



ASEAN Policies Pathway in Untapping RE Potential in Transport Sector Through Electric Vehicle

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Innovations in Renewable Energy
Sustainable Urban Energy Solutions: Role of Renewables

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**One Community
for Sustainable
Energy**

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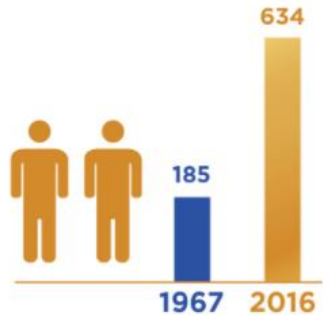
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ASEAN – Community of Opportunities

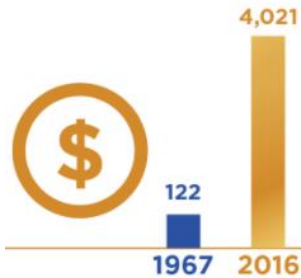
50 years Journey of ASEAN



Population
(in million)



GDP per capita
(in US\$)



ASEAN population was **8.5%** of the world population in 2016



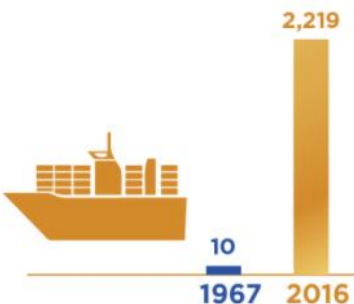
In 2016, attracted **US\$ 96** billion FDI



Poverty has decline from, **47%** in 1990 to **14%** in 2015,

Trade
(in US\$ billion)

Trade service quadrupled between 1999 and 2016 to reach **US\$681** billion



Electricity Consumption
1,287 kWh/cap

the **6th** largest in the world & the **3rd** largest in Asia.





One Community
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Energy

Outline

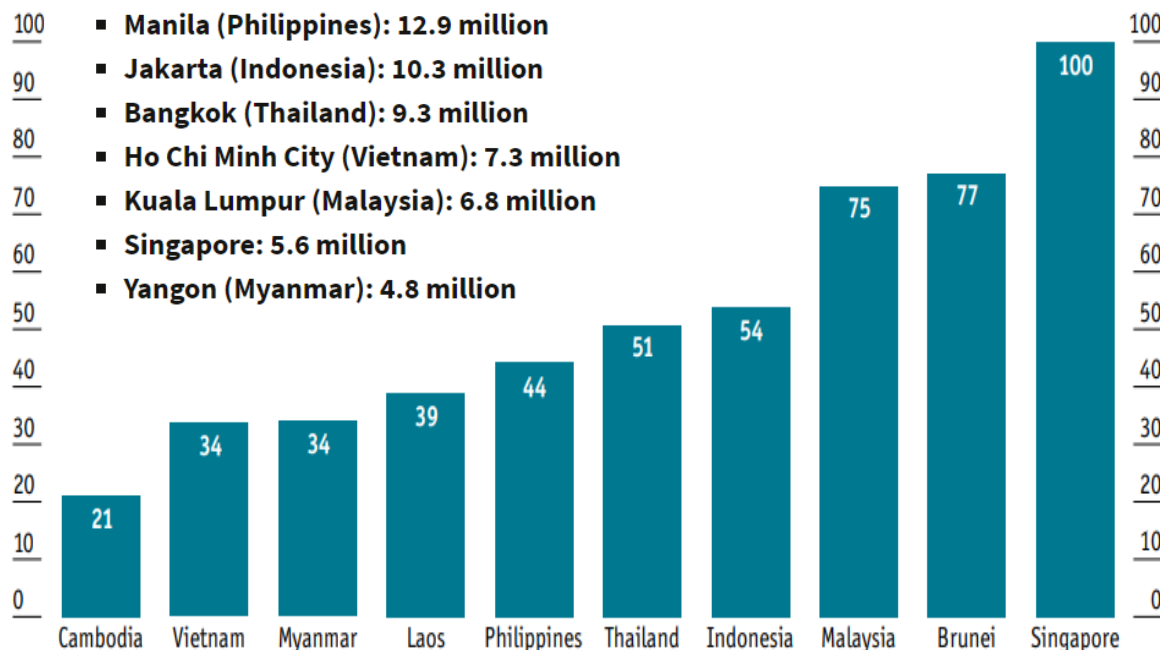
- Why untap RE potential for transport sector?
- What are the opportunities for ASEAN?
- How ready is ASEAN in implementing EV?
- What are foreseen challenges for ASEAN?
- Policy strategy & Takeaway points

Why untap RE potential in ASEAN Transport Sector?

- Rapid urbanization in ASEAN creates challenges such as prominently increasing transportation demand and city congestion.

