

## WEBINAR ON TOWARDS NET ZERO: EXPLORING PATHWAYS FOR HEAVY DUTY VEHICLES IN INDIA: OUTCOMES

The International Council on Clean Transportation (ICCT), in partnership with ET Auto, organised a webinar on May 27, 2024, addressing the critical issue of decarbonizing India's heavy-duty vehicle (HDV) sector, which currently contributes about 58% of the country's on-road transport emissions. With projections suggesting a near doubling of these emissions by 2050, urgent action is needed to align with national and international climate commitments. Despite measures like HDV fuel consumption standards and the FAME scheme for e-buses, a more sustained and comprehensive approach is required. During the webinar, ICCT presented findings from two recent studies: "[A Comparison Of The Life-cycle Greenhouse Gas Emissions From Combustion And Electric Heavy-duty Vehicles In India](#)," published in May 2024, and "[Assessing The Scale Of Zero-emission Truck Deployment Required For Meeting India's Net-zero Goal](#)." The webinar discussed different HDV technologies and fuel pathways to reduce lifecycle emissions and the pace of electrification in HDVs for the decarbonization of the sector to align it with the net zero goal of India.

**Speakers** included members from the government, private sector, civil society, academia and practitioners.

The keynote speaker was Dr. Hanif Qureshi, Additional Secretary, Ministry of Heavy Industries. Anumita Roychowdhury, Executive Director of Research and Advocacy at the Centre for Science and Environment (CSE), Sunil Bhatnagar, CXO- Lithium Project IPLT, IPLTech Electric P Ltd., I.V. Rao, Distinguished Fellow, TERI - The Energy and Resources Institute, and Nikita Pavlenko, Program Lead, Fuels, ICCT were speakers during the webinar.

While Amit Bhatt, Managing Director, India, ICCT, gave the introduction and set context for the webinar Aviral Yadav and Namita Singh shared presentations on findings from Life-cycle Greenhouse Gas Emissions from Combustion and Electric Heavy-duty Vehicles in India and Assessing the Scale of Zero-Emission Truck Deployment Required for Meeting India's Net-Zero Goal, respectively.

This webinar shed light on the potential pathways for decarbonizing India's HDV sector through innovative vehicle technologies and fuel alternatives. It featured projections on shifts in vehicle emissions up to 2070, considering technological advancements, and examining the impact of current policies on HDV emissions. Regulatory and fiscal policies are needed to advance the electrification in the HDV sector.

## HIGHLIGHTS FROM THE WEBINAR

**The key highlights from the presentations by Aviral Yadav, Researcher and Namita Singh, Associate Researcher ICCT India were:**

- » Battery electric HDVs produced in India today can provide the greatest GHG emission reductions of present-day vehicle technologies.
- » The emission savings from Battery Electric HDVs will keep on growing as the grid gets decarbonized.
- » Biofuel blending will have a limited impact on HDV emissions in India.
- » At best, natural gas-fueled HDVs provide modest GHG savings compared to their diesel counterparts.
- » Blending hydrogen into the natural gas grid will have a modest impact on the emissions of LNG trucks.
- » The overall life-cycle impact of fuel cell HDVs varies considerably based on the source of hydrogen used.
- » To align with the 2070 net-zero target, India would need to achieve 100% ZETs for new sales by no later than 2050.
- » To align with a global pathway to limit warming to well below 2 °C, ZET sales would need to be further accelerated to reach 30% by 2030 and 100% by 2045.
- » Grid decarbonization is vital in all scenarios to meet India's 2070 climate goal.
- » The study underscores the critical importance of the pace of decarbonization through ZET penetration, grid decarbonization, and the implementation of other strategies, such as efficiency improvements, vehicle scrappage and logistics optimization, for attaining emissions-reduction objectives.

## KEY QUOTES

*"The country has set ambitious targets for decarbonization. A large proportion of emissions comes from heavy duty vehicles. The govt of India have been trying to look at this issue. The Ministry of Heavy Industries, Government of India is running several schemes like FAME, FAME 2 and the next addition of this scheme where we have incentives for electric vehicles. We must formulate a vision for 2047 to answer what should be the scenario of electric trucks and zero emission trucks in India. We will have to identify certain corridors to prioritize. We are also very happy to know there are several OEMs who have started production of electric trucks. The idea is to figure out how we as the government can support the adoption of electric trucks with technical and financial solutions."*

**Dr. Hanif Qureshi, Additional Secretary, Ministry of Heavy Industries, Government of India**

*"Investments have a huge opportunity cost and must not be spread thin. So, we need to be careful about locking in investment. We should prioritize the choices that will decide the infrastructure in future because infrastructure once created cannot be re-done. So, clearly, I would say that let's therefore prioritize to decide the future pathways around the ZEV (zero emission vehicle) mandate; linking it with the whole renewable energy portfolio."*

**Anumita Roychowdhury, Executive Director of Research and Advocacy at the Centre for Science and Environment (CSE)**

*“Problem is that this Electric Trucks is not picking up because government in the initial schemes of FAME 1 and FAME 2 prioritized the passenger vehicles and rapid transport and electric trucks did not have any subsidy. For electric buses, there is a subsidy of 20,000 INR per kWh of battery capacity which amounts to close to 50 lakh rupees in a bus. This kind of subsidy is not available in the trucks segment so upfront cost is a big challenge what we are facing.”*

**Sunil Bhatnagar, CXO- Lithium Project IPLT, IPLTech Electric P Ltd.,**

*“One thing that really came out of this study for India specifically was the results for battery electric trucks. It suggested that the electrification was what you could call a “no regret solution.” They generate some greenhouse gas reductions today with today’s electricity grid but as the grid improves this relative improvement also compounds and grows significantly. That means that there’s part of this analysis that’s not just about policy recommendations for the transport sector but also policy recommendations for the electricity sector because improvements there complement changes here. Reducing transmission distribution losses, reducing the share of coal in the grid, deploying more renewables, can all quickly increase the gap between electric and diesel.”*

**Nikita Pavlenko, Program Lead, Fuels, ICCT**

*“Electrification of mobility is the right solution in addressing the issue of carbon emissions of mobility and transport. We should push electrification of trucks gradually and not drastically. There are multiple factors involved. With all these PLI (Production Linked Incentive) schemes that the government has come up with, it would be localizing most of the parts required for electrification, so the cost impact of electrification also is likely to come down. At that time, heavy duty vehicles can be pushed more especially because the capacity of the battery is extremely high in case of heavy-duty vehicles to cover for the required range and as a result the cost is also very high.”*

**I.V. Rao, Distinguished Fellow, TERI - The Energy and Resources Institute**

## RESOURCES

1. [Webinar Recording](#)
2. [Presentation](#)
3. [A comparison of the life-cycle greenhouse gas emissions from combustion and electric heavy-duty vehicles in India](#)
4. [Assessing the scale of zero-emission truck deployment required for meeting India's net-zero goal](#)

Please reach out to Aviral Yadav, Researcher, ICCT ([a.yadav@theicct.org](mailto:a.yadav@theicct.org)) for any queries.



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