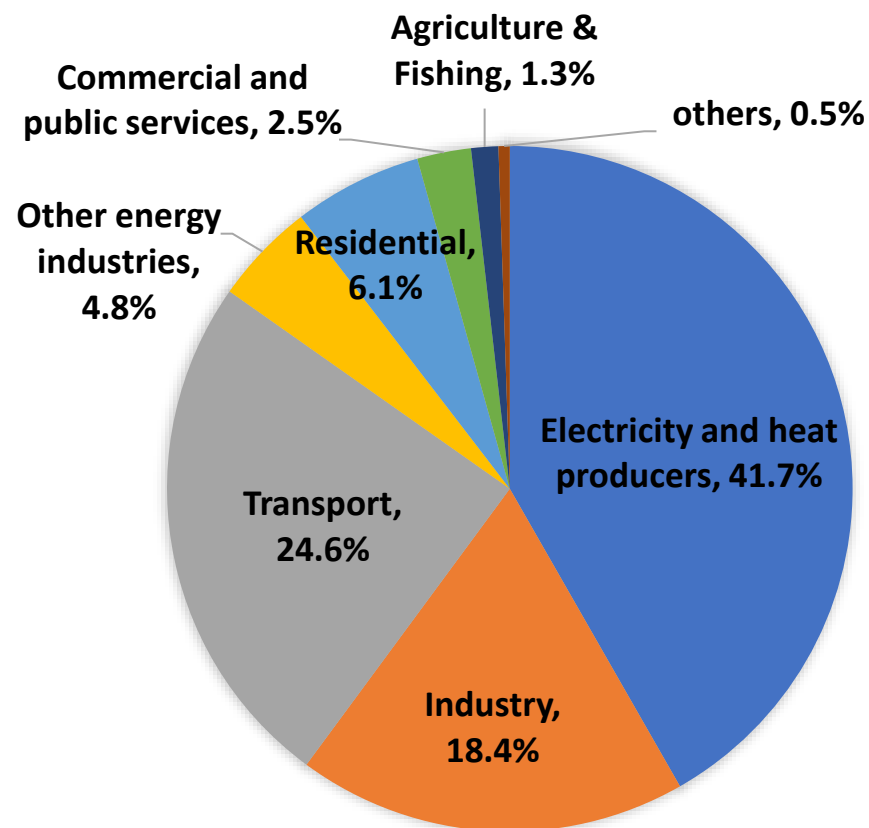


National Consultative Workshop on Strategy for
Electrification of Public Transport
Kathmandu, 18-19 May 2022

Transition Towards Electric Mobility in Asia

Madan B. Regmi, D. Eng.
Chief, Transport Research and Policy Section
Transport Division, UNESCAP