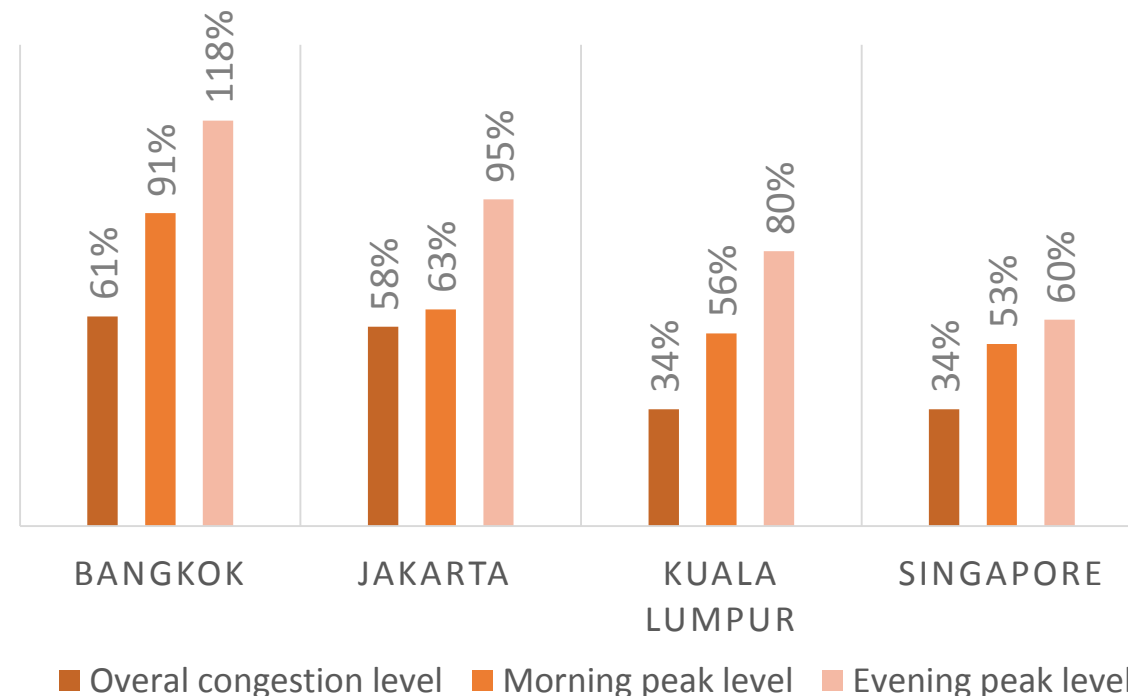
Urban Population, 2015

(% of total population)



Source: World Development Indicators, World Bank.

TRAFFIC CONGESTION IN ASEAN SELECTED CITIES (2016)

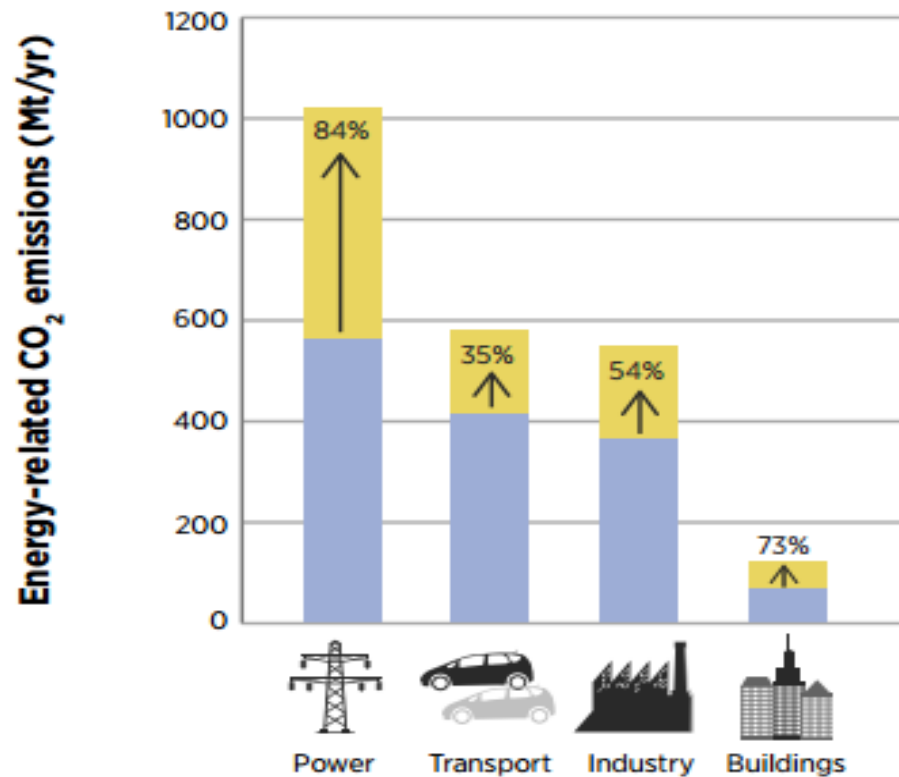


Source: https://www.tomtom.com/en_gb/trafficindex/

Why untap RE potential in ASEAN Transport Sector?

