Public-private Dialog on Electric Mobility
Latin America and Asia: Selected Cases
Santiago, 30 March 2022

Transition Towards Electric Mobility in Asia

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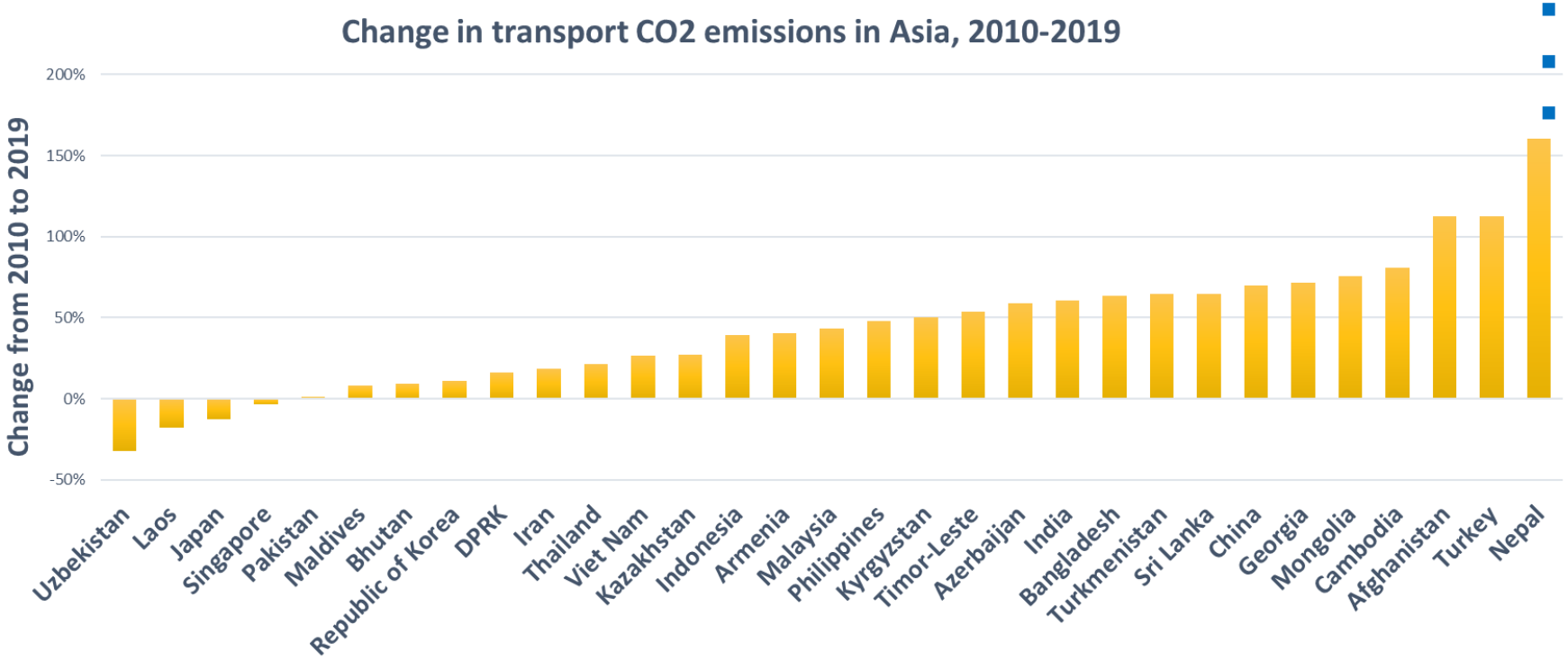
CO2 Emissions in Asia

