EVs and A Dream Towards Indonesia Net Zero

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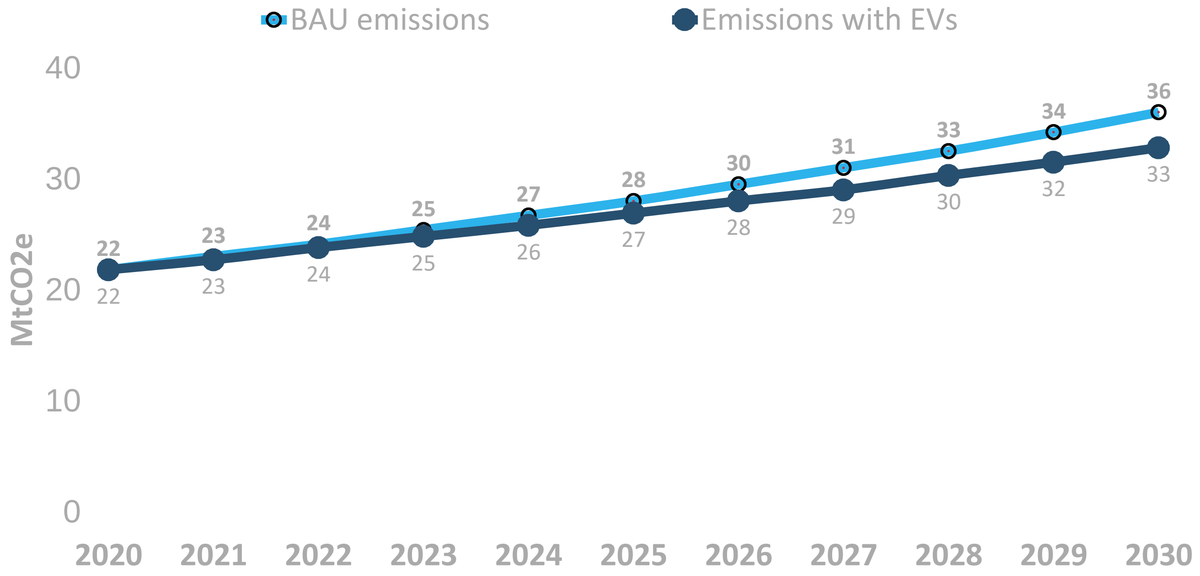
Image source: The Jakarta Post/Wendra Ajistyatama

E-Mobility is solution to rising transport related emissions …

Decarbonizing the transport sector is crucial to help reduce Indonesia's GHG emissions.

- Indonesia had the worst air pollution in SE Asia and the 11th worst in the world. Vehicle emissions are responsible for 32%–57% of Jakarta's air pollution. (Vital Strategies and ITB, 2020)
- Emissions from the energy sector represents more than 40% of total emissions in Indonesia, of which 27% are from the transport sector. (Climate Transparency 2020)
- Jakarta contributes 11% of Indonesia's total GHG emissions in the transport sector.
- Under our Java-Bali grid factor (0.8 kgCO2/kWh), EVs can reduce GHG emissions compared to conventional vehicles by 20-40% while also reducing air pollution and noise.

- The projected transport emissions of Jakarta (WTW incl. BC) under BAU will be double from 18 MtCO2e in 2016 to 36 MtCO2e (WTW) in 2030.*

