

Charging Up ASEAN's Future: A Comprehensive Review and Assessment of Electrification Policies for Transportation

Abstract

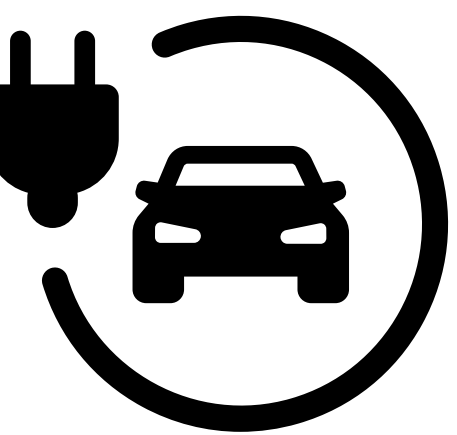
With the recent emphasis on carbon neutrality following COP26, many countries prioritize shifting to electric mobility as a crucial strategy to combat carbon emissions. A significant portion of this comes from transportation. Countries like Norway, China, and the United States are at the forefront of the electric vehicle (EV) industry, driven by effective e-mobility policies. In contrast, the 10 Association of Southeast Asia Nations (ASEAN) countries are in the early stages of adopting this emerging trend. This paper evaluates the current e-mobility policies within ASEAN using the STEELUP framework, a comprehensive analysis tool encompassing sociocultural, technological, economic, environmental, legislative, urban design, and political aspects. By critically assessing the implementation of e-mobility policies in each country, this research aims to identify gaps and challenges that hinder the acceleration of EV adoption in the region.

Objective

To assess current e-mobility policies in fostering EV adoption in ASEAN and propose effective strategies to expedite the uptake of electric vehicles in the region