41% growth of Transport Emissions in Asia, 2010-2019



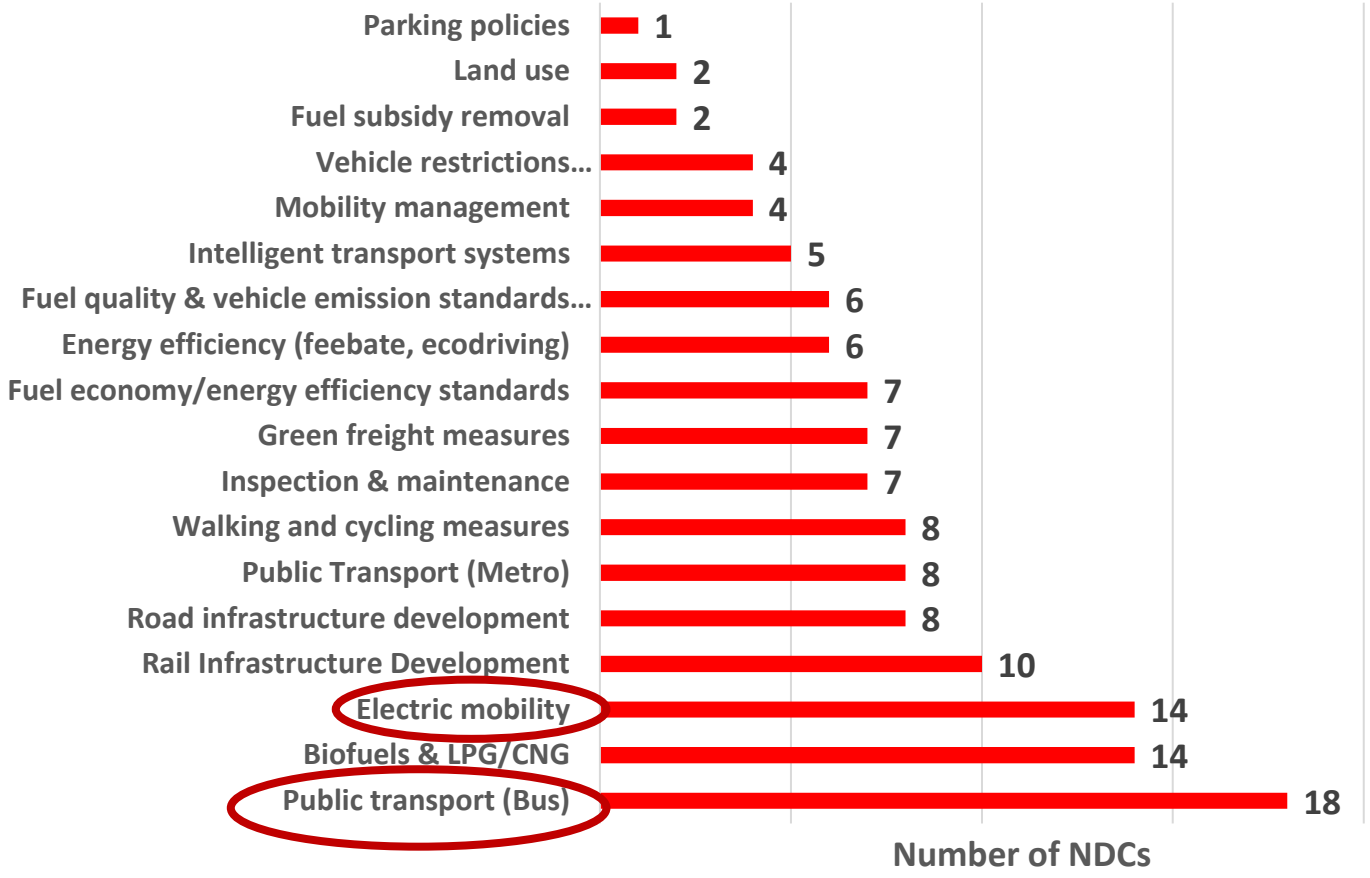
Source: SLOCAT, Transport and Climate Change, 2021

- Transport activities >double by 2050
- 25% emissions from Transport
- Road transport - 75% share
- Passenger -41%, Freight- 59%