- Transport sector is the second biggest contributor to CO₂ emission

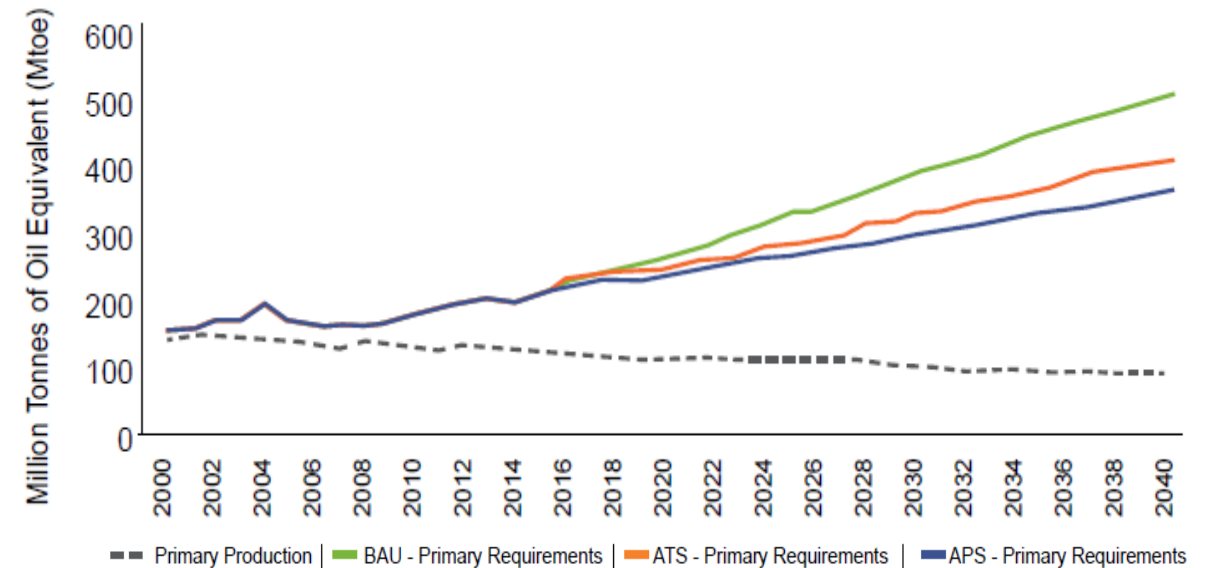
ASEAN's energy-related CO₂ emission by sector 2014 and Reference case



Source: RE Outlook for ASEAN, ACE-IRENA

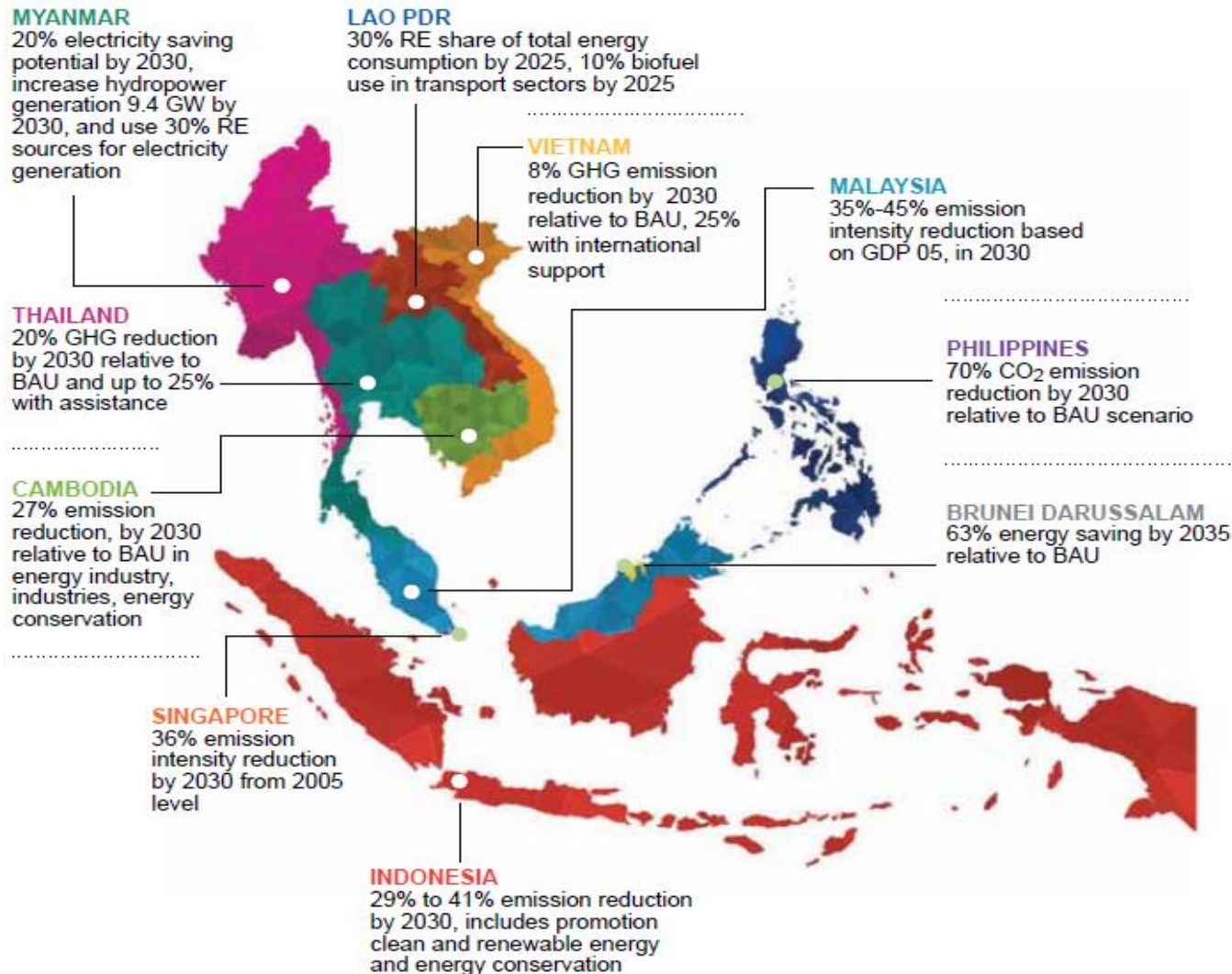
- Increasing mismatch of ASEAN oil production vs. oil requirements