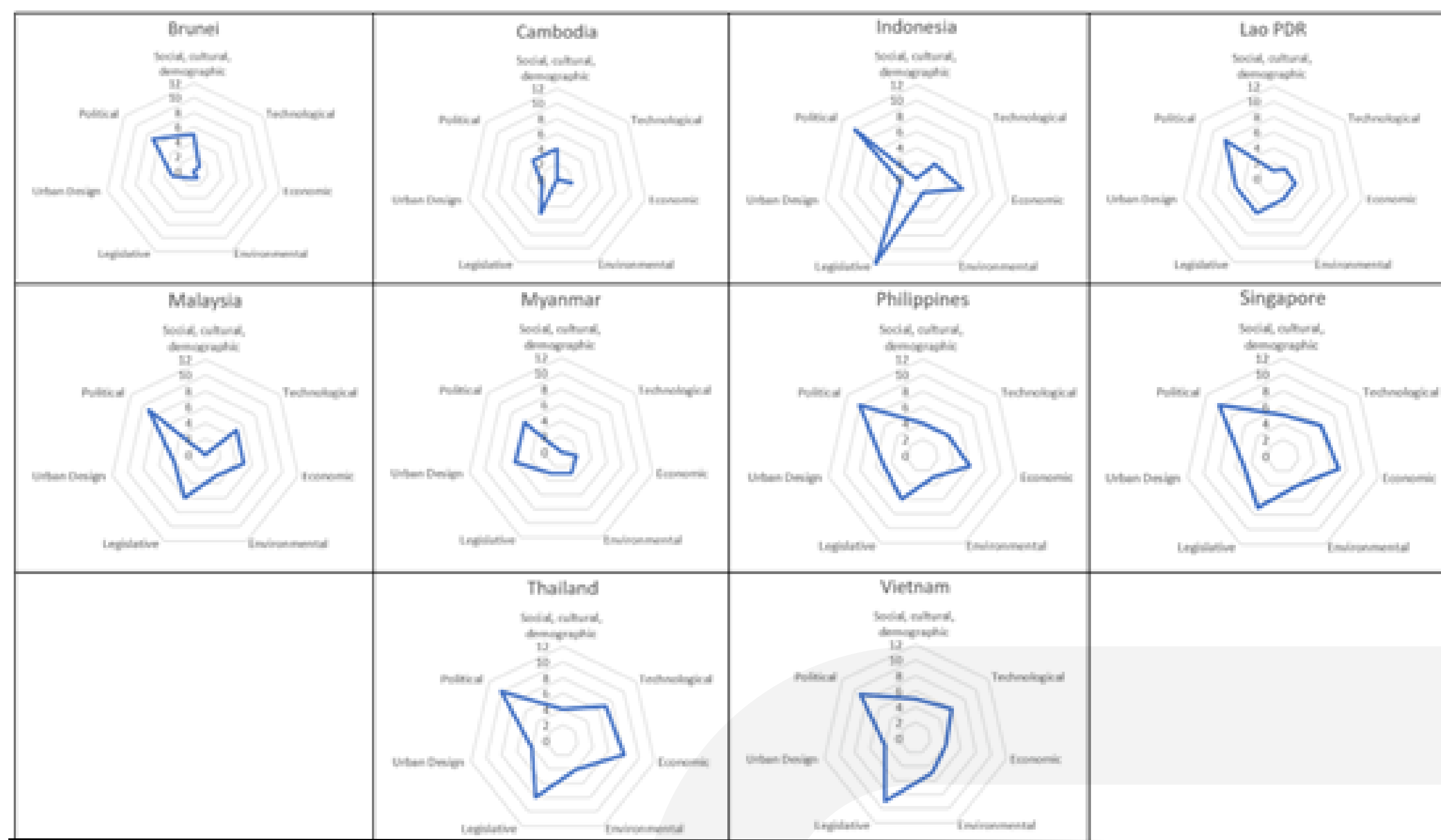
Methodology

The evaluation process using the STEELUP framework involves grouping a total of 60 diverse indicators, categorised into sociocultural, technological, economic, environmental, legislative, urban design, and political aspects. Each ASEAN country's policies and strategies will be analysed against these indicators. The resulting scores will provide an overall assessment of each country's efforts towards electrification, with higher scores indicating greater coverage and effectiveness in their electrification endeavours.

