

## WP5: Inter-regional Workshop on Electrification of Mobility

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# Accelerating the Transition to Electric Mobility for Public Transport in Asia

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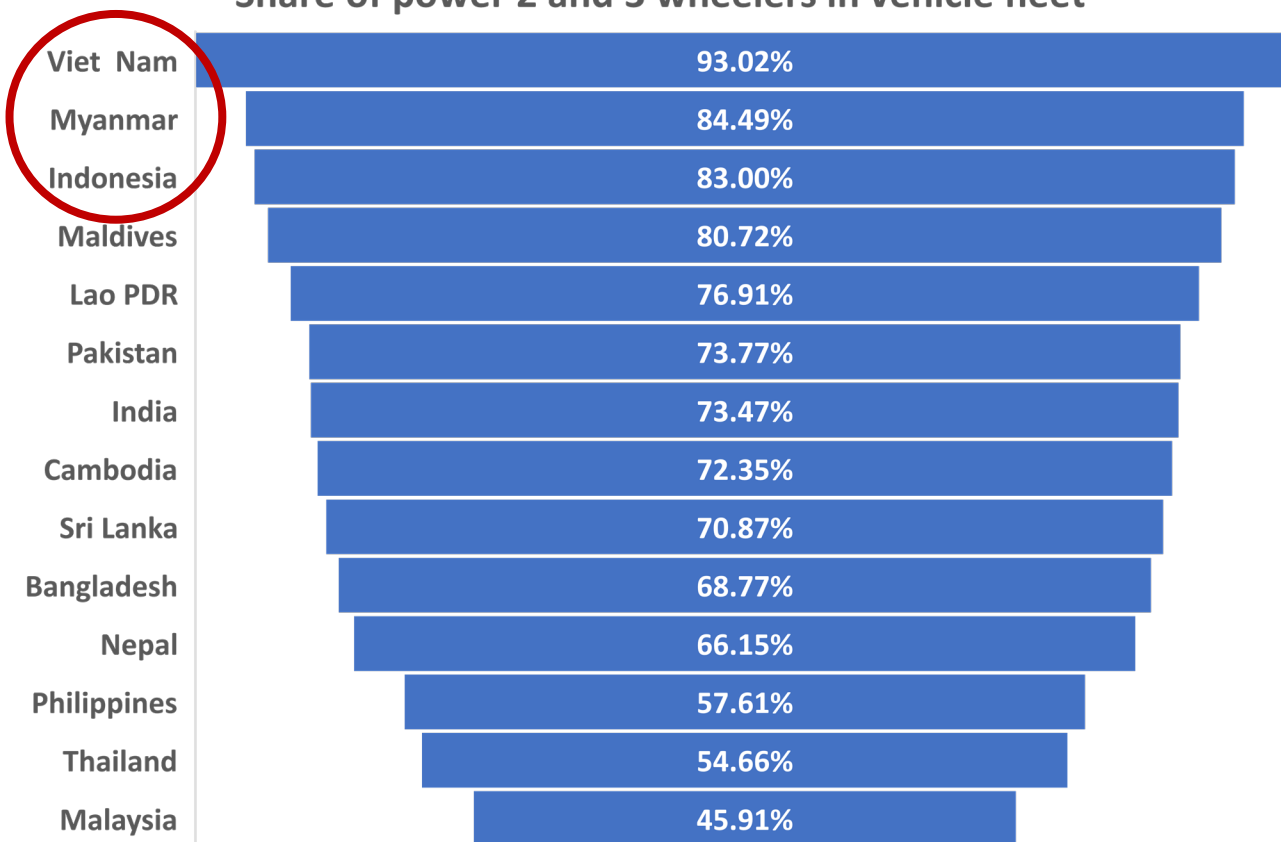
# State of Urban Public Transport in Asia

- Different forms and modes public transport systems
  - Metro, subway, urban rails, Bus Rapid Transit, Bus
- Low share of public transport
- Growth of private vehicles- two wheelers
- High share of para transit and active mobility
- Good public transport: Seoul, Singapore, Hong Kong, China, Tokyo
- China- Transition to electric mobility
- China and India: Metro and BRT
- Integration- mode, service, fare