ASEAN oil production vs. requirement to 2040



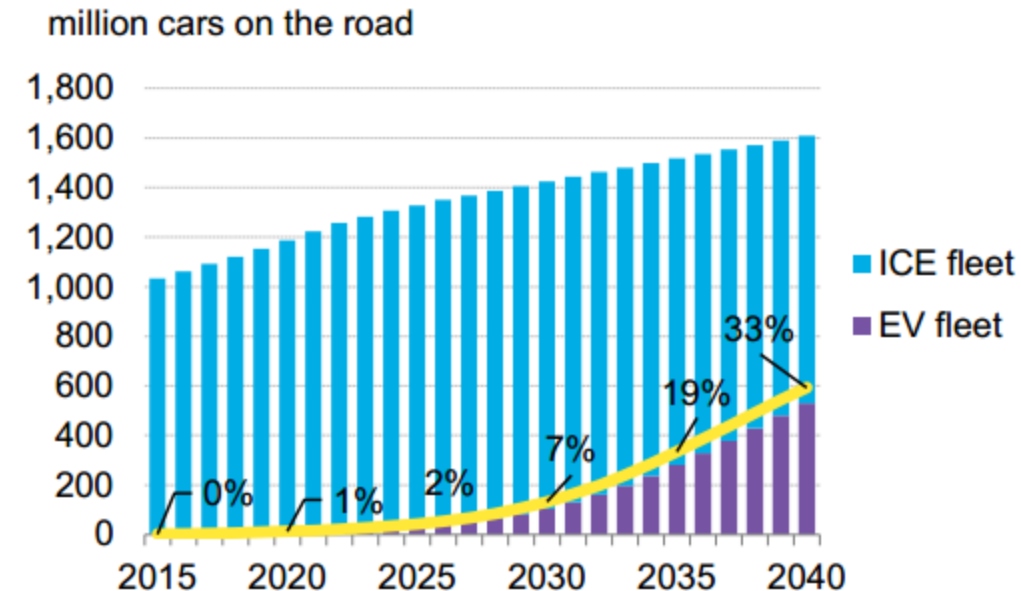
Source: The 5th ASEAN Energy Outlook, ACE

What are the opportunities for ASEAN?



- ASEAN has strong commitment to pursue RE through regional target, RE target and INDC target
- Global trend to shift to EV due to declining technology cost