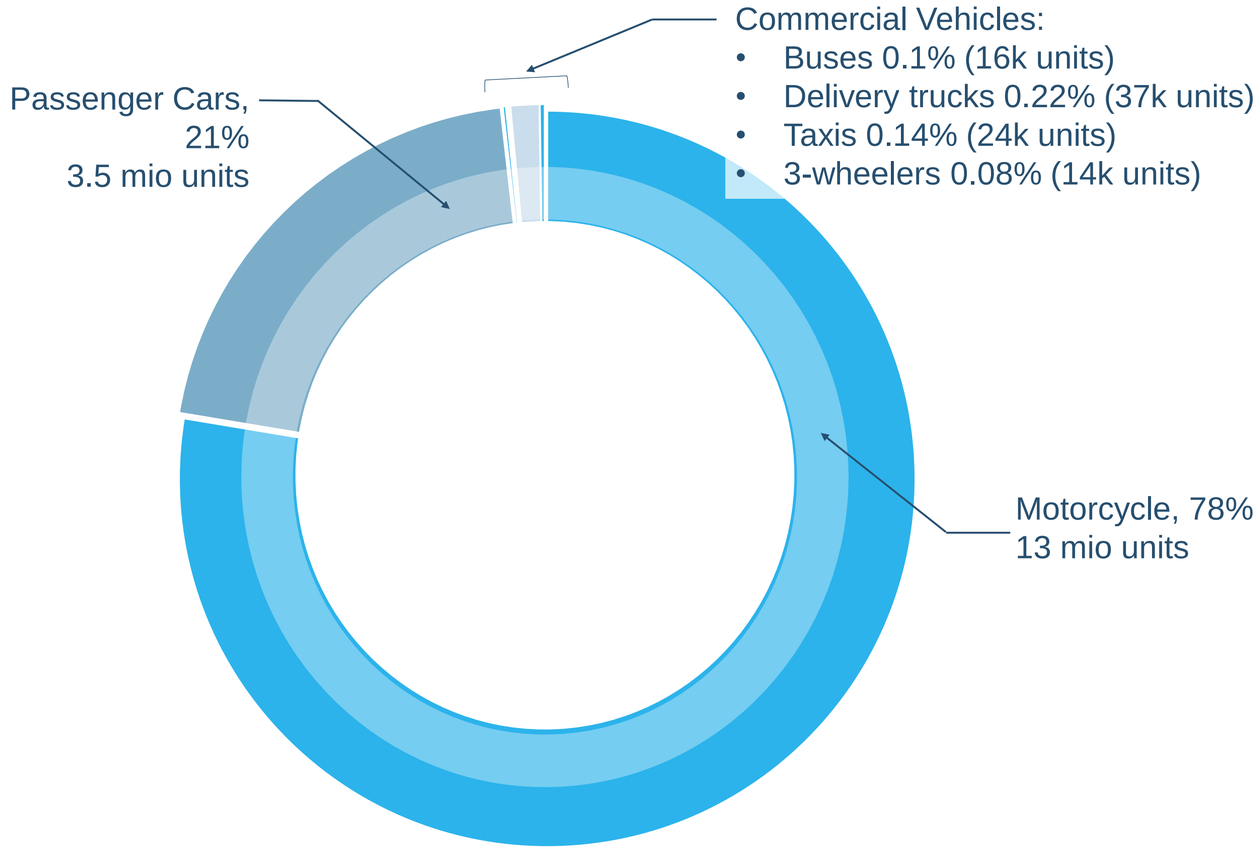


(*) Source: ADB. 2019. *E-mobility for Jakarta.* Consultant's report. Manila (TA 9420-REG)

