasification emerging as a preferred option. Strong downstream integration with fertilisers, chemicals, hydrogen and steel is being prioritised to ensure assured offtake. Locating plants near gas-based power stations may strengthen demand visibility.

## Budget signal on coal's next role

By signalling a large-scale coal gasification push in Budget, the government is expected to underline a strategic shift from incremental coal combustion to value-added conversion linked to gas, fertilisers and industrial growth. For markets, the Budget signal could shape investment flows into clean-coal technologies. For policymakers, it marks an attempt to reposition coal as a transition asset rather than a constraint in India's energy transformation.

# एलएंडटी ऑनशोर को पेट्रोनेट एलएनजी से मिला बड़ा ऑर्डर

प्राची पिसाल  
मुंबई, 16 जनवरी

लार्सन एंड ट्रब्रो (एलएंडटी) की हाइड्रोकार्बन ऑनशोर व्यवसाय इकाइ एलएंडटी ऑनशोर को पेट्रोनेट एलएनजी से लगभग 2,500-5,000 करोड़ रुपये का ऑर्डर मिला है। पेट्रोनेट एलएनजी तेल एवं प्राकृतिक गैस निगम, ईंडियन ऑयल कॉर्पोरेशन, गेल (ईंडिया) और भारत पेट्रोलियम कॉर्पोरेशन की ओर से प्रवर्तित संयुक्त उपक्रम है।

यह परियोजना पूरी तरह से टर्नकी आधार पर दी जानी है। इसमें गुजरात में दहेज पेट्रोकेमिकल परिसर में 170,000 घनमीटर की क्षमता वाले तरलीकृत प्राकृतिक गैस (एलएनजी)/एथेन डबल-वॉल स्टोरेज टैंक और 1,40,000 घन मीटर क्षमता वाले प्रोपेन डबल-वॉल स्टोरेज टैंक की ईंजीनियरिंग, खरीद, निर्माण और उसे चालू करना (ईंपीसीसी) शामिल है।

एलएंडटी ने स्टॉक एक्सचेंज को जानकारी दी है कि परियोजना के दायरे में प्रोपेन डिलाइज़ेनेशन और पॉलिप्रोपाइलीन प्लॉट की मदद के लिए एथेन और प्रोपेन हैंडलिंग और डिस्पैच इकाइयां भी शामिल हैं।

एलएंडटी ने कहा है कि यह परियोजना स्वदेशी

पेट्रोरसायन निर्माण क्षमता में मजबूती लाएगी और सरकार की आत्मनिर्भर भारत पहले के अनुरूप है।

एलएंडटी के उप प्रबंध निदेशक और अध्यक्ष सुब्रमण्यन सरमा ने कहा, 'यह ऑर्डर हमारे लिए एक महत्वपूर्ण उपलब्धि है क्योंकि हम एलएनजी कोल्ड एनजी का लाभ उठाकर भारत के पहले एकीकृत पेट्रोकेमिकल कॉम्प्लेक्स में योगदान दे रहे हैं। यह राष्ट्र के आत्मनिर्भर भारत विजन के अनुरूप है और इससे स्वदेशी पेट्रोकेमिकल क्षमता मजबूती होती है।'

एलएंडटी ऑनशोर के वरिष्ठ उपाध्यक्ष और प्रमुख एवं एलएंडटी की कार्यकारी समिति के सदस्य ई एस सत्यनारायण ने कहा, 'पेट्रोनेट एलएनजी से इस अहम ऑर्डर को हासिल करना जटिल ईंपीसीसी परियोजनाओं को क्रियान्वित करने में हमारी विशेषज्ञता का मजबूत प्रमाण है। हम ऊंचे स्तर की गुणवत्ता बनाए रखते हुए, इस परियोजना को सुरक्षित, कुशलतापूर्वक और तय समयसीमा के अंदर पूरा करने के लिए पूरी तरह प्रतिबद्ध हैं।'

एलएंडटी ऑनशोर अपस्ट्रीम, मिडस्ट्रीम और डाउनस्ट्रीम हाइड्रोकार्बन क्षेत्रों में एकमुश्त टर्नकी समाधान प्रदान करती है। इसने रिफाइनरी विस्तार, पेट्रोकेमिकल परिसर, गैस प्रोसेसिंग प्लॉट, उर्वरक संयंत्रों, एलएनजी टर्मिनलों और क्रॉस-कंट्री पाइपलाइन का निर्माण किया है।