Decarbonization of Transport

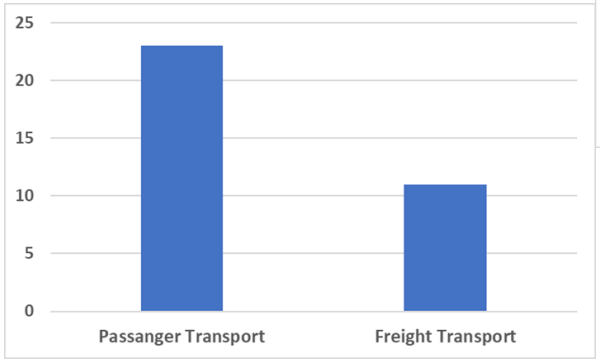
- Paris Agreement: to keep rise global average temperatures to below 2°C and closer to 1.5°C above pre-industrial levels
  - Mitigation and Adaptation Action
  - Nationally Determined Contributions (NDCs)- ambitious
- SDG 7- Double energy efficiency by 2030
- COP26, Glasgow:
  - Rapid, deep and sustained reductions in global GHG emissions
  - Phasedown of unabated coal power
  - Phase-out of inefficient fossil fuel subsidies
  - Speeding up the switch to electric vehicles

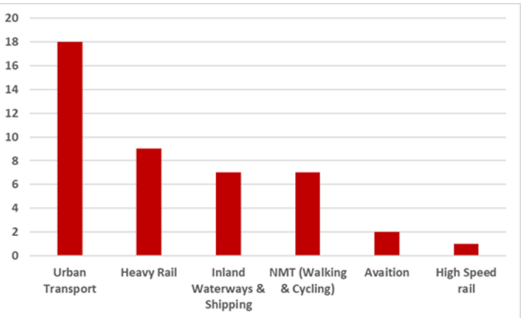
Transport Strategies in NDCs of Asian Countries



Source: UNFCC

- Contains transport action – but not specific
- Limited countries have transport emissions reduction targets





ASI Framework- Mitigation Opportunities in Transport

AVOID

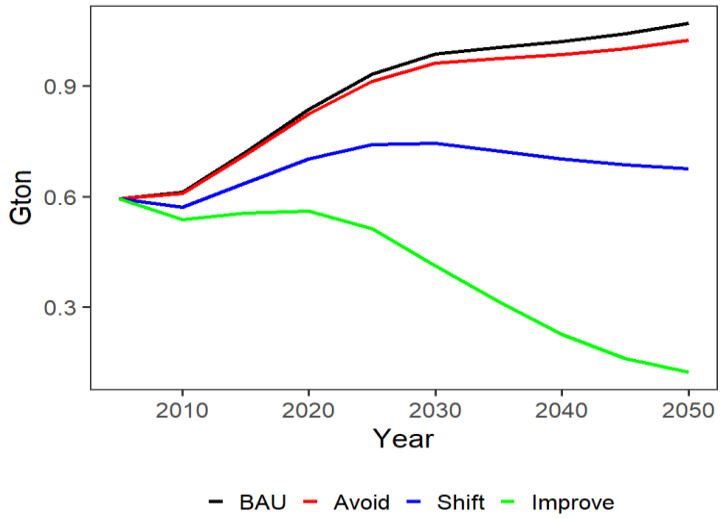
- Reducing travel demand
- Compact city planning
- Post-COVID-19: Teleworking, use of ICT, 15-minute city
- Discourage private mode

SHIFT

- Public Transport- BRT, Metro, Bus
- Non-Motorized modes
- Energy efficient modes
- Car sharing