CO₂ Emissions from Fuel Combustion by Sector, 2018

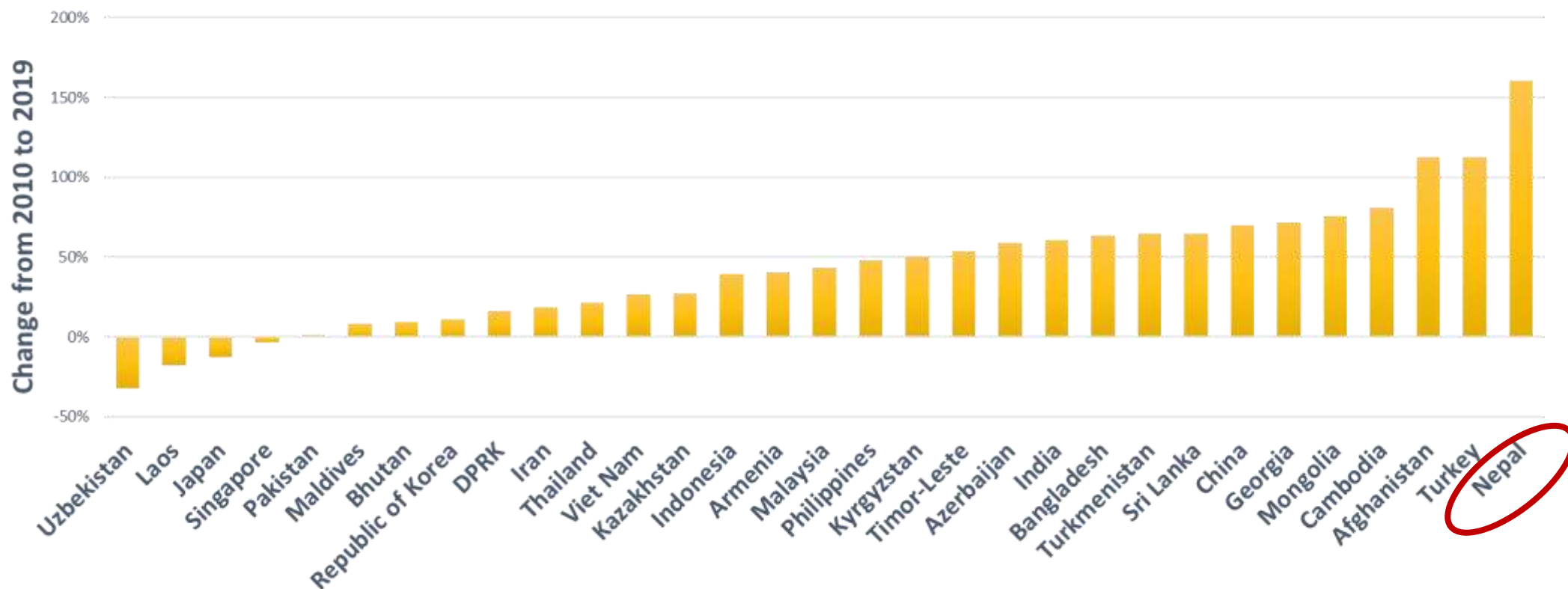


- Passenger & Freight Volume > double by 2050 compared 2015
- Major GHG emitter countries are in Asia
- Transport sector accounts for 25% emissions from fuel consumption, 2018
