# India shifts to sustainable mobility with electric retrofitting for autorickshaws



India is making strides towards sustainable mobility as it transitions from internal combustion engine (ICE) vehicles to electric alternatives, which is a critical component in the country's strategy to reduce carbon emissions. This effort faces numerous challenges, notably the financial burden of retrofitting existing vehicles. In response, the Technology Development Board (TDB) within the Department of Science and Technology has introduced financial support to Electromotion E-Vidyut Vehicles Pvt. Ltd., a start-up located in Raipur, Chhattisgarh, for their innovative solution, the “RetroKit™: Electric Retrofitment Kits for Combustion Engine Vehicles.”

Electromotion E-Vidyut Vehicles Pvt. Ltd. emerged during the Smart India Hackathon of 2017 and has since focused on developing cutting-edge automotive technologies, especially in the electric vehicle sector. Their cornerstone product, RetroKit™, is specifically engineered to convert ICE autorickshaws into electric vehicles. Rigorous testing by the Automotive Research Association of India (ARAI) has ensured that this product adheres to all necessary regulatory standards. The conversion of traditional autorickshaws to electric models not only propels the agenda of sustainable transportation but also aligns with India's overarching objectives of cutting greenhouse gas emissions and promoting green technologies.

The RetroKit™ offers numerous transformative advantages within the autorickshaw market. A leading benefit is the potential economic improvement for drivers, who can reportedly enhance their daily income by as much as 51%. This financial boost is primarily attributed to the reduction of maintenance costs and the removal of fossil fuel expenses, leading to a more stable and lucrative livelihood. In terms of environmental impact, each conversion is projected to decrease annual CO2 emissions by around 3,000 kg—equivalent to the ecological benefits of planting 21 trees—demonstrating substantial potential in the quest for sustainable urban transport. The kit is compatible with autorickshaws older than five years, widening the scope for retrofitting operations. Additionally, RetroKit™ is engineered for optimal performance, achieving a top speed of 50 km/h and ensuring excellent functionality under heavy load conditions—a vital consideration for the drivers operating in often demanding environments.

The RetroKit™ system is meticulously designed, incorporating several key components that enhance its operational capabilities. It features a modular gearbox assembly, gearbox mounts, and a motor mount, all working in unison to ensure a seamless transition from combustion to electric power. Complementing these components is a digital dashboard that provides drivers with crucial data concerning vehicle performance, thereby augmenting their control and situational awareness. The system further includes an auxiliary signal adapter and an overarching power distribution and protection system that contributes to safety during operation.

One of the remarkable aspects of the RetroKit™ is the RetroKit™ Diagnostix, a feature that validates the retrofitment process and guarantees that each converted vehicle meets relevant safety and efficiency standards. Over 10,000 kilometers of successful on-road testing have substantiated the RetroKit™'s potential to redefine both urban and rural commuting, making electric mobility accessible to millions at affordable rates.

The initiative has attracted notable interest from government officials, including Sh. Rajesh Kumar Pathak, Secretary of the TDB. In his remarks regarding the project, Pathak stated, “RetroKit™ by Electromotion E-Vidyut is a revolutionary innovation that addresses a critical challenge in India’s journey towards sustainable mobility.” He highlighted the importance of the project in empowering autorickshaw drivers while simultaneously reducing vehicular emissions, consistent with the manifesto of an Atmanirbhar Bharat, or self-reliant India.

A representative from Electromotion added that the initiative illustrates India’s commitment to achieving a greener future through innovation and self-sufficiency. With the TDB's backing and the potential for wide-ranging adoption, the RetroKit™ could serve as a significant force for change within India's transportation landscape. As the nation advances towards sustainability, initiatives such as this are integral to achieving environmental targets and enhancing the livelihoods of significant demographics.

Source: [Noah Wire Services](https://www.noahwire.com)

## References

* <https://tdb.gov.in/technology-development-board-tdb-under-department-science-and-technology-dst-announced-financial> - This link provides information on the Technology Development Board (TDB) under the Department of Science and Technology (DST) announcing financial assistance for innovative EV projects, although it does not specifically mention Electromotion E-Vidyut Vehicles Pvt. Ltd. or the RetroKit™, it supports the context of TDB's involvement in EV technology.
* <https://swarajyamag.com/news-brief/central-government-plans-financial-support-for-research-and-development-in-key-electric-vehicle-subsystems> - This article discusses the central government's plans for financial support for research and development in EV subsystems, which aligns with the broader context of government initiatives in promoting EV technology in India.
* <https://timesofindia.indiatimes.com/auto/electric-cars/global-evs-projected-to-reach-85-million-by-2025-with-india-anticipating-500000/articleshow/114270795.cms> - This article forecasts the growth of EVs in India and globally, supporting the context of India's transition to electric vehicles and the importance of such initiatives.
* <https://www.noahwire.com> - Although the specific article is not available, this link is mentioned as the source of the information about Electromotion E-Vidyut Vehicles Pvt. Ltd. and the RetroKit™.
* <https://www.araiindia.com/> - The Automotive Research Association of India (ARAI) is mentioned as the body that conducted rigorous testing to ensure the RetroKit™ adheres to regulatory standards, though the specific link does not directly corroborate this, it is the official website of ARAI.
* <https://www.dst.gov.in/> - This is the official website of the Department of Science and Technology (DST), which oversees the Technology Development Board (TDB) and supports various scientific and technological initiatives, including those related to EVs.
* <https://www.meity.gov.in/> - The Ministry of Electronics and Information Technology (MeitY) is involved in various initiatives related to technology development, including EVs, as mentioned in other related articles.
* <https://www.mhi.gov.in/> - The Ministry of Heavy Industries (MHI) is also involved in promoting EV technology and providing financial support, as mentioned in other related articles.
* <https://www.india.gov.in/spotlight/atmanirbhar-bharat-abhiyan> - This link explains the concept of Atmanirbhar Bharat, or self-reliant India, which is mentioned in the context of the RetroKit™ initiative aligning with national goals.
* <https://www.envfor.nic.in/content/environmental-impact-assessment> - This link provides information on environmental impact assessments, which are relevant to the discussion on reducing CO2 emissions and promoting green technologies through the RetroKit™.