

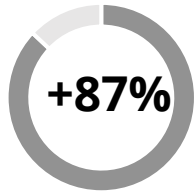
BAQ 2023
BETTER AIR QUALITY
CONFERENCE 15-17 NOV • MANILA



BRIEF OVERVIEW: SUSTAINABLE TRANSPORT POLICIES AND TRENDS IN ASIA



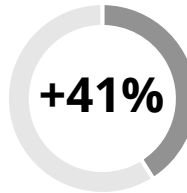
Transport in Asia: Demand and Emission Trends



Asia's car ownership rate increased **87%** from 2005 to 2015

1 billion road vehicles have been added between 2000 to 2020

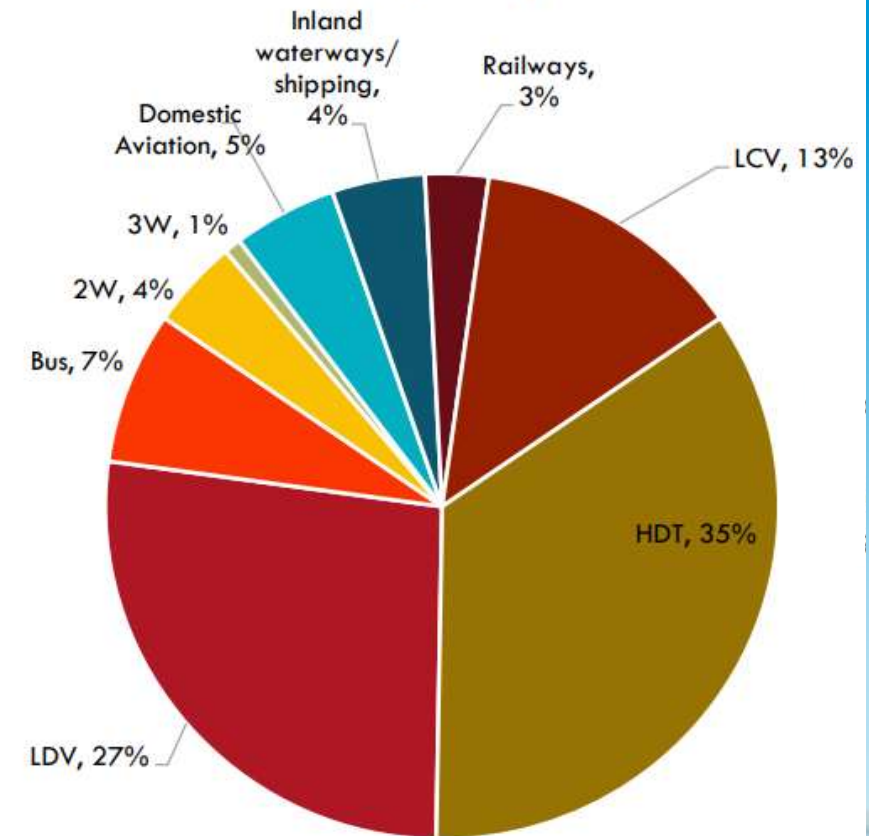
- **41%** increase in transport CO₂ emissions from 2010-2019, highest global regional growth*



Heavy-duty trucks are projected to account for at least **1/3** of the region's transport CO₂ emissions

- HDT, LDV and LCV contribute **75%** of transport CO₂ emissions in Asia

Asia & Pacific, Transport CO₂ Emissions Share (2018)



2W – Two-wheeler, 3w – Three-Wheeler, LCV – Light Commercial vehicle, LDV – Light-duty vehicle
HDV/HDT – Heavy-duty vehicle

Source: Asian Transport Outlook (2023, November 8). 2023 Climate Tracker for Transport in Asia & Pacific - an input to COP28.

