BRIEFING

Electric trucks in Indonesia: policy instruments to reach a net-zero pathway

Truck electrification can substantially cut freight emissions and oil imports, but the existing regulatory framework is not enough to reach Net-Zero Emission (NZE) by 2060, a new IESR analysis commissioned by T&E shows.

Making all trucks in Indonesia zero emission by 2060 requires all new sales in 2040 to be fossil free vehicles. Measures like binding zero emission sales targets for truckmakers, electrifying the Java-Sumatra logistics corridor and enforcing the age limit for fossil-fuelled trucks must be introduced to accelerate electrification in the next few years.

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Lead author: Reananda Permono
Contributors: Jude Lee, Stef Cornelis

Summary

Despite only representing 4% of Indonesia's vehicle stock, trucks account for almost 30% (~48 $MtCO_2eq$) of national transport's sector emissions. The total truck stock is projected to reach 12 million units by 2060 –up from 5 million in 2024– while freight activity triples to roughly 150 billion vehicle-kilometers per year. In addition, under a business-as-usual (BaU) trajectory, oil demand from medium and heavy trucks will increase to 260 million Barrels of Oil Equivalent (BOE) by 2060. Indonesia's reliance on oil imports makes it highly vulnerable to global crude oil price shocks, particularly given the fiscal strain of its diesel subsidies.

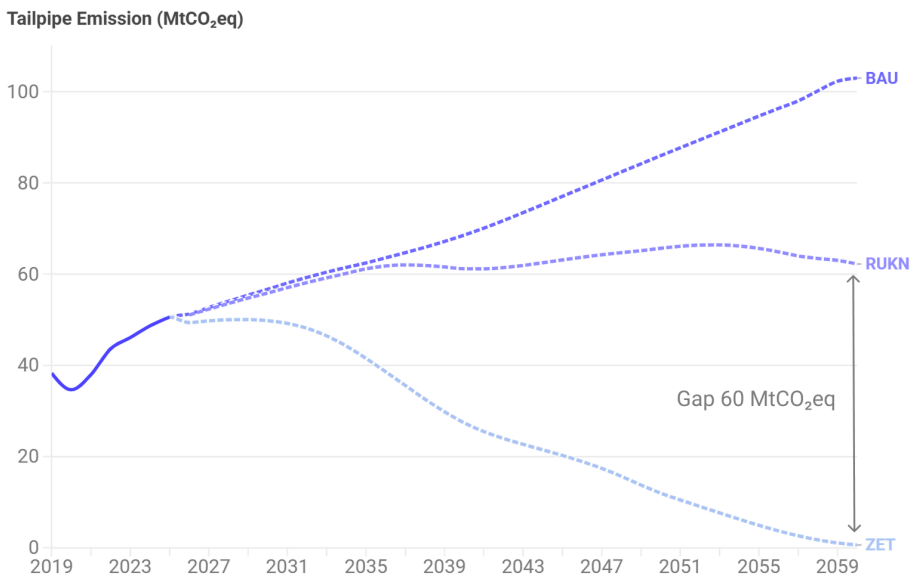
From a fiscal savings perspective, each deployed electric truck avoids IDR 21 million (approx 1,023 Euros) per year in diesel and palm oil subsidies by 2030. This figure is projected to rise to IDR 50 million by 2060. Scaling the production to 7.6 million electric trucks nationwide will generate a cumulative saving of IDR 5,000 trillion between 2025 and 2060–nearly double the 2025 Indonesia state revenue. In short, the truck sector stands out as one of the highest-leverage intervention points for decarbonisation, energy security and fiscal savings.

The transition to electric trucks still faces multiple obstacles. The market remains overwhelmingly dominated by diesel trucks. Startup brands currently lead the electric truck market, as just one major OEM has introduced an electric model to date. Countries like China show that a fast transition is possible.

Furthermore, around 33% of 2.6 million units of Indonesia's medium and heavy truck fleet is over 20 years old despite fleet age being regulated under the Ministry of Transportation Regulation 60/2019. The slow vehicle stock turnover suggests that regulations are not being strictly followed and that thin profit margins prevent operators from upgrading their fleets.

The current truck electrification target as stated in the National Electricity General Plan (RUKN) 2025-2060 still leaves around 60 $MtCO_2eq$ of tailpipe emissions in 2060, whereas the T&E ZET pathway eliminates emissions to near zero. Under a more ambitious pathway, achieving a net-zero freight trajectory requires 100% electric truck sales by 2040.

