



Indian Railways Achieves Electrification of One of Its Toughest Ghat Sections: Sakleshpur–Subramanya Road

We Will be Able to Run Vande Bharat Train Through This Route to Mangaluru: Ashwini Vaishnaw

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Indian Railways has achieved a major engineering milestone by completing the electrification of the Sakleshpur-Subramanya Road Ghat Section. This section is among the most difficult and technically challenging terrains on the Indian Railways network.

The milestone was marked by a successful electric locomotive trial on 28 December 2025. With this, the section is now fully ready for electric train operations. With the electrification of this ghat stretch, the entire Bengaluru-Mangaluru rail route is now fully electrified. This will improve rail connectivity, operational efficiency and sustainability in the region. The project will also enable the operation of Vande Bharat and other fast electric trains, offering faster, cleaner and more reliable travel to the coastal region.



The electrified ghat section covers 55 km between Sakleshpur and Subramanya Road. The terrain is extremely complex having no approach road to the railway track. It includes a steep ruling gradient of 1 in 50, 57 tunnels, 226 bridges, and 108 sharp curves. The area is also highly prone to landslides, especially during the monsoon. Electrifying this stretch was therefore a significant engineering challenge.

The electrification work began in December 2023. The project included the construction of five switching stations and full overhead electrification. To ensure safety and reliability, the maximum distance between traction poles was kept at 67.5 metres.



Tunnel electrification required special attention. In the 57 tunnels, 427 main brackets and 427 spare brackets were installed. Detailed geological studies were carried out with support from the National Institute of Rock Mechanics and Bangalore University. To ensure long-term safety, pull-out tests were conducted at every bracket location to check anchoring strength.

The steep gradients required specialised equipment and strong engineering solutions. Work was frequently affected by heavy rainfall, landslides, soil erosion and rockfalls. In many locations, materials had to be transported by rail to reach remote and inaccessible sites. Strict safety measures were followed during the entire project. The work was carried out with meticulous planning because of steep gradients, while ensuring safe and uninterrupted train operations throughout the project period.



With electrification complete and trials successful, the ghat section is now fully ready for electric traction. This will lead to lower fuel consumption, reduced emissions and more efficient operations. It also supports the introduction of modern electric superfast train services including Vande Bharat services in the region.

The electrification of this vital ghat section will also strengthen economic and commercial linkages between Bengaluru, the country's IT capital and the port city of Mangaluru, as well as other coastal commercial centres. Introduction of electric trains will facilitate smoother movement of people and business travel, thereby stimulating trade, services and allied economic activities across the coastal region.

Highlighting the impact of this achievement, Union Minister for Railways, Information & Broadcasting, and Electronics & Information Technology, **Shri Ashwini Vaishnaw said, "Now we will be able to run Vande Bharat train through this route to Mangaluru."**

Indian Railways has already electrified more than 99% of its Broad Gauge network. Since 2014, over 46,900 route kilometres have been electrified, compared to 21,801 route kilometres in the nearly six decades before 2014. Between 2019 and 2025 alone, around 33,000 route kilometres were electrified, almost equal to the entire railway network of Germany.

Once the remaining small sections are completed, India will have one of the largest fully electrified railway networks in the world. This reflects Indian Railways' strong commitment to clean energy, reduced carbon emissions, energy security and reliable rail travel for millions of passengers every day.

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