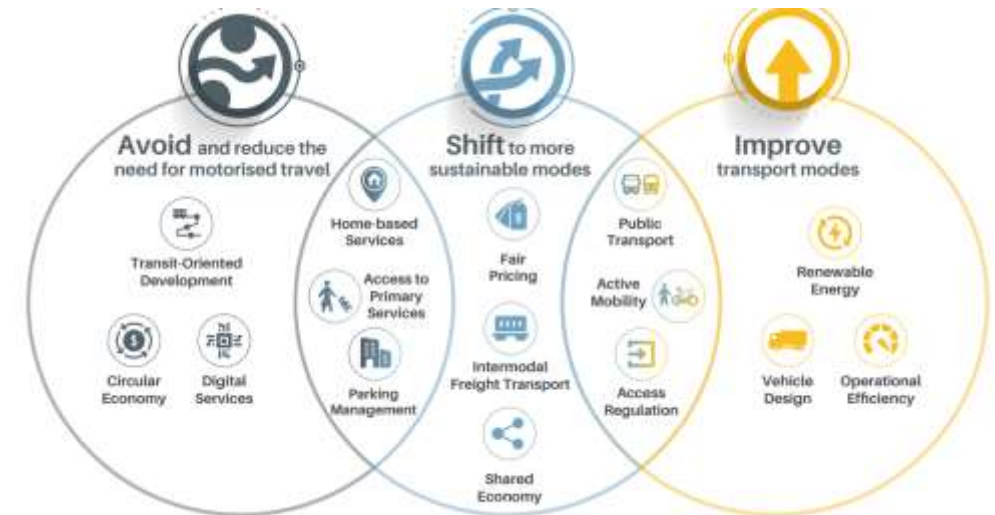
*Source: SLOCAT (2021), Tracking Trends in a Time of Change: The Need for Radical Action Towards Sustainable Transport Decarbonisation, Transport and Climate Change Global Status Report – 2nd edition, <https://tcc-gsr.com/wp-content/uploads/2021/06/1.1-Global-Transport-and-Climate-Change.pdf>



AVOID-SHIFT-IMPROVE framework

The **Avoid-Shift-Improve (ASI) Framework** is a conceptual approach that aims to reduce energy consumption, transport emissions, and road congestion to achieve a more sustainable transport system and eventually, healthier cities.

It follows a hierarchy that prioritizes **avoid** measures, followed by **shift**, then **improve**.



*The A-S-I diagramme presents a non-exhaustive list of measures for illustrative purposes only.

*Source: SLOCAT (2021), *Tracking Trends in a Time of Change: The Need for Radical Action Towards Sustainable Transport Decarbonisation, Transport and Climate Change Global Status Report – 2nd edition*, <https://tcc-gsr.com/wp-content/uploads/2021/06/1.1-Global-Transport-and-Climate-Change.pdf>

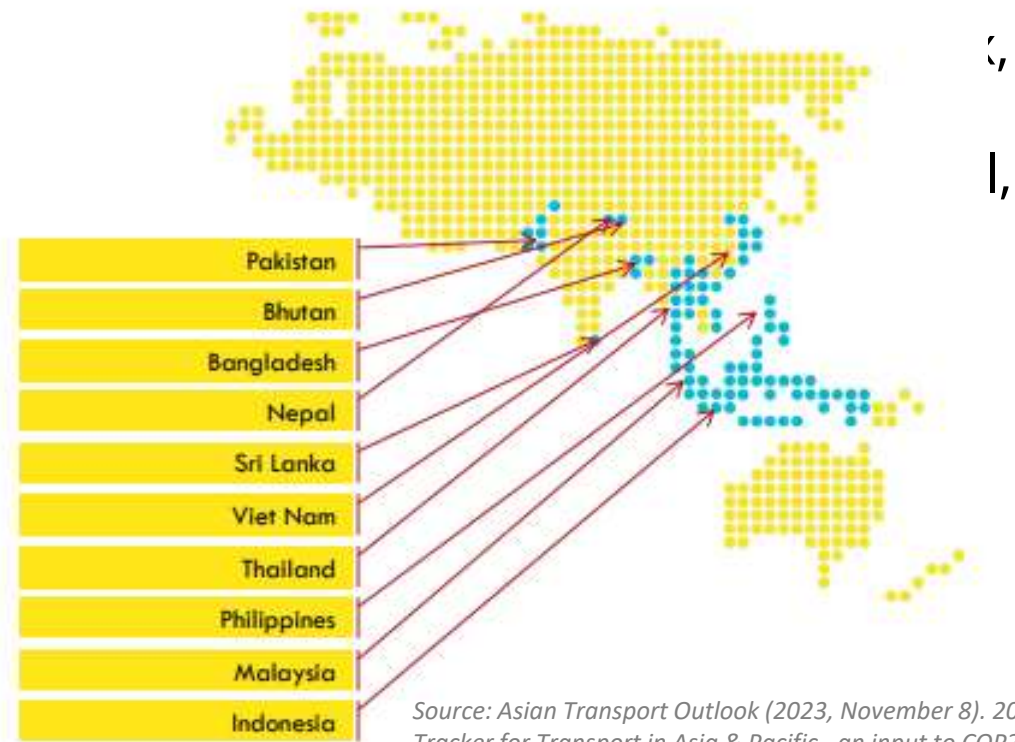
- Slide taken from Alcanzare, M & Bathan, G. (2023, November). *Accelerating Electric Vehicle Adoption in Asia through Policy and Financing [Powerpoint slides]*. Clean Air Asia.
- SLOCAT (2021), *Tracking Trends in a Time of Change: The Need for Radical Action Towards Sustainable Transport Decarbonisation, Transport and Climate Change Global Status Report – 2nd edition*, <https://tcc-gsr.com/wp-content/uploads/2021/06/1.1-Global-Transport-and-Climate-Change.pdf>
- Bongardt, D., Stiller, L., Swart, A., & Wagner, A. (2019). *Sustainable Urban Transport: Avoid-Shift-Improve (A-S-I) Integrated*. *Transformative Urban Mobility Initiative*. https://www.transformative-mobility.org/wp-content/uploads/2023/03/ASI_TUMI_SUTP_iNUA_No-9_April-2019-Mykme0.pdf