# Powered 2 and 3 Wheelers

Share of power 2 and 3 wheelers in vehicle fleet



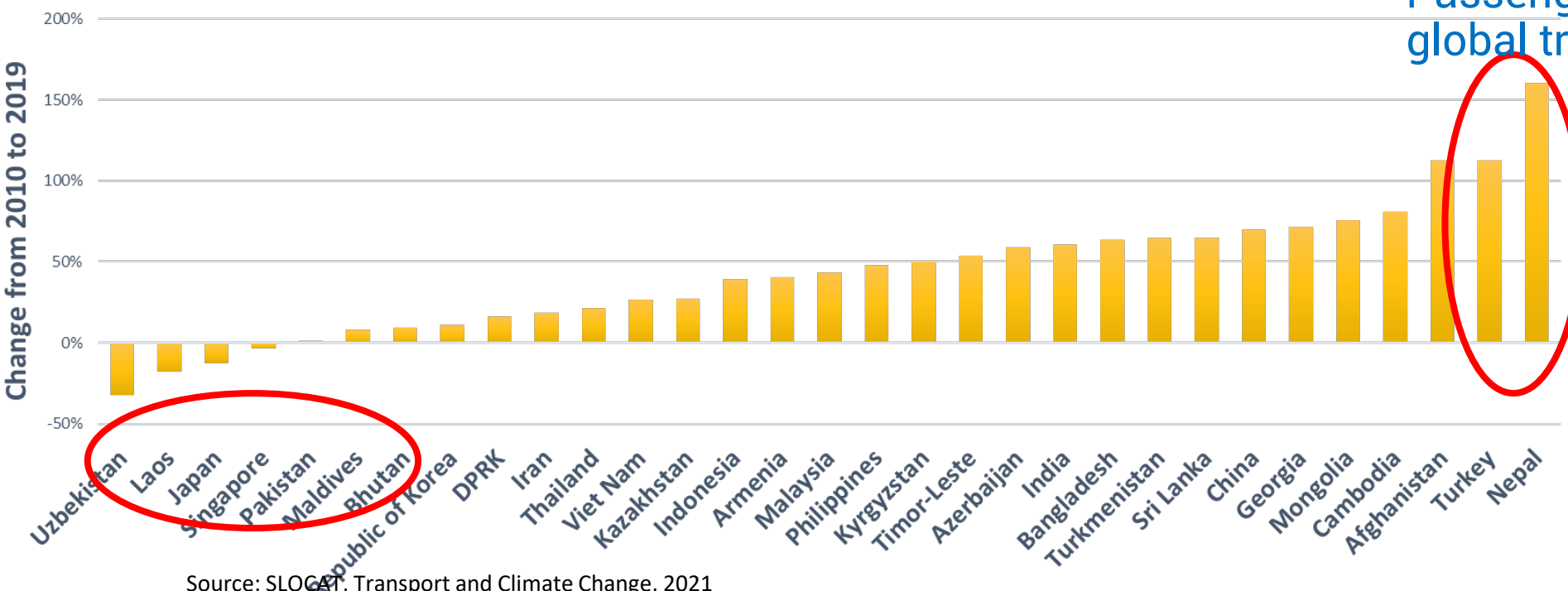
Source: WHO, 2018

# Transport CO2 Emissions in Asia

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

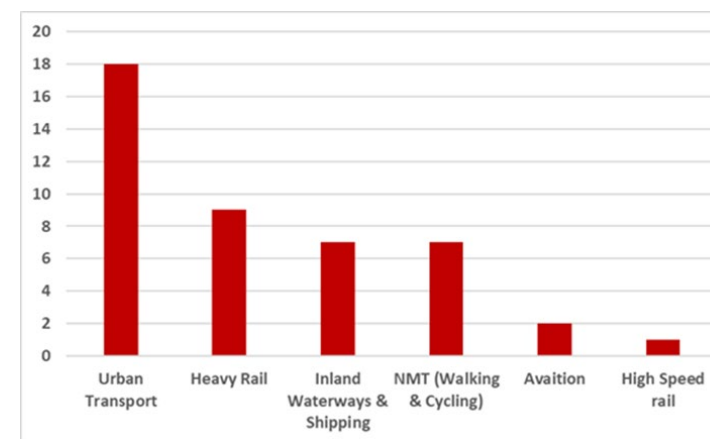