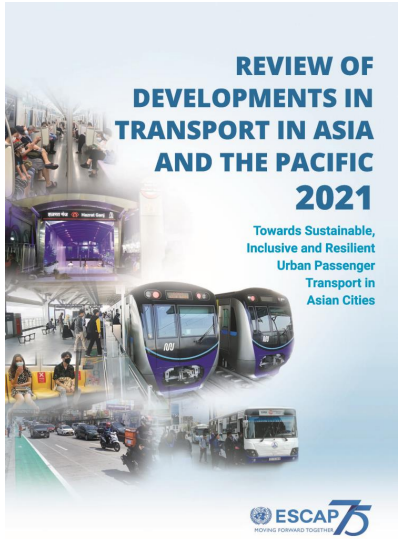
IMPROVE

- Improve energy efficiency
- Electric mobility
- Alternate fuels



Model analysis of 5 scenarios

- Energy efficiency
- Electric mobility



Importance of Data, Analysis and Modelling

- Mode choice model
- Emission scenarios

Initiative on EV Transition in Public Transport in Asia

- **National EV Polices, Strategies and Roadmaps**
  - Pilot countries – Georgia, Laos, Nepal, Fiji and Thailand
  - Review of current polices and opportunities
  - National stakeholders' consultation workshops- 2022

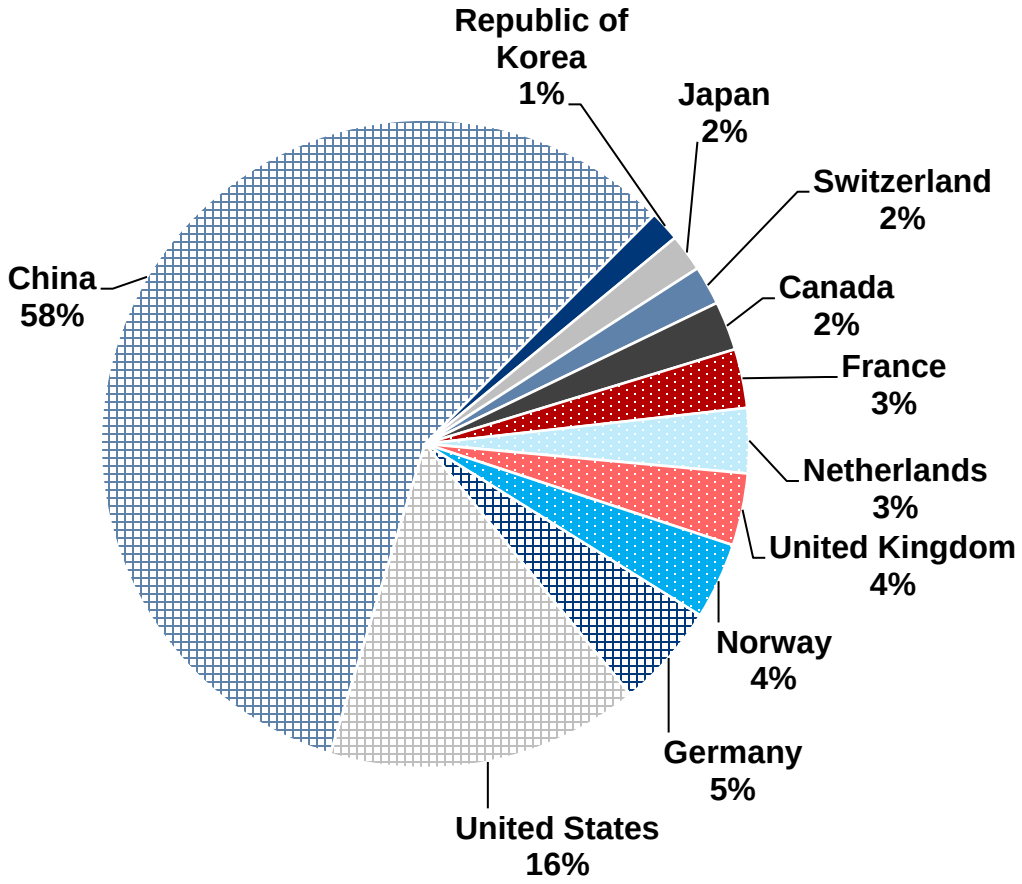
- **Regional EV Initiative**
  - Regional policy guidelines and case studies
  - Regional and Subregional Meetings on EV in 2022-23
  - "**Asia-Pacific Initiative on Electric Mobility**"

