

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAJYA SABHA
UNSTARRED QUESTION NO. 2378
ANSWERED ON 07.08.2026

HYDROGEN-POWERED TRAINS

2378 SHRI SANJAY RAUT:

Will the Minister of RAILWAYS be pleased to state:

- (a) the total expenditure incurred on the development of India's first hydrogen-powered train, including rolling stock and hydrogen infrastructure;
- (b) whether any comparative techno-economic study has been conducted between hydrogen, battery-electric and fully electrified trains in terms of cost, efficiency, emissions and long term viability, if so, the details thereof;
- (c) the details of hydrogen train projects approved and proposed across the country, route- wise;
- (d) the availability and cost of green hydrogen for such projects; and
- (e) the timeline for expansion, indigenous manufacturing achieved, expected operational and environmental benefits of the project?

ANSWER

MINISTER OF RAILWAYS, INFORMATION & BROADCASTING AND
ELECTRONICS & INFORMATION TECHNOLOGY
(SHRI ASHWINI VAISHNAW)

(a) to (e) The Hydrogen powered train was inaugurated on 17.07.2026. Till 03.08.2026, this train has covered 2492 km of commercial run in 89 km long Jind-Sonipat section. The hydrogen train has been developed by Indian Railways on pilot basis to demonstrate the use of hydrogen powered train technology in Railways.

A dedicated Hydrogen Plant has been setup at Jind for providing hydrogen in this Trainset. The hydrogen storage facility has been set up in accordance with the guidelines of the Petroleum and Explosives Safety Organization (PESO), ensuring adherence to prescribed safety standards and protocols.

The Hydrogen Trainset operation ensures zero CO₂ emissions with water vapour being the only emission. The Trainset works on fuel cell technology that does not have any moving part and conventional engine for traction power generation therefore the operation is much quieter thereby reducing noise pollution. This project establishes Indian Railways in hydrogen technology.

This pilot project has been developed at a total cost of Rs. 141 Cr. As the Hydrogen Trainset and its infrastructure have been developed on a pilot basis, direct comparison of the cost of hydrogen-fuelled trains with established traction systems at this stage would not present a fair cost comparison.

Prominent features and advantages of this technology include:

- Indigenously designed and developed in India demonstrating IR's commitment to Atmanirbhar Bharat.
- Presently, it is the world's longest (10 coaches) and most powerful (2400 kW) Hydrogen Trainset on Broad Gauge platform.
- The Trainset comprises of two Driving Power Cars (DPCs) of 1200 kW each, totalling 2400 kW along with eight passenger cars.
- It represents a major step in development of next generation fuel technology in Railways, inherently optimizing noise reduction and curtailing reliance on imported fossil fuels.

At present, IR has taken up the running of hydrogen-powered train technology on a pilot basis on the Jind-Sonipat circuit. Decision to run hydrogen trains on other routes depends on availability of resources, operational and other requirements.