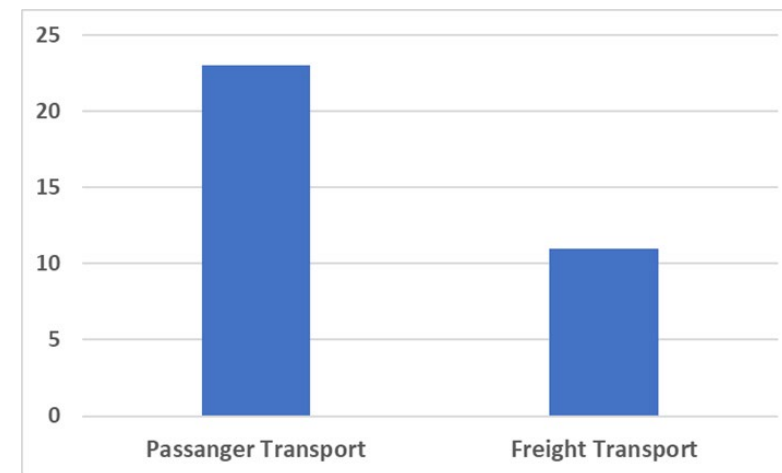
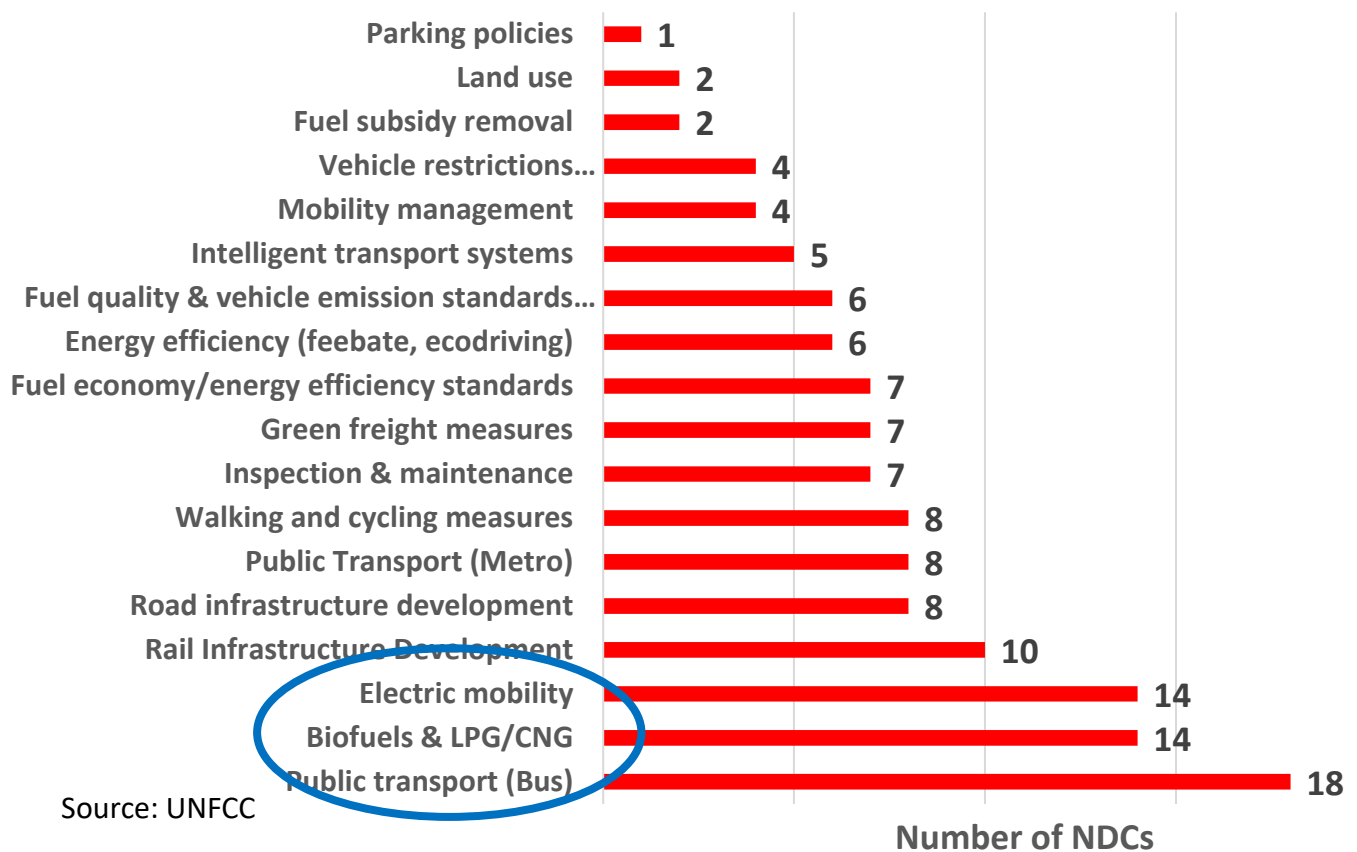
- Passenger & Freight Volume > double by 2050 compared 2015
- Major GHG emitters in Asia
- Transport sector - 25% emissions
- Road transport > 75% emissions
- Passenger-59% and freight- 41% of global transport CO2 emissions

