

SGFAR **5.5** Cumulative Shipment In India
GW+



SINENG

NO. 2 PV INVERTER SUPPLIER IN INDIA

Source: S&P Global © 2025, Crisil Bridge to India, JMK Research & Analytics



Uttar Pradesh's
Largest Energy Expo

3
DAYS

10,000+
ENERGY
PROFESSIONALS

250+
EXHIBITING
COMPANIES

200+
CONFERENCE
SPEAKERS

20+
CONFERENCE
SESSIONS

07 08 09 May 2026
Indira Gandhi Pratishthan
(IGP), Gomti Nagar, Lucknow

Airox Nigen Installs 125 kW Hydrogen System For NPCIL To Advance Green Energy In Maharashtra

By **Mohan Gupta** - 16th December 2024



Representational image. Credit: Canva

Airox Nigen has completed the installation of a 25 Nm³/hr (125 kW) fully skid-mounted hydrogen generation system at the Tarapur Nuclear Power Plant in Maharashtra. This marks a significant milestone in India's green hydrogen revolution. Designed for high-purity hydrogen production, the project reflects Airox Nigen's commitment to advancing sustainable energy solutions, enhancing grid stability, and reducing carbon footprints.

The project involved various phases, including design, engineering, supply, installation, testing, commissioning, and ongoing maintenance. Airox Nigen collaborated with NPCIL (Nuclear Power Corporation of India Limited) to develop a state-of-the-art hydrogen generation system. The primary objective was to generate hydrogen as a clean energy source and integrate it into NPCIL's grid to enhance its stability and sustainability. The system was specifically tailored to support NPCIL's goals of reducing carbon emissions and strengthening renewable energy usage.



The system has an electrolyzer capacity of 125 kW and produces 54 kilograms of high-purity hydrogen per day during daylight hours. Hydrogen is stored at 10 bar pressure and is further compressed to 150 bar for cylinder filling. This stored hydrogen is then utilized to supplement the grid, ensuring a stable and sustainable energy flow. The generated hydrogen is directly integrated into NPCIL's grid, contributing to a reliable and clean energy supply.

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Airox Nigen was responsible for all aspects of the project. The company managed the design and engineering process to meet NPCIL's specifications. It ensured the efficient supply and installation of all components, including electrolyzers and storage tanks. Rigorous testing and commissioning processes were carried out, including a 100-hour trial to verify system performance. Airox Nigen continues to provide long-term operational and maintenance support to ensure the system functions smoothly.

The project posed several challenges. Integrating the hydrogen generation system with the nuclear grid required advanced engineering for seamless operation and safety. A fully skid-mounted system was designed to ensure ease of installation and compatibility with NPCIL's infrastructure. Managing hydrogen storage and compression at high pressures also presented difficulties, which were addressed using cutting-edge compression technologies and robust storage solutions. A meticulous trial process was undertaken to meet all performance and safety standards before the system's inauguration.

This project has had a significant impact on India's renewable energy landscape. It supports NPCIL's efforts to develop a sustainable, low-carbon energy grid and demonstrates Airox Nigen's capability to deliver advanced clean energy solutions. The system's successful operation positions Airox Nigen as a key player in the growing hydrogen economy. The company is expected to undertake future projects that will expand the use of green hydrogen across various industries.

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The system has achieved its goal of producing high-purity hydrogen daily, which is fed into NPCIL's grid to ensure a stable energy supply. The project contributes to reducing reliance on fossil fuels, significantly cutting carbon emissions, and advancing India's sustainability goals. It also provides NPCIL with a reliable clean energy source while allowing Airox Nigen to showcase its expertise in hydrogen generation. For India, this project is a step forward in achieving the nation's net-zero emission target by 2050.

The successful completion of the hydrogen generation system at Tarapur is a notable achievement in India's clean energy journey. It highlights Airox Nigen's technical expertise and sets a precedent for future hydrogen initiatives, contributing to a low-carbon energy future.



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