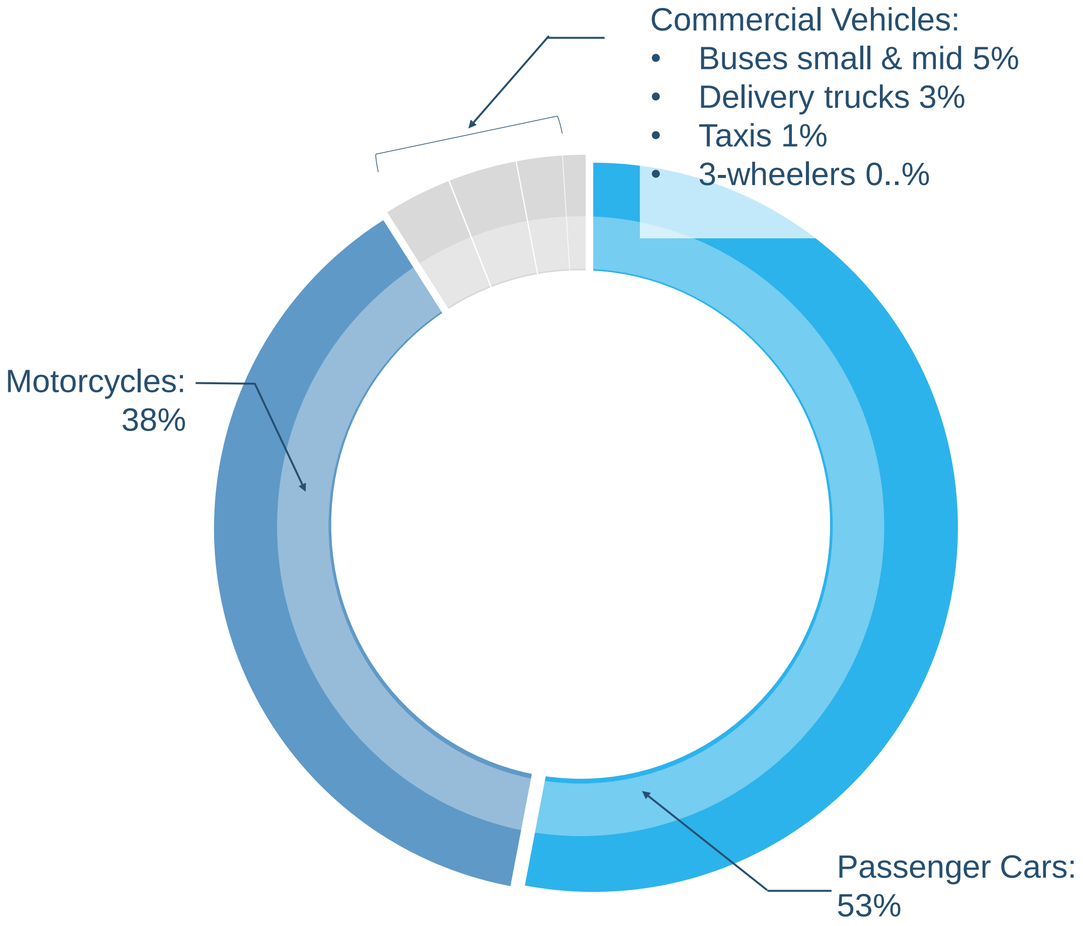
… and electrifying commercial vehicles are the low hanging fruit.

Commercial vehicles represent less than 0.5% of total fleet in Jakarta, but are responsible for 10% emissions.

Vehicle Numbers in Jakarta, 2016



Share of GHG Transport Emissions (WTW incl. BC)



E-buses represent less than 0.1% of total fleet but has huge impact to GHG emissions and pollutants.

Why E-bus?

Indonesia has subsidized fuel price and relatively higher electricity tariff. Therefore, it can be difficult to recover high EV CAPEX with the lower OPEX.

Each e-bus has the same emission impact as 40 e-passenger car, 110 e-motorcycle, and 10 e-taxi.

E-buses are the EV alternative with the lowest incremental costs, has lower TCO than diesel buses and does not require large charging infrastructure.

Buses account for 0.1% of total fleet but are responsible for 20-30% of total pollutants and 5% of GHG transport emissions (WTW incl. BC).

GHG Impact Per Vehicle p.a. (WTW)

E-motorcycle	E-car	E-taxi	E-bus
0.3 tCO2/year	0.8 tCO2/year	3.2 tCO2/year	33 tCO2/year

How to make e-buses more attractive than fossil units despite its higher CAPEX?

Recommended policies and approach

Barrier	Potential Policies / Approach
High purchase cost	Subsidize the incremental cost of e-buses, reduce tax rates, **lower financing cost, blended finance with grant,** support entities which purchase large fleet of e-buses and lease it to bus operators
Insignificant OPEX savings	Lower electricity tariff for electric public transport as compensation for improved air quality, gradually phasing out low-grade fuel
Charging infrastructure investment	Grant or subsidize fast-charging infrastructure for public transport
Local content requirement	Exemption from local content requirement for new technology that are not available domestically
Lack of disincentive to use diesel buses	Demand that a specific share of new buses is electric and public tender of routes should favor e-buses, limit access to the city center for diesel buses