Change in transport CO2 emissions in Asia, 2010-2019



Source: SLOCAI, Transport and Climate Change, 2021

# Transport Strategies in NDCs

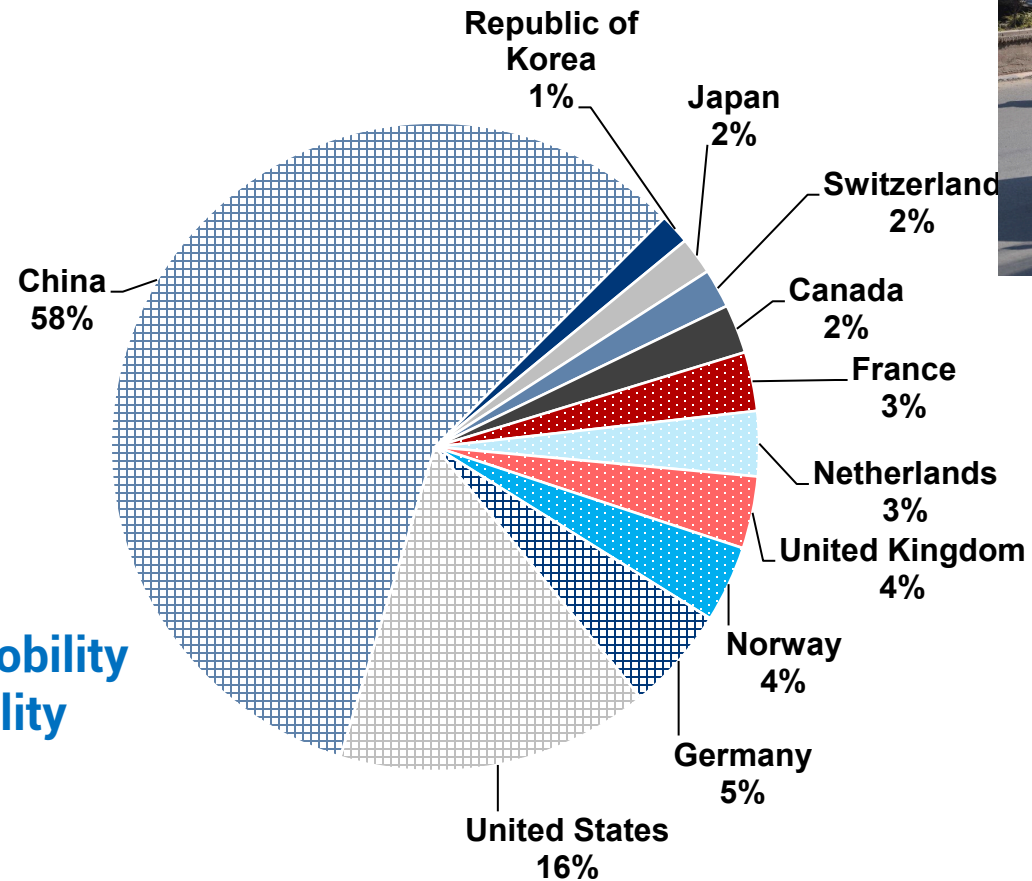




# Electric vehicle Vehicle Sale in 2019

## China- 100% electric public transport

- Guangzhou