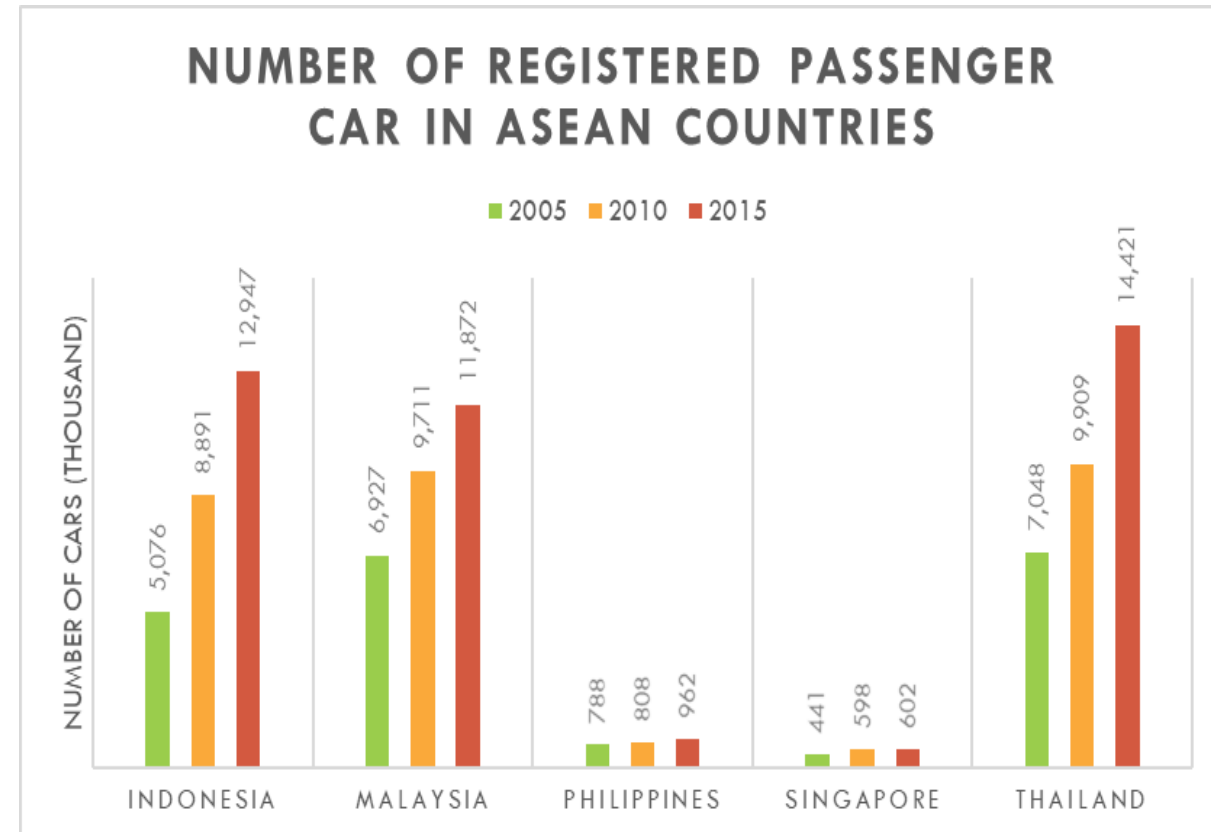
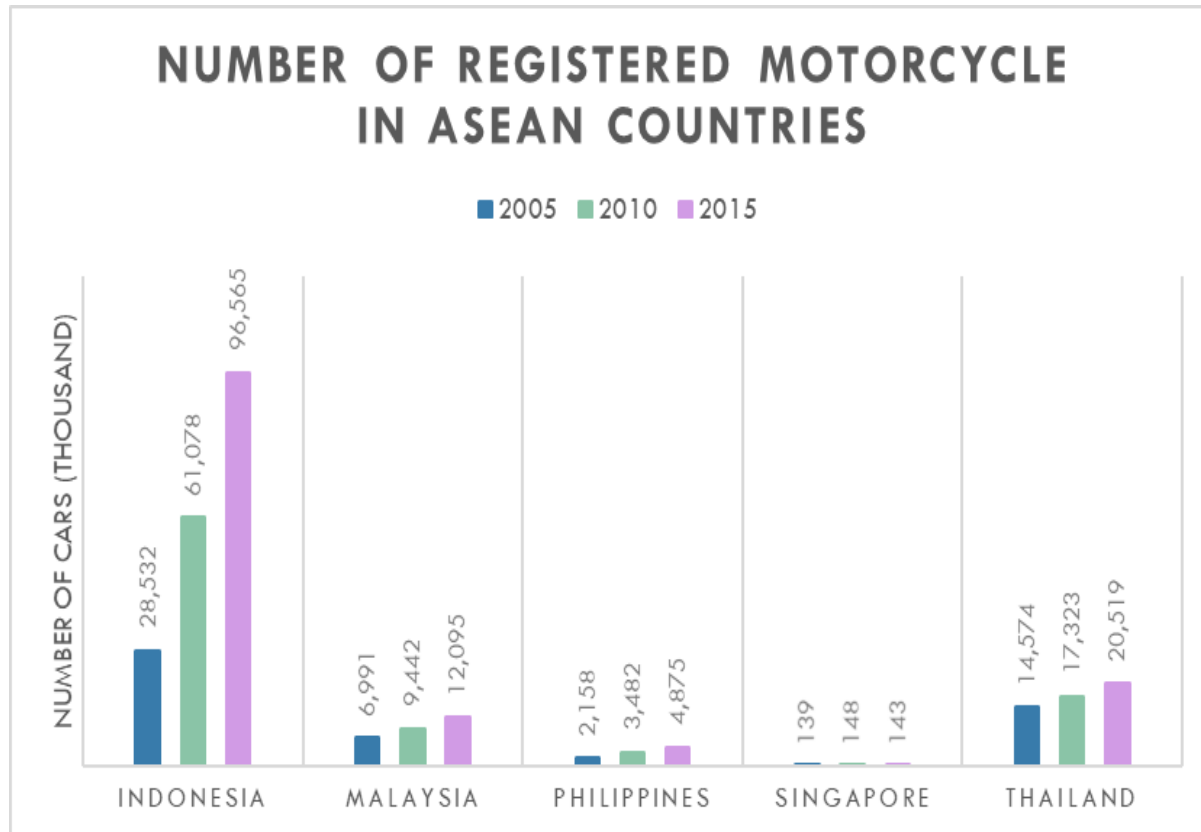
Global light duty vehicle fleet