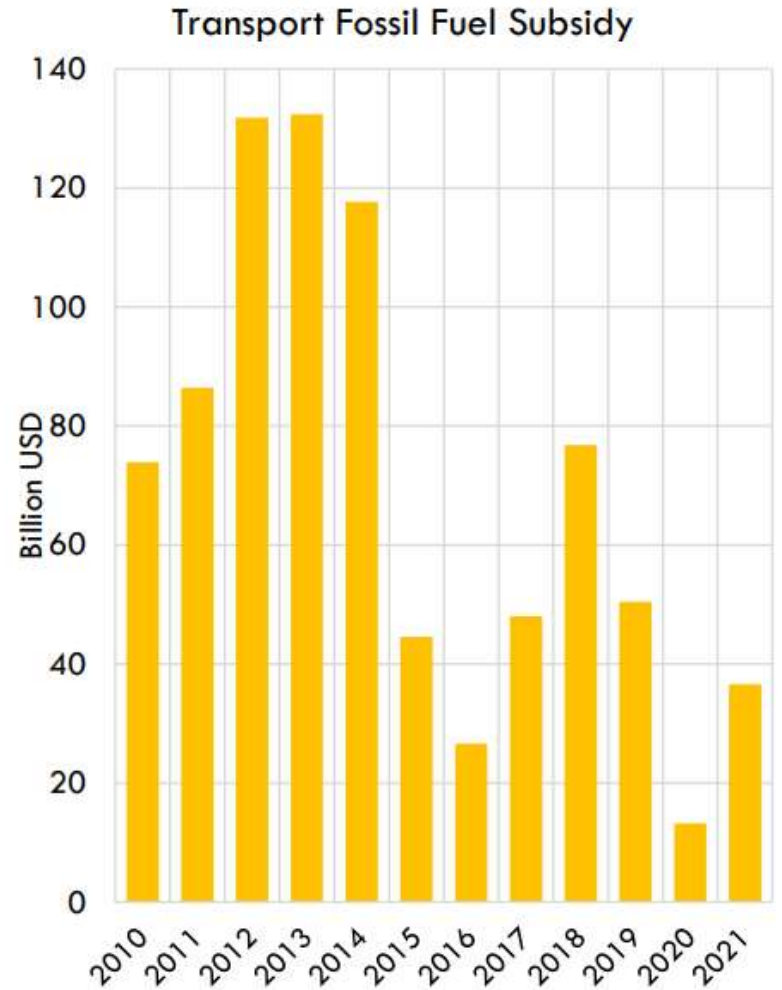
AVOID-oriented measures

- Fossil fuel subsidies significantly reduced in the Asia region

Fossil fuel subsidy elimination, Fuel tax, Vehicle taxes



Source: Asian Transport Outlook (2023, November 8). 2023 Climate Tracker for Transport in Asia & Pacific - an input to COP28.