- Shenzhen
- Xi'an

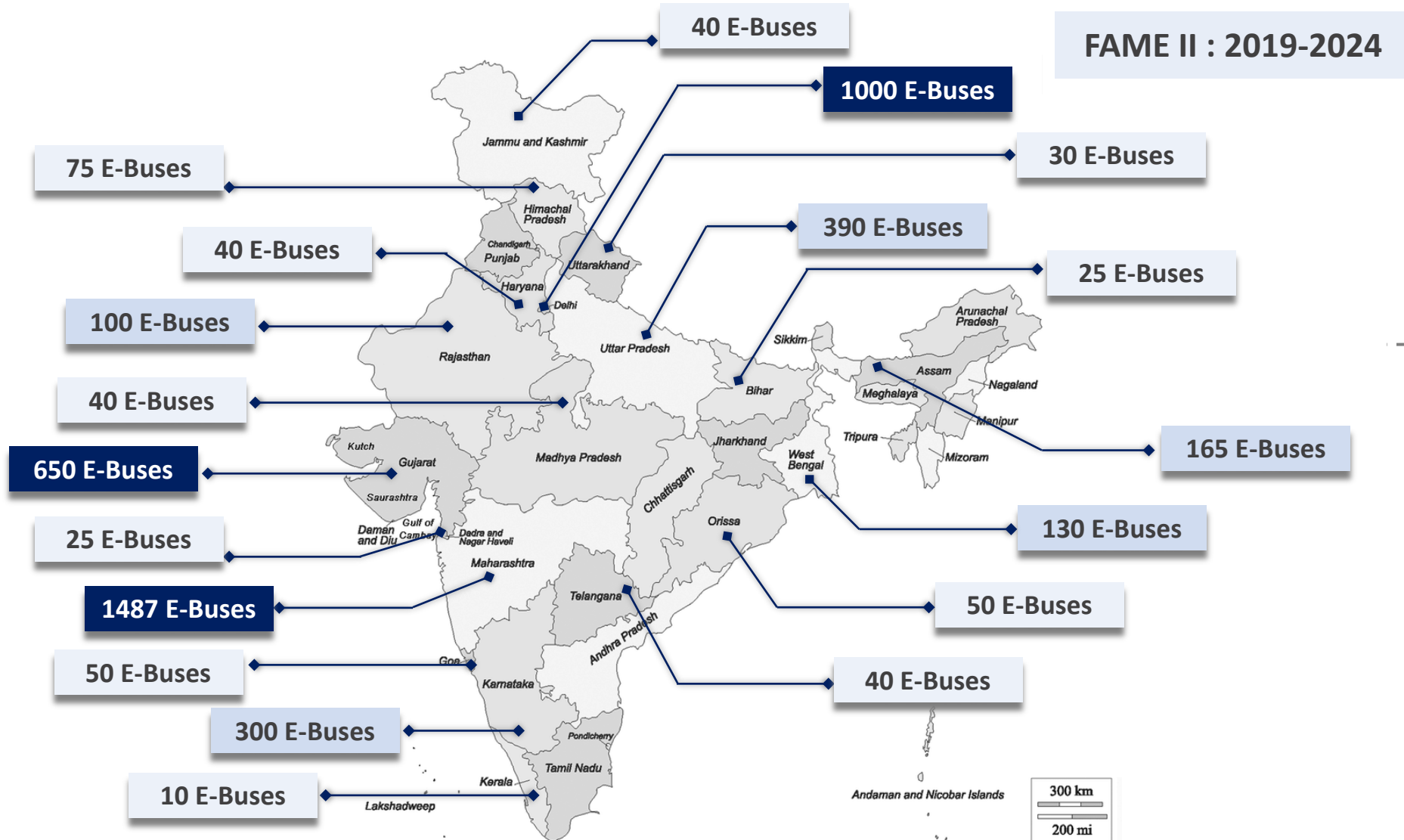


- Project on accelerating transition to electric mobility
- Policy support to transitioning to electric mobility
- Asia-Pacific Initiative on Electric Mobility