- Road transport responsible for 75% emissions
- Passenger-59% and freight- 41% responsible global transport CO₂ emissions

CO2 Emissions in Asia

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

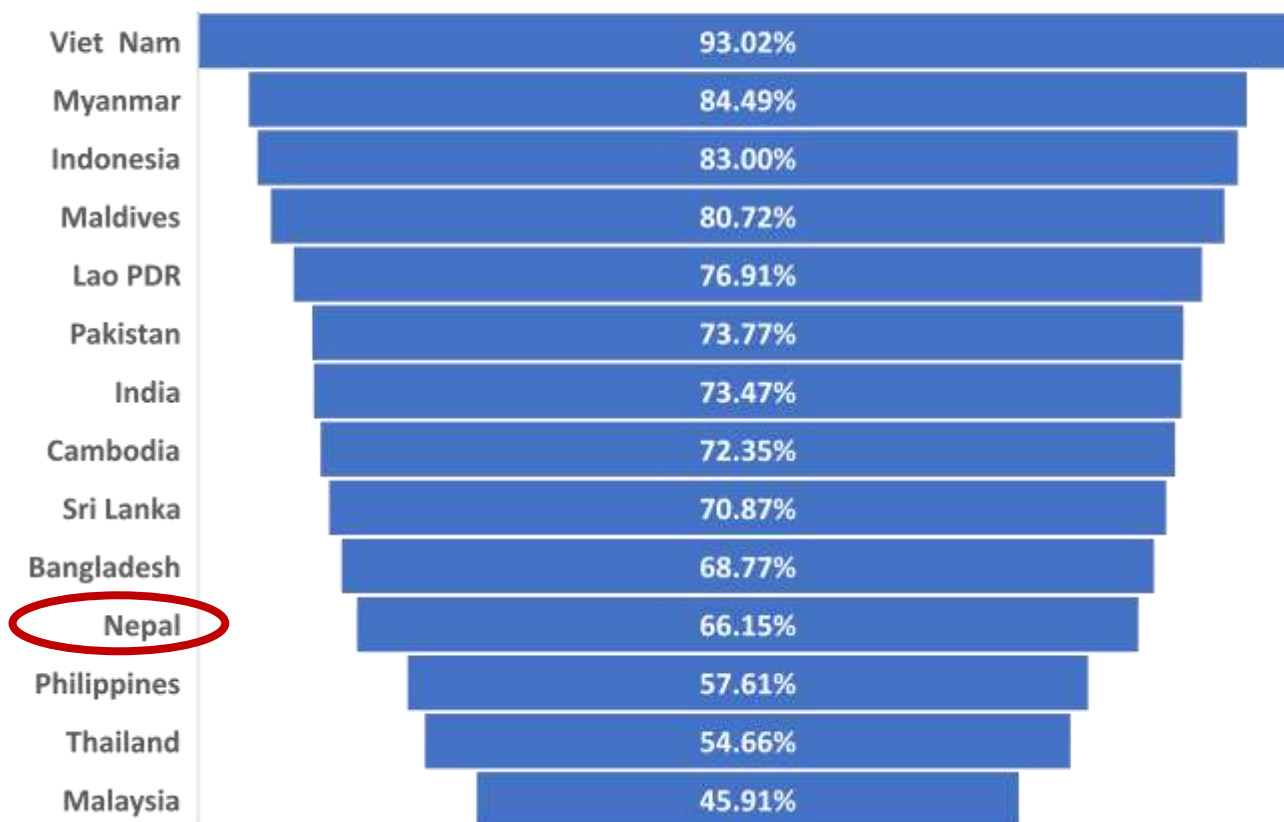
Change in transport CO2 emissions in Asia, 2010-2019