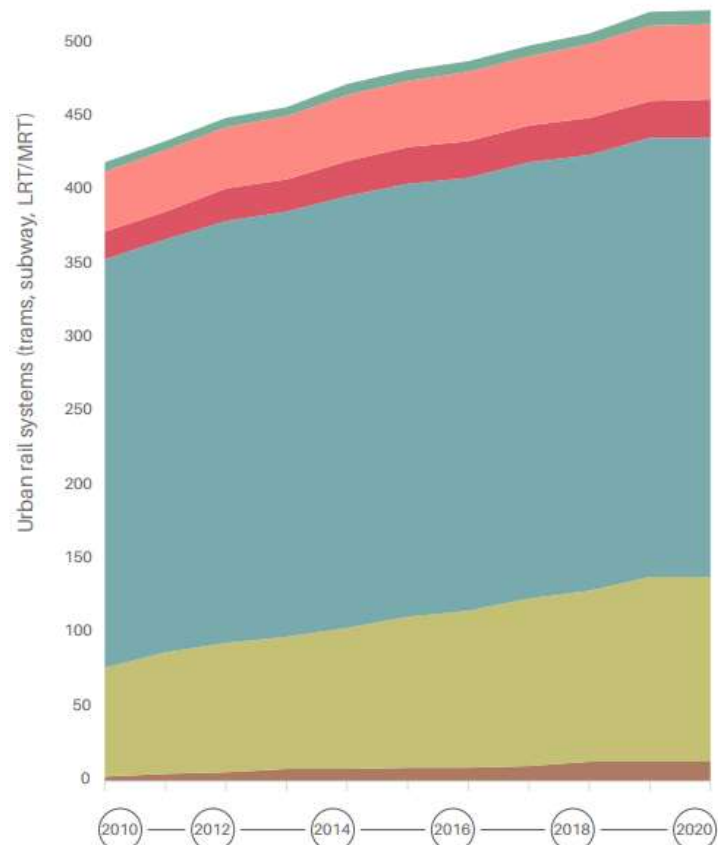
Source: IEA

Source: Asian Transport Outlook (2023, November 8). 2023 Climate Tracker for Transport in Asia & Pacific - an input to COP28.