# E-Bus Deployment in India

Faster Adoption and Manufacturing of Hybrid & Electric Vehicles (FAME)

FAME I : 2015- 2019



**150,000 Buses**

Total Number of Buses on Road in India

**4647**

Total Number of E-Buses in India

**2/3<sup>rd</sup>**

are Midi 9 m Buses

**1/3<sup>rd</sup>**

are Standard 12m Buses

< 100

100-500

500+

Source: DHI, STUs. Prof. Swamy

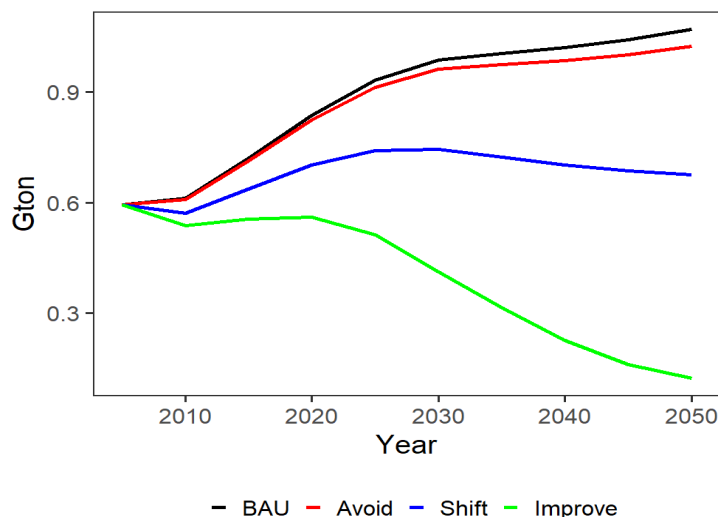
# Policy Scenario Modelling for CO2 Reduction: ASI

## 6 scenario analyzed

- A reduction of transport demand (Avoid)
- Mass-transit development (Shift)
- Car sharing (Shift)
- Energy efficient improvement (Improve)
- Electric mobility (Improve)
- Carbon pricing (Improve)

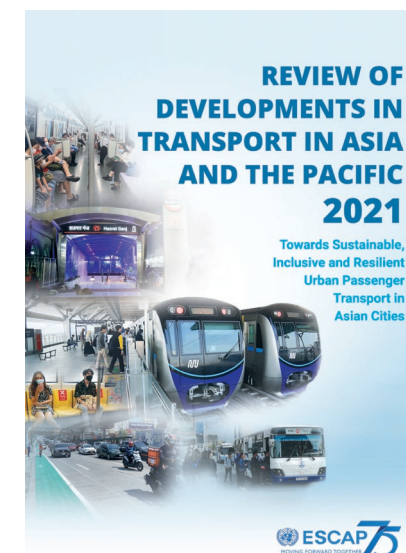
## CO2 reduction by 2050

- Electric mobility (Improve) -72%
- Energy efficiency (Improve) -66%
- Car sharing (Shift) -20%
- Demand reduction (avoid) -10%



## Electric mobility and energy efficiency improvement

- Technology dependent
- Investment needs
- Technical capacity of countries





# Accelerating the Transition to Electric Mobility for Public Transport



**National workshops in Georgia, Nepal, Lao PDR, Thailand, Regional Meeting**

# Asia-Pacific Initiative on Electric Mobility

Support acceleration of transition to electric mobility in the region

Enhance regional cooperation, provide opportunities for peer learning sharing of experiences

Strengthen countries' capacity to formulate national policies on transitioning to electric mobility