Source: SLOCAT, Transport and Climate Change, 2021

Powered 2 and 3 Wheelers

Share of power 2 and 3 wheelers in vehicle fleet



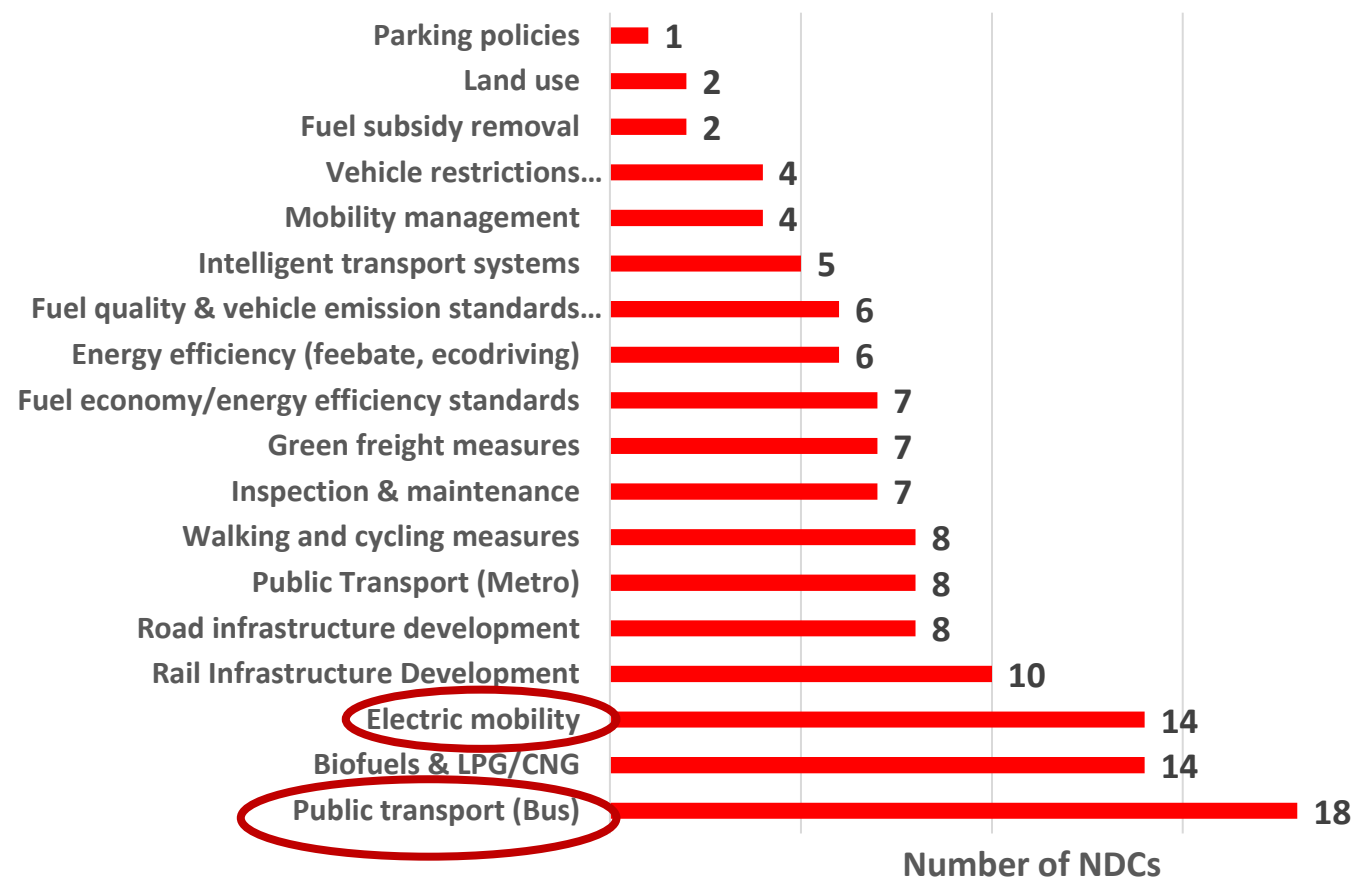
Source: WHO, 2018



Decarbonization of Transport

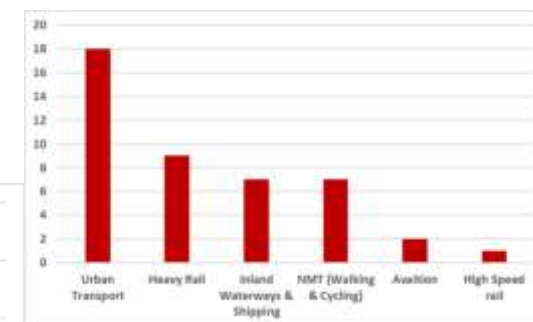
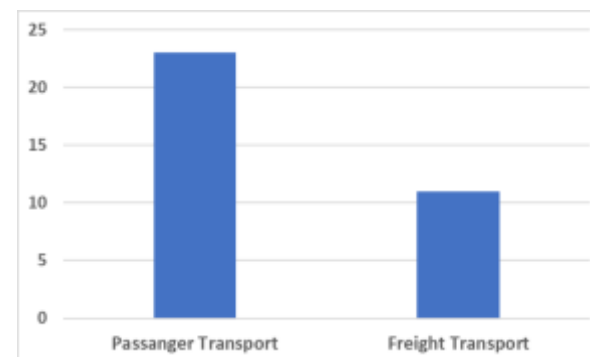
- Paris Agreement: to keep rise global average temperatures to below 2°C and closer to 1.5°C above pre-industrial levels
 - Mitigation and Adaptation Action
 - Nationally Determined Contributions (NDCs)- ambitious
- SDG 7- Double energy efficiency by 2030
- COP26, Glasgow:
 - Rapid, deep and sustained 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



Source: UNFCC

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



NDC and Energy Portfolio Nepal

Nepal aims to reduce:

- 28% GHG emissions from transport sector by 2030

Transport sector measures:

- Mass public transport
- Electric mobility
- Operation of operate electric public transport in 3 provinces
- e-vehicles to cover 90% of all private passenger vehicle sales by 2030