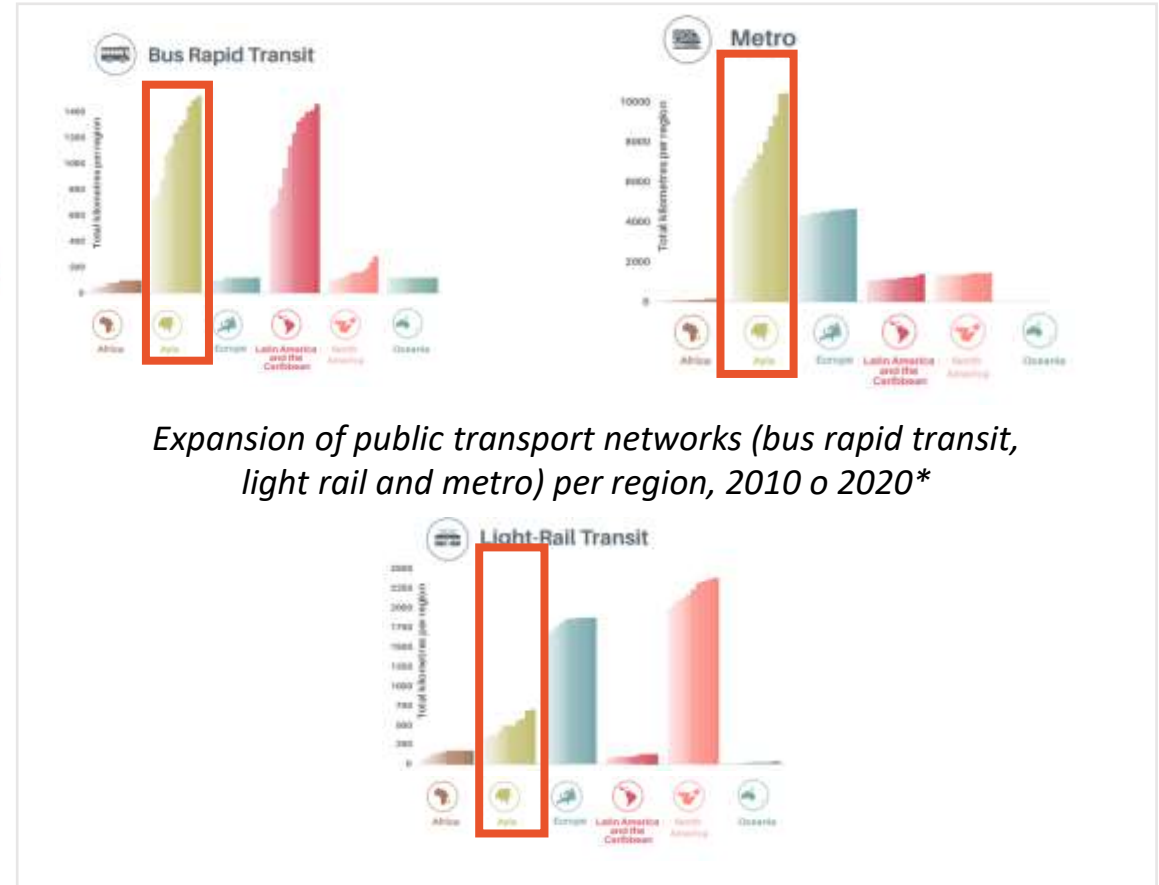


SHIFT-oriented measures

Asia is spearheading the growth and expansion of public transport systems, particularly bus rapid transit, light rail and metro.



New urban rail systems developed, per region, 2010 to 2020*



Expansion of public transport networks (bus rapid transit, light rail and metro) per region, 2010 to 2020*

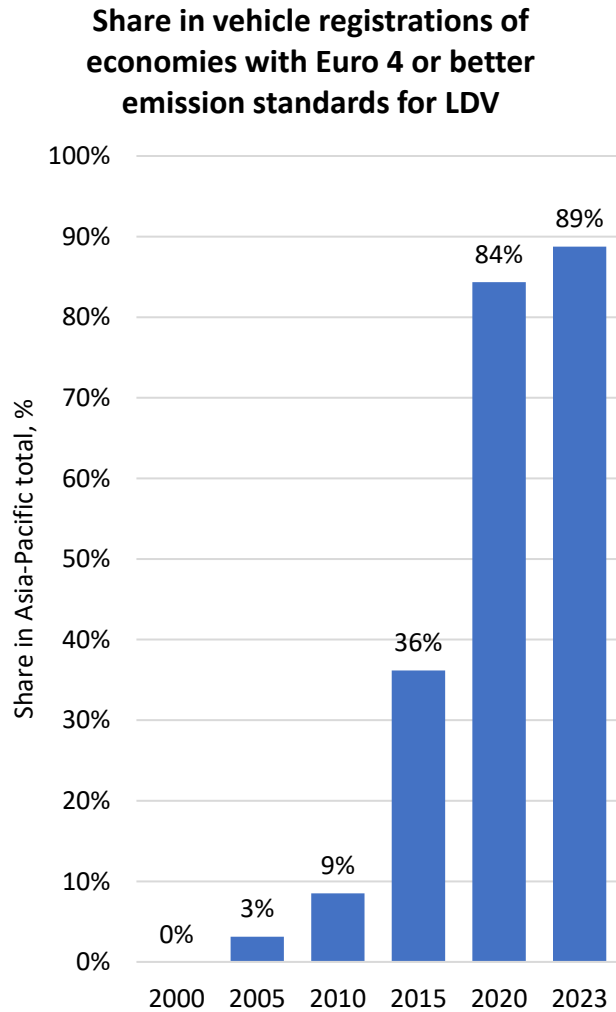
*Source: SLOCAT (2021), Tracking Trends in a Time of Change: The Need for Radical Action Towards Sustainable Transport Decarbonisation, Transport and Climate Change Global Status Report – 2nd edition, <https://tcc-gsr.com/wp-content/uploads/2021/06/1.1-Global-Transport-and-Climate-Change.pdf>



IMPROVE-oriented strategies

Adoption of stringent vehicle emissions standards over the past two decades

From 9% of vehicle fleet compliant to Euro 4 in 2010 to nearly 90% this year



Source: Asian Transport Outlook (2023, November 8). 2023 Climate Tracker for Transport in Asia & Pacific - an input to COP28.