- **Collaboration and Partnerships**
  - UNEP, GGGI, CDIA, GIZ- SMMR, ASEAN
  - King Mongkut University of Technology, Thailand
  - Research Institute of Highway, China

New Energy Vehicle Sale in 2019

China- 100% electric public transport

- Guangzhou
- Shenzhen
- Xi'an



Source: IEA

China New Energy Vehicle Development Stages

Time	Stage	Action
1991~2005	R & D layout	● New energy vehicle and EV ● Fuel cell ● Hydrogen energy and fuel cell technology
2006~2010	Industrialization preparation	● 2008,The first electric vehicle in China was approved for listing and began mass production. ● In about 3 years, 10 cities will be developed every year, and 1000 new energy vehicles will be launched in each city ● Start the pilot work of subsidies for private purchase of new energy vehicles in five cities (Shanghai, Changchun, Shenzhen, Hangzhou and Hefei)
2011~2015	Demonstration and promotion	● Determined the industrialization goal of new energy vehicles. ● 2012,The preferential policy of vehicle and vessel tax for new energy vehicles. ● 2015, China's production and sales of new energy vehicles ranked first in the world.
2016~now	Industrialization development	● 2017,subsidies for new energy vehicles have continued to decline. ● 2017,Establish new energy vehicles as the strategic breakthrough. ● 2020, It has established the mode of high-quality development of China's new energy vehicle industry in the future.

Source: RIOH, 2022

China EV Development planning

Top-level design	• 2020.10, ***New Energy Vehicle Industry Development Plan (2021-2035).*** • national strategy, new energy vehicles. • Develop, electrification, networking and intelligence.
Standards and regulations	• National standard 49, industry standard 16. • Automobile safety, automobile energy saving, electric vehicle, intelligent Internet connection, key components
Fiscal and tax policies	• Financial subsidies, optimize the purchase restriction policy of automobiles, support the consumption of new energy automobiles, encourage automobiles to go to the countryside, and improve the policy of automobile consumption environment.
Promotion	• Promote the application of new energy vehicles in rural areas • 2020, Carry out the preparation of the action plan to promote the electrification of vehicles in the public domain
Market access	• Optimize market access • Strengthen access supervision • Continuously improve government service capacity