Tailpipe emission reduction for several scenarios



Source: IESR Model, 2026; RUKN, 2025

Key data points

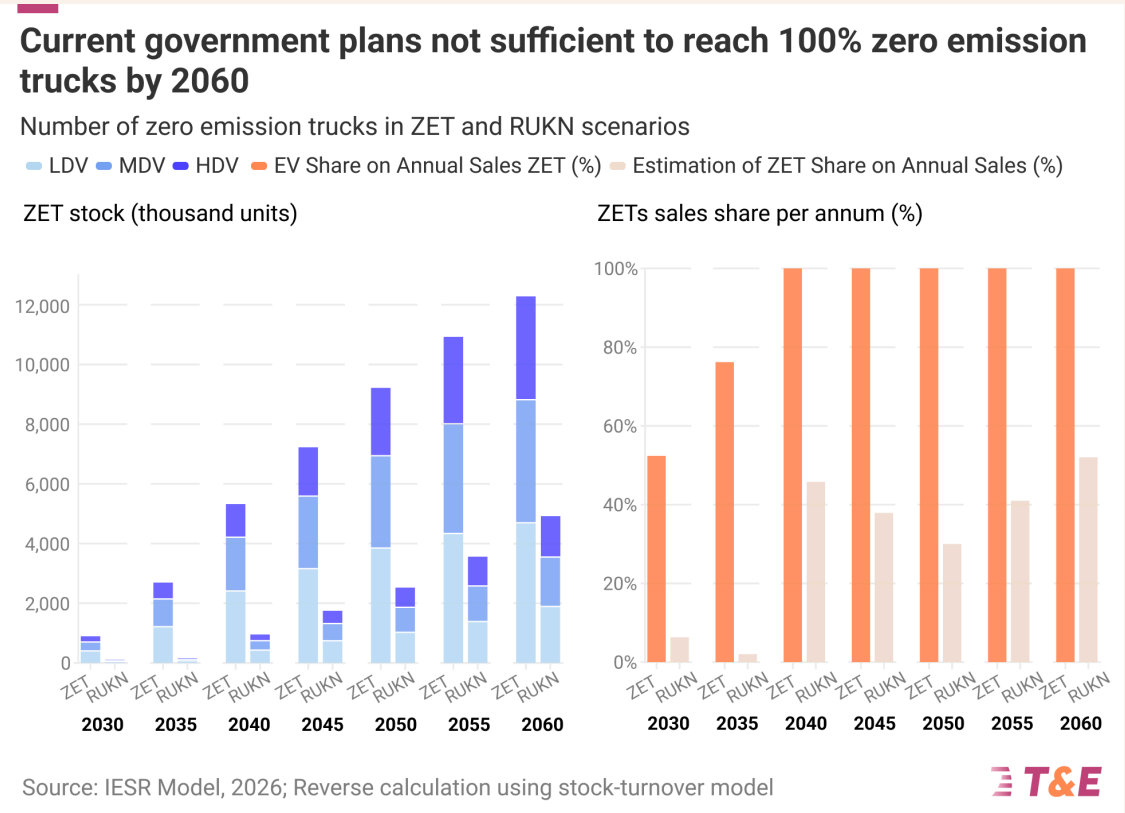
33%	of 2.6 million units of Indonesia's MDVs and HDVs are over 20 years old
IDR 21M	each deployed electric truck avoids IDR 21 million per year in diesel subsidies and compensations by 2030
300 tons	out of 598 tons per month on Indonesia's cargo activity occur in Java-Sumatra corridor

Policy recommendations to accelerate electric truck adoption

Indonesia can leverage the current disruptions in global oil supply chains as a catalyst for freight electrification, allowing the nation to transition away from its dependency on diesel

imports and the subsidies spent on these fuels. **T&E advocates for a 100% electric truck sales strategy by 2040** and recommends the following policies:

- **Develop a more ambitious roadmap for truck electrification by targeting a 100% share for electric truck sales by 2040.** The current electrification target of the Indonesian government (RUKN 2025-2060) is insufficient to align the freight sector with a net-zero pathway as it only targets 4.9 million electric trucks adoption by 2060. In contrast, the ZET pathway requires 100% ZET sales by 2040 and deploys more than 12 million electric trucks by 2060.