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | |
|-------------------------|--------------------|----------|---------|----------|----------|--------|--------|--------|--------|--------|--------|------|------|------|------|--------|
| Bangladesh (metros) | Euro 3 | | Euro 4 | | | | | | | | | | | | | |
| Bangladesh (nationwide) | Euro 2 | | Euro 3 | | | | | | | | | | | | | |
| Brunei Darussalam | Euro 4 | | | | | | | | | | | | | | | |
| Cambodia | Euro 1 | | | Euro 3 | | Euro 4 | | | | | Euro 5 | | | | | |
| PR China (metros) | China 5 | | | China 6 | | | | | | | | | | | | |
| PR China (nationwide) | China 5 | | China 5 | | China 6 | | | | | | | | | | | |
| India (metros) | Bharat 4 | | | | Bharat 6 | | | | | | | | | | | |
| India (nationwide) | Bharat 3 | Bharat 4 | | Bharat 6 | | | | | | | | | | | | |
| Indonesia | Euro 2 | | Euro 4 | | | | Euro 4 | | | | | | | | | |
| Iran | Euro 4 | | | | | | | | | | | | | | | |
| Lao PDR | Euro 4 | | | | | | | | | | | | | | | |
| Malaysia (gasoline) | Euro 2 | | | Euro 4 | | Euro 4 | | | | | Euro 5 | | | | | |
| Malaysia (diesel) | Euro 2 | | Euro 4 | | | | | | | | | | | | | Euro 5 |
| Myanmar (diesel) | AFAFGIT Protocol 4 | | | | | | | Euro 4 | | | | | | | | |
| Myanmar (gasoline) | | | | | | Euro 4 | | | | | | | | | | |
| Nepal | Euro 3 | Euro 4 | | | | | | | | | | | | | | |
| Philippines (gasoline) | Euro 4 | | | | | | | | | | | | | | | |
| Philippines (diesel) | Euro 2 | | Euro 4 | | | | | | | | | | | | | |
| Singapore (gasoline) | Euro 4 | | Euro 6 | | | | | | | | | | | | | |
| Singapore (diesel) | Euro 5 | | Euro 6 | | | | | | | | | | | | | |
| Sri Lanka | Euro 2 | | Euro 4 | | | | | | | | | | | | | |
| South Korea | Standards 1-4 | | | | | | | | | | | | | | | |
| Thailand | Euro 4 | | | | | | | | Euro 5 | | | | | | | |
| Viet Nam | Euro 2 | Euro 4 | | | | Euro 5 | | | | Euro 6 | | | | | | |