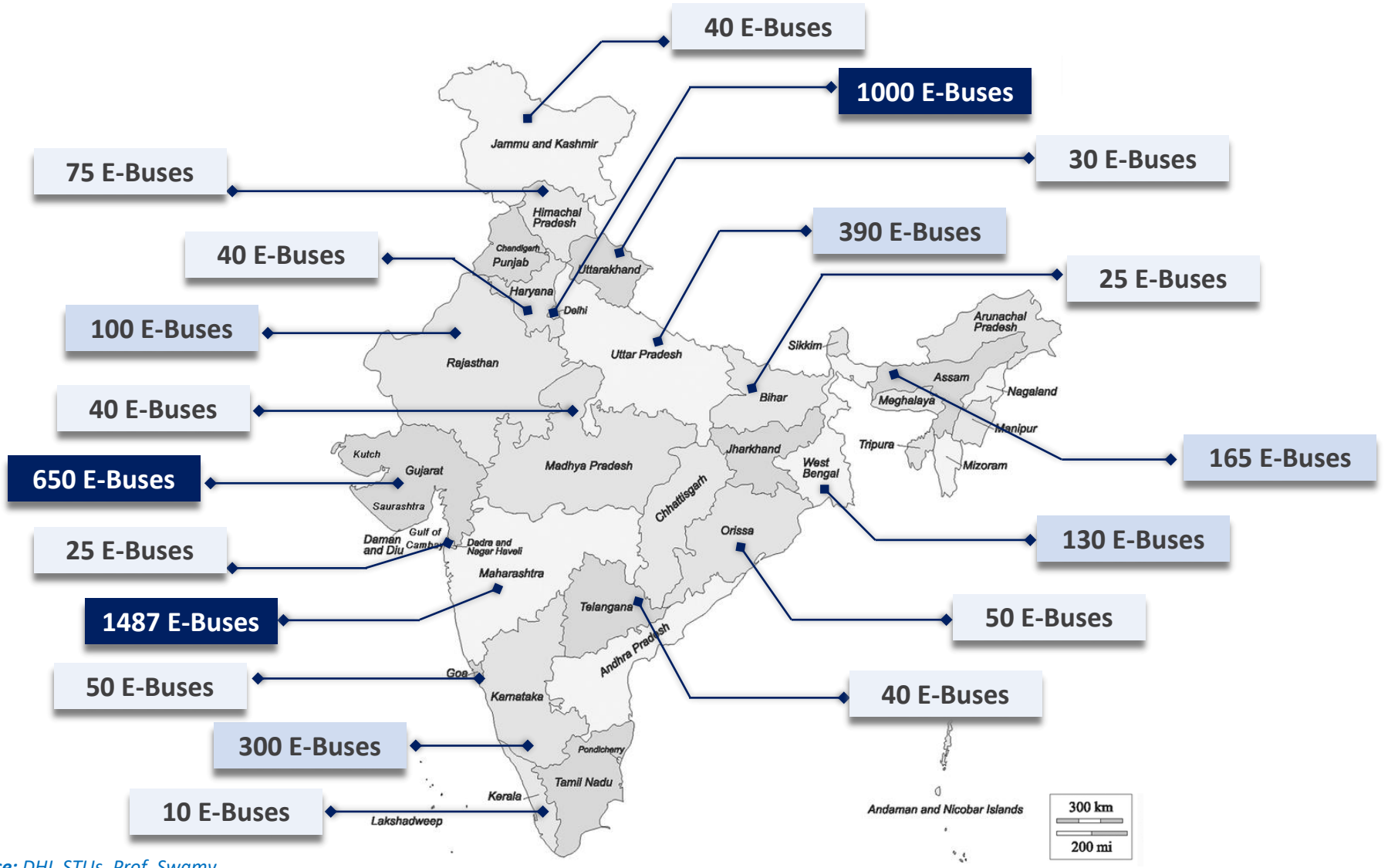
Experience from India: FAME

Faster Adoption and Manufacturing of Hybrid & Electric Vehicles (FAME) in India is **the Initiative of the Government of India to Reduce the use of Diesel and Petrol Powered Vehicles in the country**. The project is an integral part of the Government's National Electric Mobility Mission Plan.

FAME I : 2015- 2019	
FUNDS	***Budget :****Rs. 895 Cr to support 640 E Buses* ***Utilized :*** *Rs. 529 Cr*
SUBSIDY	*Based on* ***Level of Localization*** *Min 15% : 60% of Bus Cost (Max :Rs 85 lakh)* *Min 60% : 60% of Bus Cost (Max :Rs 1 Cr.)*
Types of Vehicles Supported	*2W, 3W and 4W; Both Hybrid and Electric variants of all vehicles.*
No. of E-Buses Supported	***419 Buses***
Business Model	*Outright Purchase, GCC, NCC*

FAME II : 2019-2024	
FUNDS	***Budget :*** *Rs. 3545 Cr / 6265 E Buses* ***Utilized :*** *Rs. 1500 Cr/3120 E Buses*
SUBSIDY	*Based on Bus* ***Length and Battery Capacity*** *9 /12 M Bus : Rs 45/55 lakh per Bus*
Types of Vehicles Supported	*BEV for Buses, 2W and 3W;* *BEV and HEV for 4W*
No. of E-Buses Supported	***Approx. 4,000 buses till date***
Business Model	*GCC, Utility led variant of GCC*