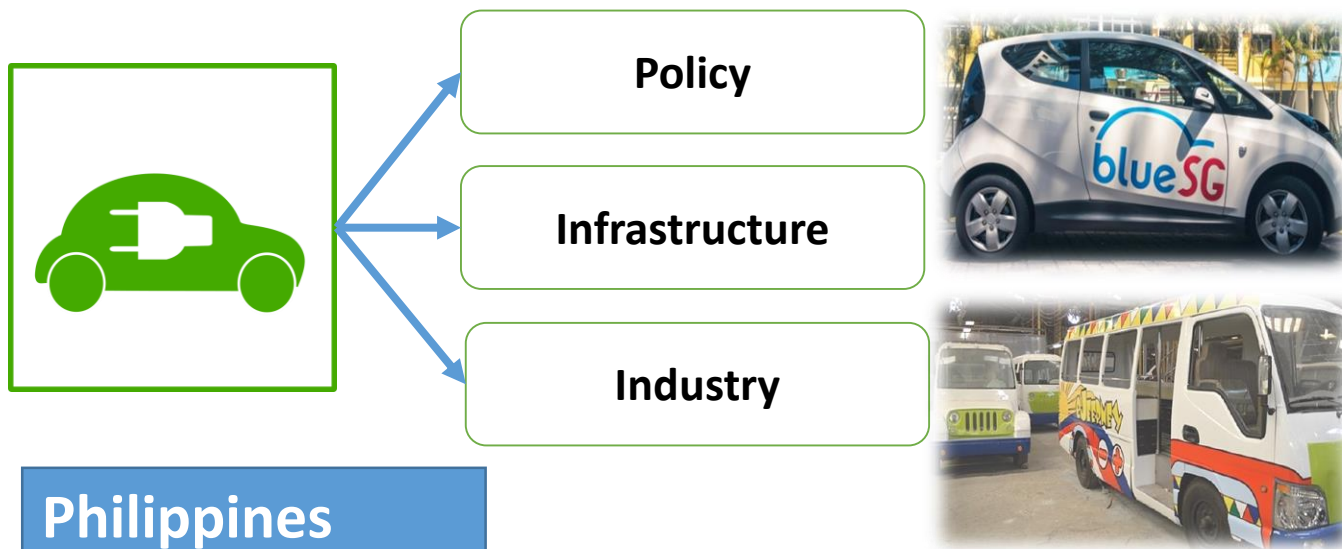
Source: Bloomberg New Energy Finance

What are the opportunities for ASEAN?

- ASEAN has opportunities to electrify the transport sector in cars, two/three-wheelers, and bus



How ready is ASEAN to adopt EV?



Philippines

- **DOE E-Tricycle Program**
 - 100,000 e-trikes to replace gasoline-fed e-tricycles
 - \$504-billion implemented in 5 years
- **Industry Development Program**
 - Platform for EV industry to discuss with stakeholders
- **Pilot E-Bus (10 E-bus from BYD) & Plan for E-jEEPney**
- **Supporting policies**
 - IPP 2014-2016, EO 488, s.2006, and PNS for Electric Vehicle

EV Pilot Program/ Initiatives

Singapore

- **2010**
 - Initiation for EV test-bedding program started
 - Setting Task force chaired by EMA & LTA
 - Allocated budget \$20million
- **2010-2011**
 - Technology Innovation and Development Scheme (TIDES+) available for companies & org.
 - TIDES+ provide tax waiver for cars for 6 years
- **2014**
 - Trial of 1000 EVs and charging infrastructure
- **2016-2017**
 - EV car sharing program (blue SG)
 - First batch of 125 Bluecars and 250 charging points

How ready is ASEAN to adopt EV?

EV Pilot Program/ Initiatives

Malaysia

➤ National Electric Mobility Blueprint

- Global electric mobility marketplace by 2030
- Target to install 100,000 E-cars, 100,000 E-motorcycles, 2000 E-bus, 125,000 charging station

➤ Plan & Initiatives

- **EV sharing program:** COMOS was launched in 2014
- **E-bus:** order 55 units in 2014 via BYD-AMDAC-MGTC collaboration
- Published **EV Infrastructure Roadmap**, 5 MS-IEC standards, Established 3 local Electric Mobility service providers
- **Electric Mobility Industries:** BYD-AMDAC, Eclimo, FEN, Proton, CMS Consortium
- Installing more EV charging station in city center & public places

Thailand

➤ Target & Road Map

- Energy Efficiency Plan 2015 → 75 EV in 2021 to 1,123 EV in 20136
- Thailand EV action Plan by MOE → Phase I (prepare) 2016-2017, Phase 2 (research) 2018-2020, Phase 3 (extend) 2021-2036