Status

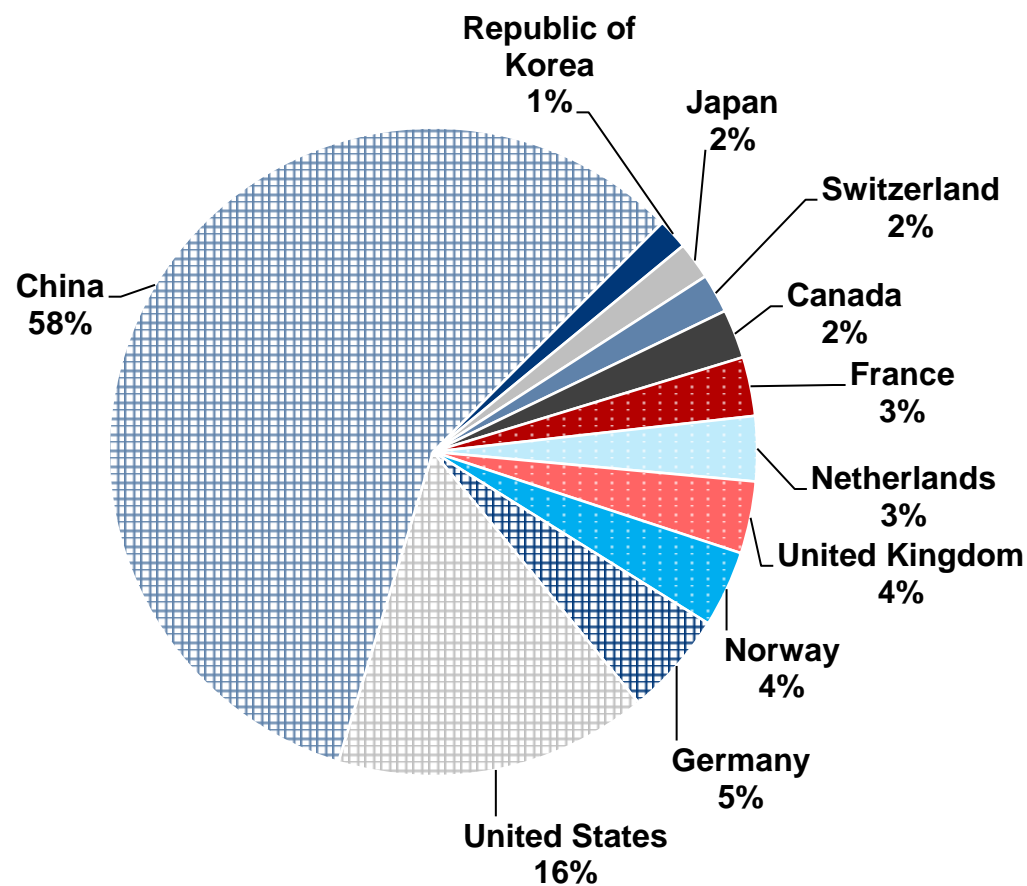
- Charging stations: 500 (NEA), 80 (private)
- Private operation of electric bus, minibuses, electric tempos
- Sajha- Electric buses

- 42 GW hydropower generation capacity
- About 2GW installed capacity
- With completion of ongoing projects, the generated capacity will reach 11 GW
- 2,000 MW electricity produced every day
- As of October 2021, Nepal has surplus power even during peak hours (peak demand = 1,500 MW)
- Low demand for power at night (900 – 1,100 MW) - opportunities to charge electric vehicles
- Need to increase consumption of electricity

New Energy Vehicle Sale in 2019

China- 100% electric public transport

- Guangzhou
- Shenzhen
- Xi'an



ASI Framework- Mitigation Opportunities in Transport

AVOID

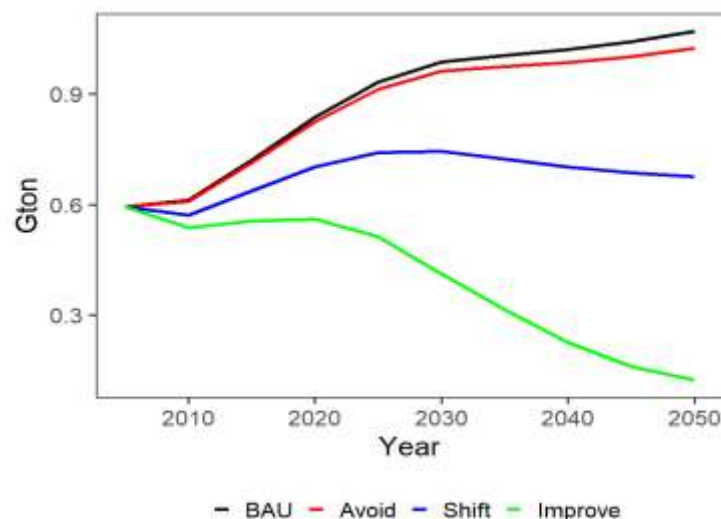
- Reducing travel demand
- Compact city planning
- Post-COVID-19: Teleworking, use of ICT, 15-minute city
- Discourage private mode

