



Hon'ble Minister Shri Nitin Gadkari Inaugurates India's First National Highway using Bio-Bitumen Developed by Praj Industries

Roads constructed with lignin bio-bitumen, blended at up to 15%, can achieve a 70% reduction in greenhouse gas (GHG) emissions compared to conventional fossil-based bitumen.

Pune/Nagpur December 21, 2024: Praj Industries, India's leading industrial biotech company, today announced the inauguration of the country's first sustainable road made using lignin-based bio-bitumen. Inaugurated by the Hon. Minister of Road Transport and Highways, Shri Nitin Gadkari, this road is at the Nagpur-Mansar Bypass project, NH 44. This eco-friendly technology can partially replace fossil-derived bitumen and is being used to create the country's first national highway.

Praj's proprietary technology refines crude lignin into Lignin Bio-Bitumen and has the potential to replace fossil-based bitumen and offer sustainable solutions to the road infrastructure industry. This green construction material, with a blending capacity of up to 15%, offers significant benefits, including a 70% reduction in greenhouse gas (GHG) emissions compared to fossil-based bitumen.

India would require ~15 lakh tons of bio-bitumen to achieve 15% blending with conventional bitumen. Through this investment, India can save ₹4000-4,500 crore on foreign exchange, marking a transformative step toward sustainable and eco-friendly road infrastructure.

Commenting on this development, Shri. Nitin Gadkari, Hon. Minister of Road Transport and Highways, congratulated Praj on the successful development of this technology saying, "The bio-bitumen used in this project, developed by Praj Industries in collaboration with CSIR-CRRI, is a significant step toward sustainability. It reduces our dependency on imported bitumen and provides an innovative solution by turning agricultural waste into a valuable resource." He also expressed that in the future, our farmers will not only be food providers but also energy providers, producing bio-hydrogen and contributing to a cleaner and greener India.

In a collaborative project with CSIR- Central Road Research Institute (CRRI), Praj tested the lignin-based bio-bitumen sample for application studies, successfully replacing up to 15% of bitumen. Praj laid a service road in Halol, Gujarat using Lignin Bio Bitumen as one of the components. After 2.5 years and 3 monsoon seasons, CSIR-CRRI conducted the performance evaluation, and the results were found satisfactory with no signs of distress on the road. This success was one of the key factors in building the Nagpur-Mansar project.

Talking about this milestone, **Dr. Pramod Chaudhari, Founder Chairman, Praj Industries** said, *"The inauguration of India's first sustainable road using a lignin-based bio-bitumen is a proud moment for Praj Industries and a testament to India's commitment towards a greener and self-reliant future. This innovative lignin-based bio-bitumen, developed under the 'Make in India' initiative, not only replaces fossil-based bitumen but also helps*



save significant foreign exchange, strengthening our nation's vision of Atmanirbhar Bharat. We deeply thank the Hon. Minister of Road Transport and Highways, Shri Nitin Gadkari, for his visionary leadership and unwavering support in fostering sustainable infrastructure development. As we look toward the goal of Viksit Bharat 2047, we are also advancing our efforts in bio-hydrogen development, which holds immense potential to transform India's energy landscape and contribute to a sustainable future. At Praj, we remain dedicated to pioneering eco-friendly solutions contributing to nation-building and global climate goals."

Bitumen, a black viscous mixture of hydrocarbons produced by fractionation of crude oil, serves as a crucial binder in road construction. However, the rapid consumption and future demand of this product requires a sustainable solution to attain the vision of Viksit Bharat 2047. According to oil ministry data, India's bitumen consumption in 2023-24 was 88 lakh tons and expected to rise to 100 lakh tons in 2024-25. 50% of this bitumen is imported, incurring an annual import cost of ₹25,000-30,000 crore for the country.

About Praj Industries Limited:

Praj, India's most accomplished industrial biotech company, is driven by innovation, integration, and delivery capabilities. Over the past four decades, Praj has focused on environment, energy, and agri-process industry, with more than 1000 customer references spanning more than 100 countries across five continents. Bio-Mobility® and Bio-Prism® are the mainstays of Praj's contribution to the global Bioeconomy. The Bio-Mobility® platform offers technology solutions globally to produce the renewable transportation fuel, thus ensuring sustainable decarbonization through a circular bioeconomy. The company's Bio-Prism® portfolio comprises technologies to produce renewable chemicals and materials, promises sustainability while reimagining nature. Praj Matrix, the state-of-the-art R&D facility, forms the backbone for the company's endeavours towards a clean energy-based Bioeconomy. Praj's diverse portfolio comprises Bio-energy solutions, Critical process equipment & skids, Breweries, Zero liquid discharge systems and High purity water systems. Led by accomplished and caring leadership, Praj is a socially responsible corporate citizen. Praj is listed on the Bombay and National Stock Exchanges of India.

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