- **Enforce the implementation of vehicle age restriction as regulated under the Ministry of Transportation Regulation 60/2019.** The 20-year age limit –the typical minimum service standards (SPM)– as mentioned in the regulation could serve as an effective fleet turnover mechanism. Prioritising 800 thousands of aging MDVs and HDVs for electrification is a good start. Survey data indicates that truck operators struggle with fleet modernization due to long break-even periods and narrow profit margins. Providing targeted incentives could accelerate the phase-out of aging trucks, especially due to the high upfront cost of an electric truck that represents 42-52% of its total cost of ownership (TCO).

- **Binding zero emission sales targets for truckmakers combined with fiscal incentives.** The government should introduce binding zero emission sales targets for truckmakers as of 2030. This can be introduced together with fiscal incentives such as

temporary import-free tax exemptions for electric trucks, mirroring the successful 2024-2025 initiative for electric cars. Fiscal support should be paired with requirements for localizing electric truck production and investments by truckmakers in charging infrastructure.

- **Prioritize the Java-Sumatra logistics corridors for early electric truck adoption and charging infrastructure expansion.** The cargo trades in Java and Sumatra reached 300 million tons per month, making both islands as the primary locations for launching electric truck pilot programs. The highest concentration of emissions is found along the eastern segment of the Trans-Sumatra corridor (*Jalan Raya Lintas Timur*) and the Northern Coastal Route of Java (*Pantura*). Initial deployment could be supported by the installation of charging infrastructure along major national artery roads. In the Java-Sumatra corridor, 114 specific locations within 27 indicated areas have been identified for the deployment of 230 kW charging stations (refer to Appendix A).

- **Plan for generation capacity upgrade on the Jawa-Madura-Bali (*Jamali*) grid by 2030.** Besides the potential charging infrastructure expansion for the electric fleet, currently 85% of Indonesia's EVs are located in the Java-Bali region. The condition gives significant pressure on the Jamali grid. While the grid has a 46 GW capacity to meet a 35 GW peak demand in 2026, the situation will tighten as the fleet grows to 940,000 electric cars and 500,000 electric trucks by 2030. Analysis indicates that without additional generation capacity on the Jamali grid before 2030, electricity demand will exceed supply during the 19:00 to 06:00 window.

- **Prioritize early truck electrification adoption in closed-loop and quasi-shuttle setups, such as ports and industrial areas.** Trucks run on routine schedules for both use cases, facilitating easier trip management and charging planning. The report identifies two viable pilot corridors: Karawang Industrial Area to Patimban Port in Java and Muara Enim route in Sumatra. Depot charging is enough for the latter, but in Java case, it will need the combination of depot/en-route/port charging. Achieving TCO parity between electric and ICE trucks in these scenarios requires tax incentives alongside the removal of diesel subsidies.

Appendix A
List of potential locations for charging infrastructure in the Java-Sumatra corridor

No	Island	Regency/City	Corridor
1	Java	West Bandung	Cianjur - Bandung
2	Java	Ngawi	Sragen - Ngawi
3	Java	Pekalongan	Northern Coastal Route
4	Java	Kebumen	Southern Coastal Route
5	Java	Malang	Southern Coastal Route
6	Java	Subang	Northern Coastal Route
7	Java	Semarang	Jogja - Solo - Semarang
8	Java	Bekasi	Northern Coastal Route
9	Java	Ciamis	Ciamis - Banjar
10	Java	Cirebon	Northern Coastal Route
11	Java	Surabaya	Northern Coastal Route
12	Java	Rembang	Northern Coastal Route
13	Sumatra	Banyuasin	East Sumatra Highway
14	Sumatra	Pelalawan	East Sumatra Highway
15	Sumatra	South Labuhan Batu	East Sumatra Highway
16	Sumatra	Padang	West Sumatra Highway
17	Sumatra	Lampung - Palembang	East Sumatra Highway
18	Sumatra	Kuantan Singingi	Pekanbaru - Kuantan Singingi

No	Island	Regency/City	Corridor
19	Sumatra	Mandailing Natal	West Sumatra Highway
20	Sumatra	West Tanjung Jabung	East Sumatra Highway
21	Sumatra	Empat Lawang	West Sumatra Highway
22	Sumatra	Mukomuko	West Sumatra Highway
23	Sumatra	East Aceh	East Sumatra Highway
24	Sumatra	Aceh Besar	East Sumatra Highway
25	Sumatra	Subulussalam	West Sumatra Highway
26	Sumatra	Serdang Bedagai	East Sumatra Highway
27	Sumatra	South Lampung	East Sumatra Highway

Further information
Reananda Permono
Project Manager for Indonesia
reananda.permono@transportenvironment.org
Mobile: +62 821 3530 3652
www.transportenvironment.org | BlueSky | LinkedIn