SHIFT

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

IMPROVE

- Improve energy efficiency
- Electric mobility
- Alternate fuels

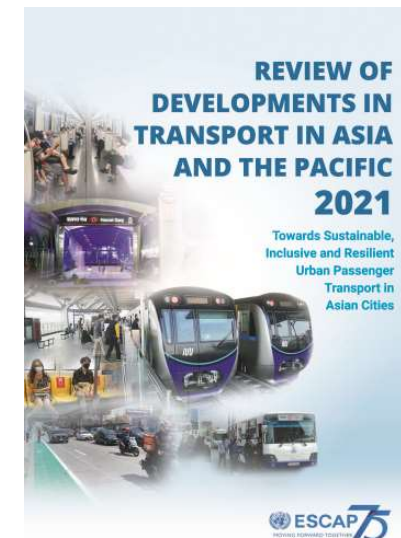


Model analysis of 5 scenarios

- Energy efficiency
- Electric mobility

Importance of Data, Analysis and Modelling

- Mode choice model
- Emission scenarios



Transition to Electric Mobility

- High share of renewables in power grid
 - Urban transport master plans - implementation? Results?
 - Current focus on electric two-wheeleders and private cars
 - Big Push towards Sustainability: Electric Bus Transport
 - Policy and strategies on transition to electric mobility-operational strategy
-
- **National EV Policies and Strategies**
 - Pilot countries – Georgia, Laos, Nepal, Fiji and Thailand
 - Review of current policies and opportunities
 - National stakeholders' consultation workshops- 2022



Regional Initiative on EV Transition in Public Transport

- **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, Research Institute of Highways, China
 - GIZ- SMMR Sustainable Mobility in Metropolitan Region in ASEAN Project
 - King Mongkut University of Technology, Thonburi, Thailand
 - Research Institute of Highways, China

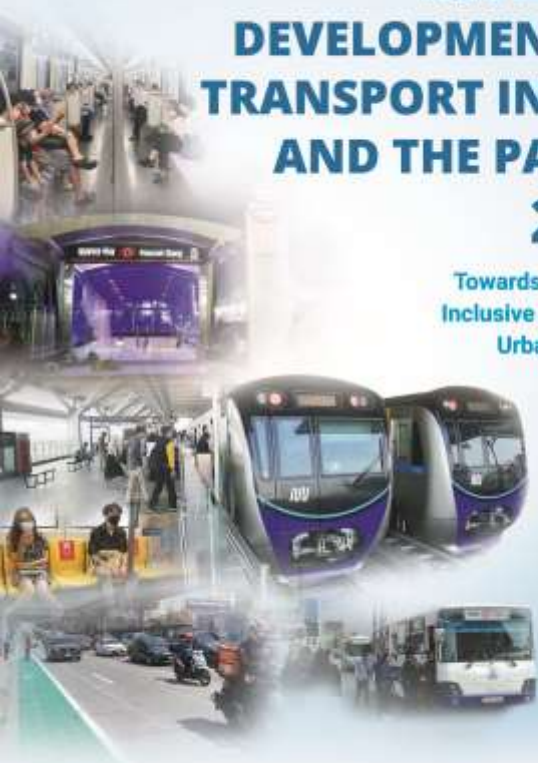


Concluding Remarks

- Integrated policy, strategy and road map for transitioning to electric mobility
- Linking to ongoing policies, strategies and action plans
- Identifying roles and responsibilities of institutions and stakeholders
- Coordination among ministries (MoPIT, Urban, Energy, Finance), governments (Federal, Provincial, Local) and stakeholders
- Financing & Diffusion of Technology- NDCs linked to additional support
- Partnerships: Global & Regional Initiatives and Alliances- private and public sector

REVIEW OF DEVELOPMENTS IN TRANSPORT IN ASIA AND THE PACIFIC 2021

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



Thank You

regmi.unescap@un.org



www.unescap.org/kp/2021/review-developments-transport-asia-and-pacific-2021

<https://www.unescap.org/blog/asia-pacific-regions-transport-sector-needs-big-push-towards-decarbonization>

<https://www.unescap.org/blog/meeting-urban-mobility-needs-through-paratransit-and-informal-transport-asia-pacific-cities>