

Why Retrofitting is a Perfect Fit for Sustainable Urban Transport and Job Creation

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Retrofitting internal combustion engines to electric offers India a powerful and viable route to achieve total EV adoption, conserving existing resources and driving job creation

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Article Content:

The rapid rise in vehicle numbers, driven by urbanisation and population growth, is particularly evident in emerging economies such as India, where economic development outpaces the global average. This increase contributes significantly to environmental pollution, worsening the impacts of climate change. To mitigate these adverse consequences, the Indian government has taken proactive measures by specifying the end-of-life for vehicles.

However, with millions of vehicles manufactured annually, the premature removal of existing vehicles that still have usable life, may not be the most effective approach. Rather than replacing the entire vehicle population, a more viable option might be to transition internal combustion engines (ICE) to greener alternatives.

Why retrofitting works

In this context, retrofitting ICE vehicles as electric vehicles (EVs) has emerged as a critical strategy for sustainable urban transportation. Apart from being cost-effective, this alternative reduces vehicular emissions and upgrades existing vehicles while conserving valuable resources. Unlike building new electric vehicles, which demands considerable time and investment, retrofitting involves replacing the engine, gas tank, and catalytic converter with an electric motor, batteries, and a controller. This process is quicker, does not entail altering the vehicle's body or frame, and maintains safety standards.

As India moves towards becoming a developed nation by 2047, with a strong emphasis on manufacturing excellence, innovations like retrofitting could steer the country towards total EV adoption along a less disruptive and more feasible glide path. The spinoff could lift domestic component manufacturing, research and development, and skill development and position India as a leader in sustainable transportation innovation.

In sync with govt policy

Retrofitting offers significant benefits for State Road Transport Undertakings (SRTUs) as well, as it is 32.1% more cost-effective than acquiring new EV buses. In other words, bus utilities can continue using their current fleets with affordable upgrades and delay the substantial costs of buying new EVs. Transitioning buses from diesel to electric can yield substantial operational savings, lower greenhouse gas emissions, and extend the life of buses by eight to ten years. The savings on fuel costs following a makeover can cover the cost of retrofitting within 4 to 5 years, making it an economically sound choice.