



# WORLD SUSTAINABLE DEVELOPMENT SUMMIT 2022

**TOWARDS A RESILIENT PLANET:  
ENSURING A SUSTAINABLE AND EQUITABLE FUTURE**

February 16-18, 2022



## Concept Note

### Electrification of Heavy-Duty Vehicles – An Emergent Economic Opportunity

*Date: February 17, 2022 Time: 10.00 am – 11.30 am (IST) | Duration: 90 minutes*

India's transport sector accounts for about 70% of total diesel consumption. The heavy-duty vehicle (HDV), light-duty vehicle (LDV) and the bus segments together consume ~40% of the total diesel consumption<sup>1</sup>. As freight activity is expected to grow by 5-6 times between 2011 and 2032<sup>2</sup>, the commercial vehicle segment will likely continue to dominate the demand for diesel and hence, impact India's oil import dependency.

It is estimated that electrification of trucks and delivery vehicles could lead to savings worth \$97 billion in oil imports and 7 gigatons of carbon emissions by 2050. With every diesel truck emitting 1,300 tons of CO<sub>2</sub> over its lifetime<sup>3</sup>, the decarbonization opportunity and potential to alleviate air pollution are both massive.

Trends indicate that in the HDV segment, electric drivetrains will soon have many advantages over internal combustion engines (recent research indicates that some segments within medium-duty vehicle (MDV) and HDVs already have better business cases than ICE counterparts). For India, transition to zero emission vehicles (ZEV) in the HDV segment will be critical in achieving the targets announced during the COP26 Climate Summit in November 2021, especially the net-zero emissions target by 2070.

<sup>1</sup> <https://www.ppac.gov.in/WriteReadData/Reports/201411110329450069740AllIndiaStudyonSectoralDemandofDiesel.pdf>

<sup>2</sup> [https://niti.gov.in/planningcommission.gov.in/docs/reports/genrep/present\\_ntdpc2802.pdf](https://niti.gov.in/planningcommission.gov.in/docs/reports/genrep/present_ntdpc2802.pdf)

<sup>3</sup> <https://www.greenbiz.com/article/epic-opportunities-move-indias-goods-without-emissions>

With the deployment of battery electric vehicles (BEVs) being a key priority for the government, several measures at the central and state levels are driving demand in the two/three-wheeler and passenger car segments. More recently, production linked incentive 'National Programme on Advanced Chemistry Cell (ACC) Battery Storage' and India's 'National Mission on Transformative Mobility and Battery Storage' have laid the foundation for the country's emergence as a hub for electric mobility solutions and battery manufacturing.

Similarly, India has an inherent advantage to be the leader in the electrification of heavy trucks. What is needed is a dedicated policy roadmap that enables cost-competitive technological solutions, infrastructure development and finance mobilization, accelerating India's transition to a zero-emission transport ecosystem. There are successful global models which India could adapt. For instance, California's Advanced Clean Truck Rule (ACT), positioned the state as a hub for manufacturing and export of HDVs. Sensing the immense economic benefits, 5 other states in the US (New York, New Jersey, Massachusetts, Washington and Oregon) have adopted ACT and more are expected to join.

NITI has already highlighted the need for and benefits of electrification of freight, with HDVs constituting an important part of that ambition. The global and philanthropic community have a significant role to play in supporting these transitions and easing barriers to the flow of finance and cost-effective technologies as well as enabling knowledge transfers and sharing of best practices. Globally, programs such as the US-based CALSTART's 'Drive to Zero' or EV100 or Transport Decarbonization Alliance have been instrumental in promoting a shift towards clean and near-ZE commercial vehicles. They can play a key role in accelerating action in India.

This session aims to share recent analysis, developments, challenges and opportunities of electrification of HDVs from a range of stakeholders and recommend areas for collaboration and coordination as well for the philanthropic community to support.

**Topics of discussion:**

- What are the advantages for India in electrifying the HDV segment and what opportunities exist? What are the key challenges that need to be addressed?
- What policy and regulatory measures could position India as a hub for manufacturing e-HDVs and benefit the industry in terms of new business opportunities?
- What are the learnings that could be drawn from international experience in the e-HDV segment and customized for adoption in India?
- How could philanthropy and civil society (including research institutions, think-tanks etc.) support this transition, both at the national and state levels?
- What are the most promising geographies (cities, routes) for HDV growth in the short term?