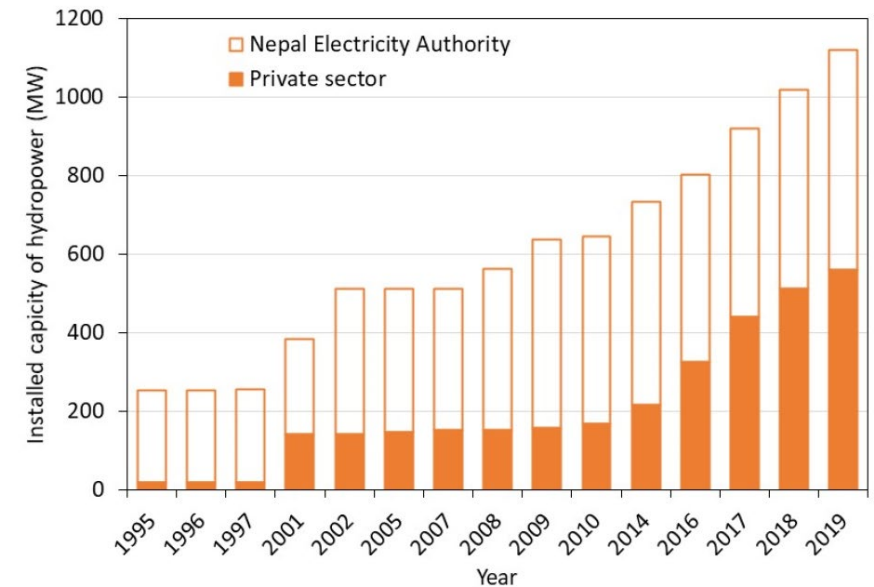
Enhance multi-sectoral collaboration

Develop a knowledge base on electric mobility ecosystem



# Experience from Nepal

- Reduce 29% GHG by emissions from transport by 2030
- Hydroelectricity- capacity 46 GW, installed 2 GW, reach reach 11 GW 2030
- NEA- Developing 500 charging infrastructure
- 80 charging stations developed by private sector
- Operation of electric bus, minibuses, electric tempos
- Procurement of 200 Electric buses in Kathmandu
- Gradual expand EV to other cities and intercity transport





# Concluding Remarks

- Integrated policy and strategy for public transport and electric mobility
- Coordination among ministries, (Transport, Urban, Energy, Finance), governments (Federal, Provincial, Local) and stakeholders
- Lead institution-accountability, governance and coordination
- Financing & Diffusion of Technology - Incentives schemes and support for upfront investment
- Innovations and Opportunities: **Public transport operation, Battery leasing, EV assembly, Retrofitting of ICE to EV, Maintenance of EVs, New design of paratransit**
- Partnerships: Global & Regional Initiatives and Alliances- **private and public sector, NGOs, CBOs**

# Thank You

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TRANSPORT RESEARCH AND EDUCATION NETWORK

<https://www.unescap.org/projects/tren>

Nepal Workshop on EV

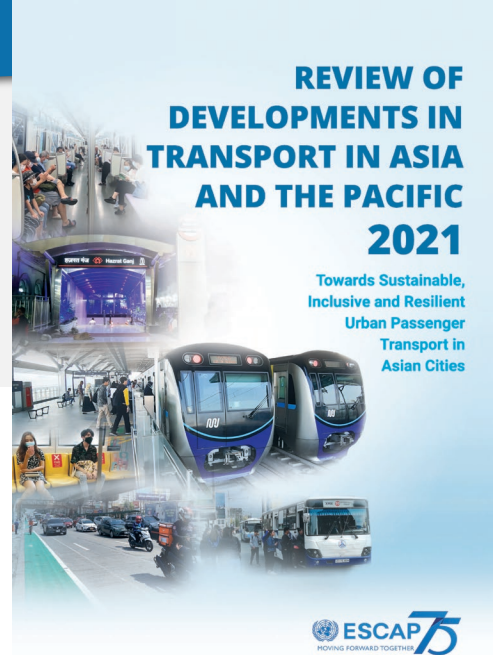
<https://www.unescap.org/events/2022/national-consultative-workshop-strategy-electrification-public-transport-nepal>

Regional Meeting on Just Transition to Low Carbon Mobility and EV, 10-11 August 2022

<https://www.unescap.org/events/2022/regional-meeting-just-transition-low-carbon-mobility-asia-and-pacific>

**REVIEW OF  
DEVELOPMENTS IN  
TRANSPORT IN ASIA  
AND THE PACIFIC  
2021**

Towards Sustainable,  
Inclusive and Resilient  
Urban Passenger  
Transport in  
Asian Cities



ESCAP 75  
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