➤ EV Manufactur potential

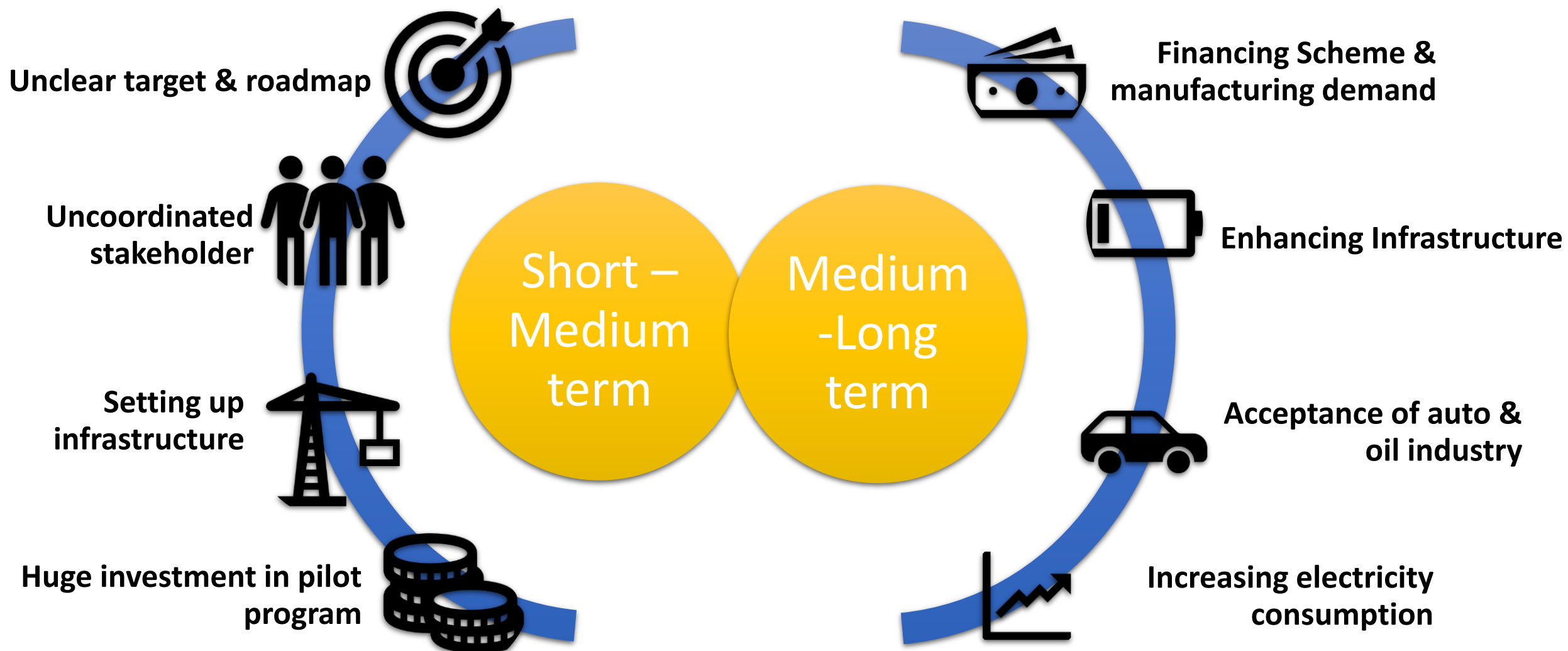
- E-tuktuk
- Nissan Motor, BMW,



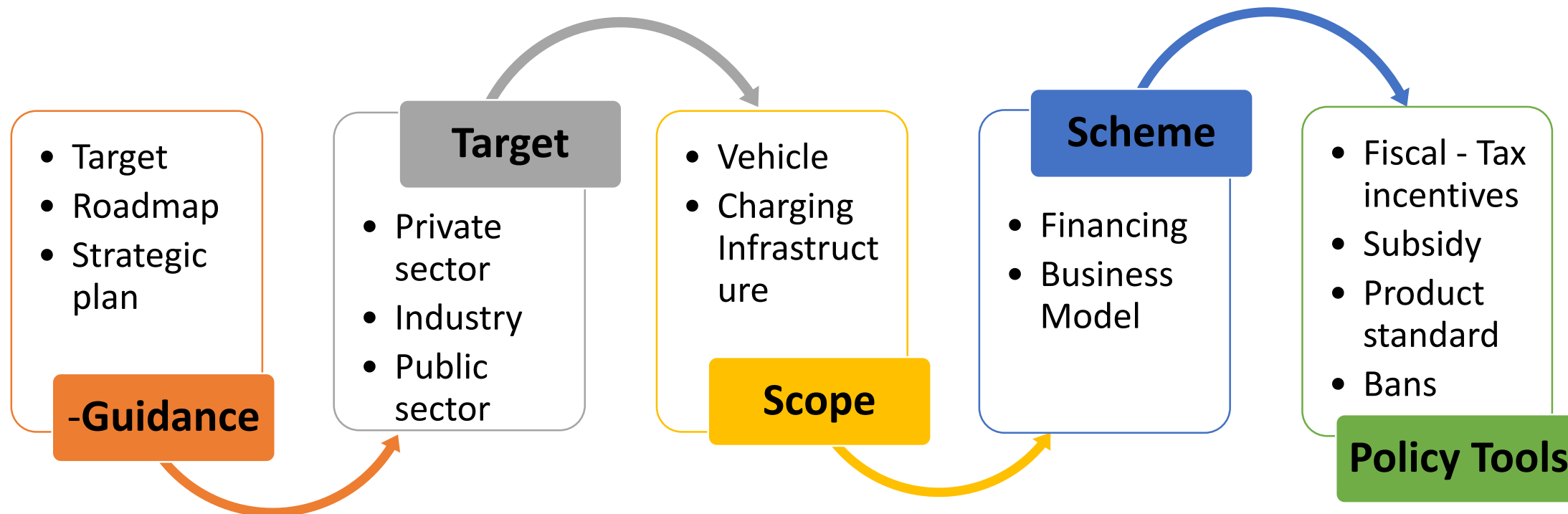
Indonesia

- Plans to **ban sales of petrol and diesel cars by 2040**, and aims for market share of EV to reach 20% by 2025

What are foreseen challenges?



Policy Strategy



Example:

POLICY- main drivers to move towards electrified transport sector



Stringent transport mandates to convert motor cycle with e-motorcycle

- Limiting gasoline cars license and provide unlimited EV car license