E-Bus Deployment in India



1.5 Lakh Buses

Total Number of Buses on Road in India

4647

Total Number of **E-Buses** in India

2/3rd

are Midi 9m Buses

1/3rd

are Standard 12m Buses

< 100

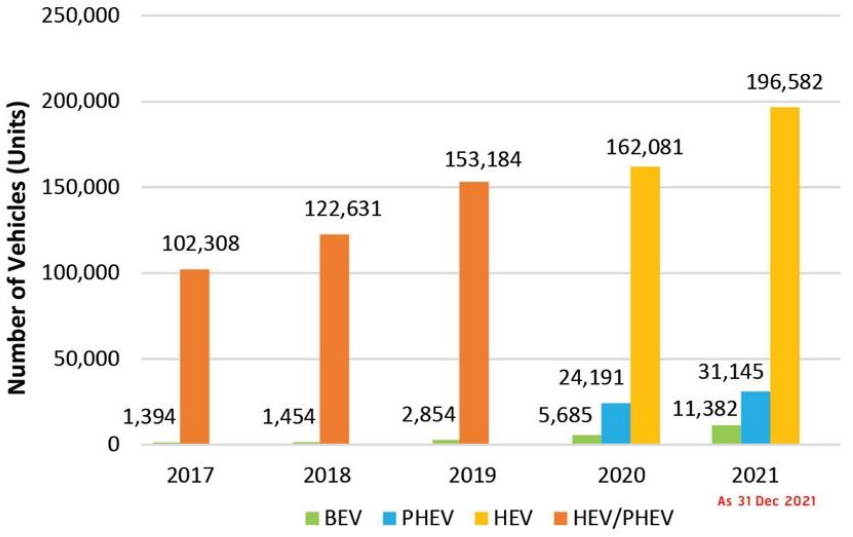
100-500

500+

Source: *DHI, STUs. Prof. Swamy*

Experience from Thailand

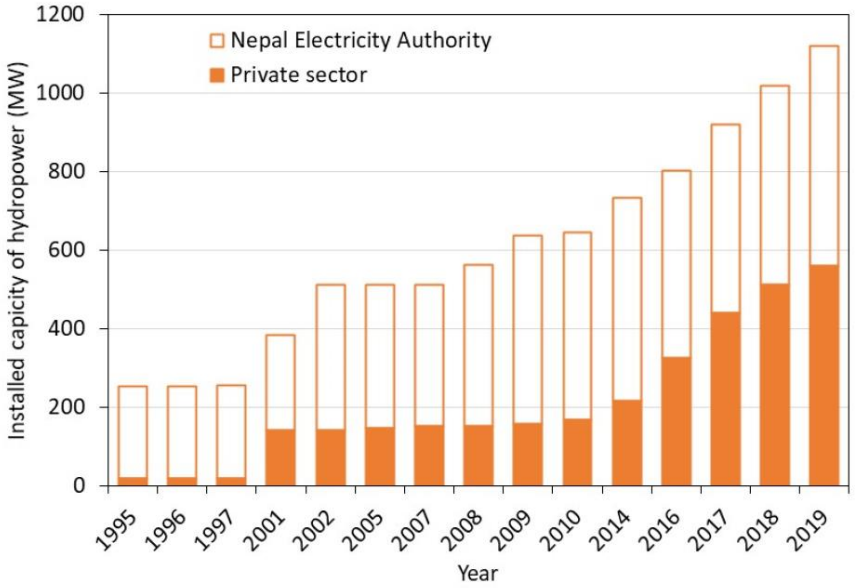
- Vision : Thailand will become the global production and supplier hub for electric vehicles and automotive parts.
- Goal: Thailand towards 100% Zero Emission Vehicle (ZEV) Sale by 2035
- Electric Passenger & Pickup Car:30@30 Target in 2030
- National Electric Vehicle Policy Committee, Chaired by Deputy Prime Minister, 3 key drivers
  - Air Pollution Reduction
  - Greenhouse Gases Reduction
  - New Industry Creation
- Progress in technical areas- charging infra services
- Thai Smile Bus operating 27 EV buses in Bangkok from Sept. 2021, Target : 500 buses in 10 routes in Bangkok
- MÜVMI is the first ride hailing of “electric tuk tuk” in Bangkok