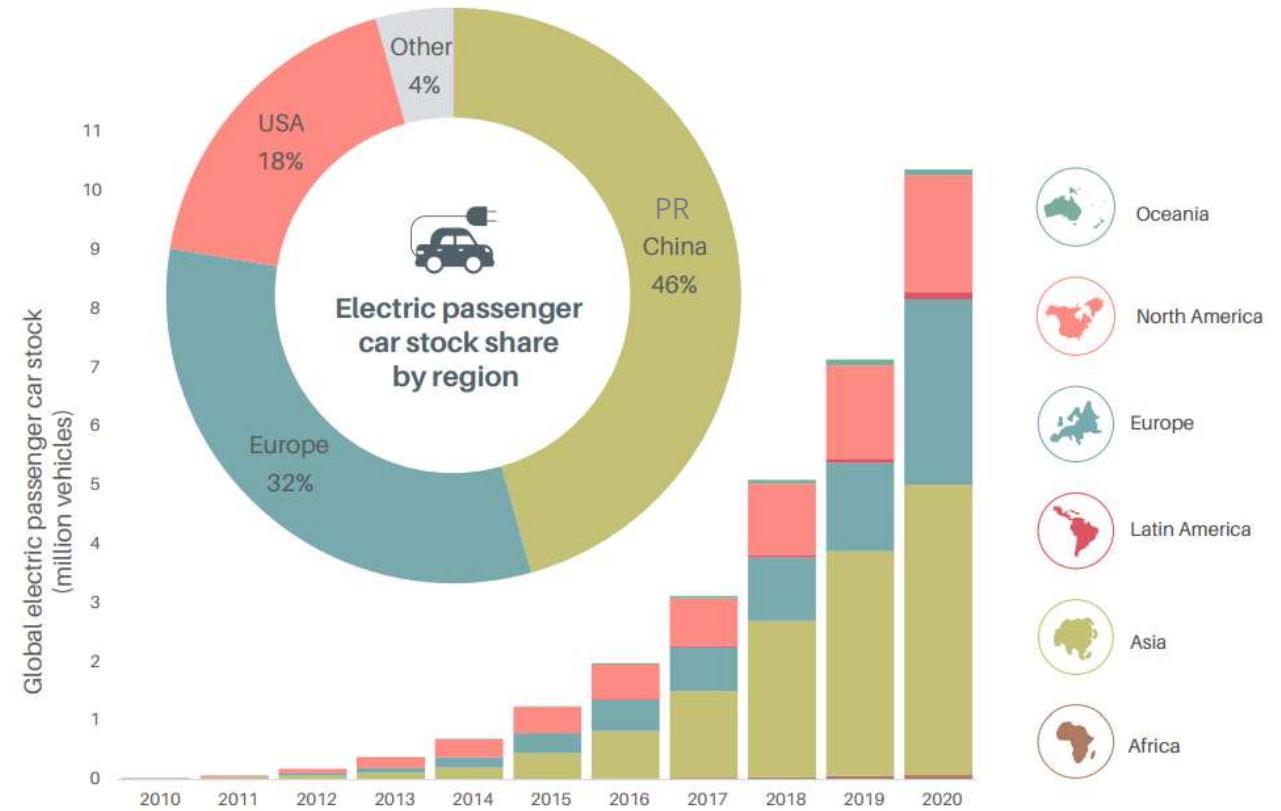
Source: Asian Transport Outlook (Country Statistics, EDGAR), Clean Air Asia, UNEP



IMPROVE-oriented strategies

Electrification

- Approximately **77%** of the global electric vehicle stock is in Asia.
- Approximately **94%** of all EVs sold in Asia are electric 2- and 3-wheelers.
- In terms of sales, **49%** of global two-wheeler sales in 2022 were electrically powered



Electric passenger car stock (battery and plug-in electric hybrids), by region, 2010-2020

Sources:

* Asian Transport Outlook (2023, November 8). 2023 Climate Tracker for Transport in Asia & Pacific - an input to COP28.

* IEA EV Outlook, DNV Energy Outlook 2023, BloombergNEF EV Outlook

*Source: SLOCAT (2021), Tracking Trends in a Time of Change: The Need for Radical Action Towards Sustainable Transport Decarbonisation, Transport and Climate Change Global Status Report – 2nd edition, <https://tcc-gsr.com/wp-content/uploads/2021/06/1.1-Global-Transport-and-Climate-Change.pdf>



IMPROVE-oriented strategies

Southeast Asia: EV roadmaps (policy and financing)



30/30 Policy
(30% vehicle
production will be EVs
by 2030)

Low Carbon Mobility Blueprint
Strategic Framework for the
Development and Planning of Electric
Vehicle (EV) Infrastructure

Enhancing Readiness for the
Transition to Electric Vehicles in
Indonesia
(under development)

Comprehensive Roadmap for the Electric Vehicle
Industry
EV Incentive Strategy (under development)

- Slide taken from Alcanzare, M & Bathan, G. (2023, November). Accelerating Electric Vehicle Adoption in Asia through Policy and Financing [Powerpoint slides]. Clean Air Asia.
- Malaysia Ministry of Environment and Water (2021), Low Carbon Mobility Blueprint
- Philippine Department of Energy (2023), Comprehensive Roadmap for the Electric Vehicle Industry
- Map from https://upload.wikimedia.org/wikipedia/commons/e/ec/World_map_blank_without_borders.svg



Thank you!