Establish dedicated state-owned org. (Transnova) for transforming transport sector

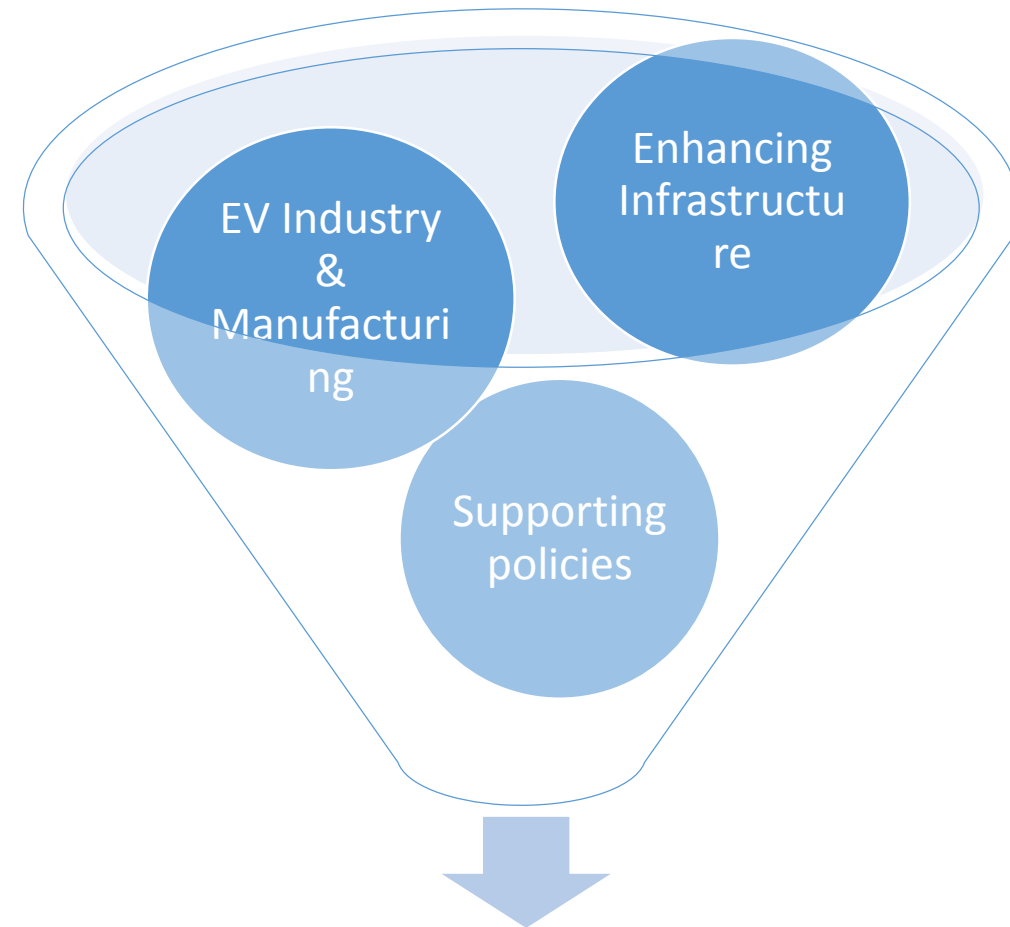
- Designing various incentives for boosting infrastructure & market demand

The Takeaways

AMS are in early phase and has different readiness in adopting EV

ASEAN has challenges in transport which EV can be part of solution

ASEAN has potentials and opportunities in adopting Evs for different types of vehicle



Drive EV adoption





Thank you!