Source: Yossapong Laoonual, 2022

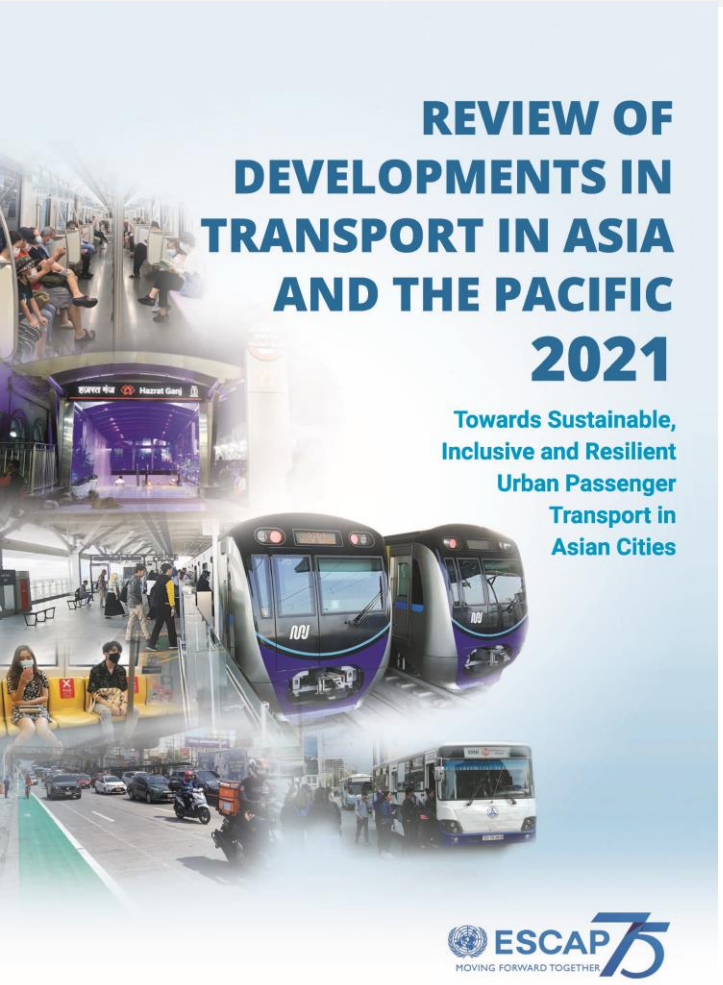
Experience from Nepal

- Nepal aims to reduce 29% GHG by emissions from transport by 2030
- Hydroelectricity- capacity 46 GW
- Installed 2 GW and will reach 11 GW 2030
- NEA- Developing 500 charging infrastructure
- 80 charging stations developed by private sector
- Private operation of electric bus, minibuses, electric tempos
- Procurement of 200 Electric buses in Kathmandu
- Financial incentives to EV
- Gradual expand EV to other cities and intercity transport
- ESCAP supporting Nepal for developing policy and roadmap for EV transition



Concluding Remarks

- Comprehensive policy, strategy & roadmap for transition to electric mobility
- Incentives schemes and subsidies to support upfront investment
- Diffusion of technology- Charging Infrastructure, unified standards
- Coordination among ministries (Public Works and Transport, Environment, Economy and Finance & Energy) and private stakeholders
- Short term, medium-term and long-term strategies on EV and implementation
- Advocacy, capacity building, sharing of experiences
- Partnerships: Global & Regional Initiatives and Alliances
- Collaboration among research, public operators and private manufacturers



Thank You

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