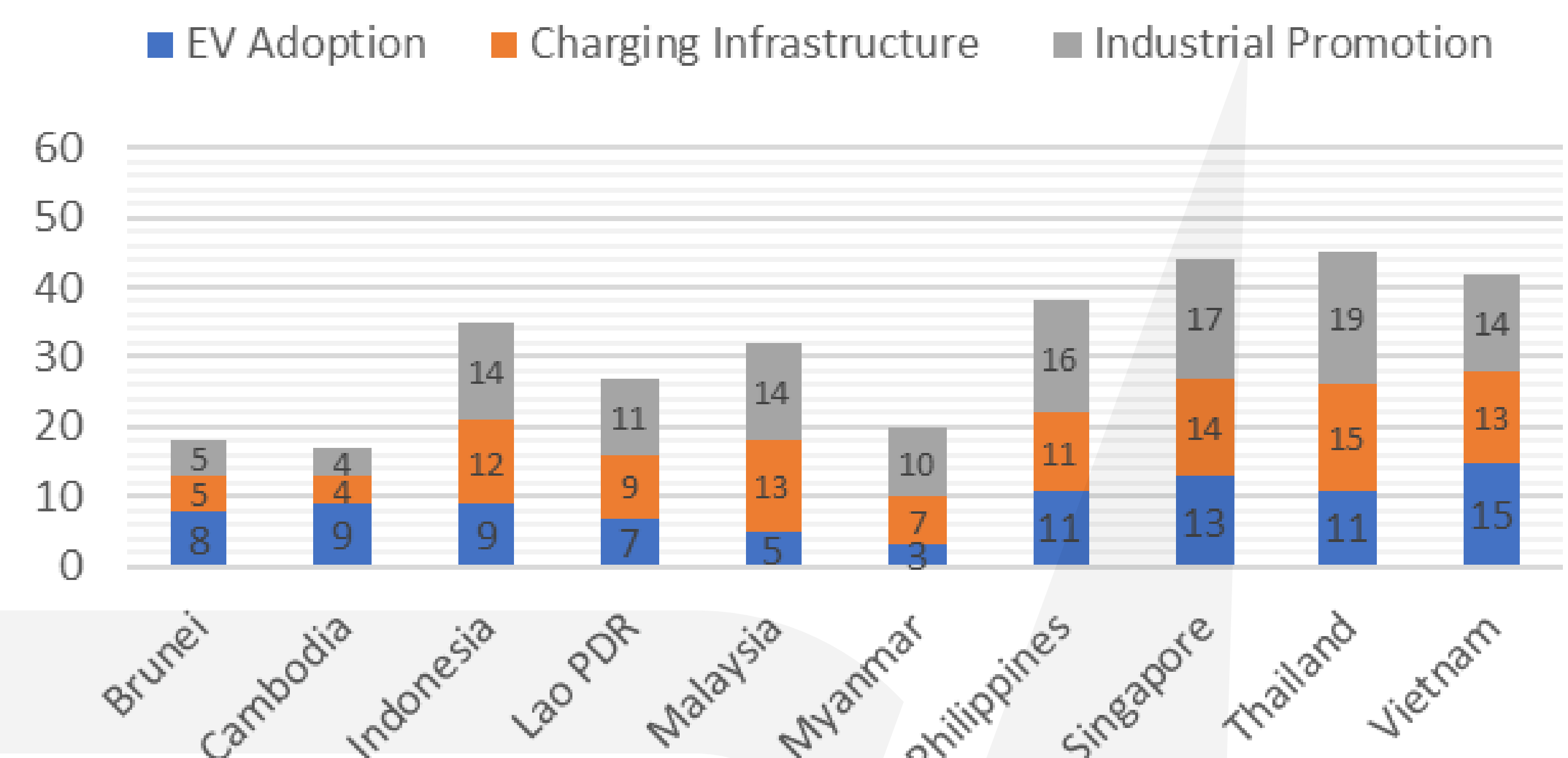


Results

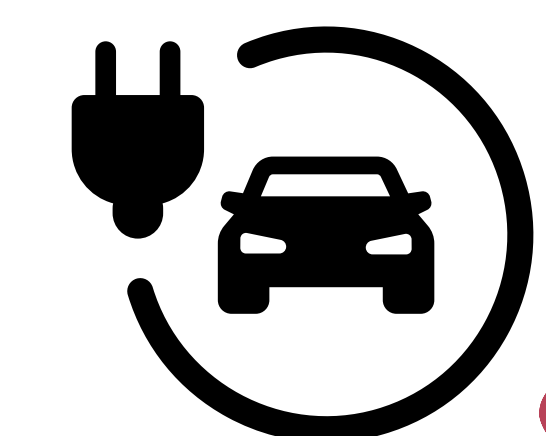
BASED ON ASPECTS



BASED ON GOALS



Brunei	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam
18	17	35	27	32	20	38	44	45	42



Key Policies

Malaysia

- National Automotive Policy
- Target of 700,000 EVs by 2030 through government procurement
- Position itself as EV manufacturing hub through fiscal incentives

Myanmar

- Aim for a 20% share of clean energy by 2020
- Guidelines and emission standards for ICEVs
- Lease factory space for local EV assembly

Thailand

- 100% EV sales by 2030
- 30% of locally produced vehicles being EVs by 2030
- Eight years corporate tax exemption for EV and EV battery manufacturers

Singapore

- Aims to reduce land transport emissions by 80% by 2050
- \$20,000 off the Additional Registration Fee for EVs
- 'Power Every Move' campaign to raise public awareness

Indonesia

- Targets to only sell electric motorcycles by 2040 and electric cars by 2050
- Largest nickel exporter
- Involve national energy company Pertamina to develop EV batteries

Laos

- Target for at least 30% of automobiles to be EVs by 2030
- Electricite du Laos (EDL) to provide charging services without charging fees
- Power mainly from HEP

Philippines

- Electric Vehicle Industry Development Act
- Mandates at least 5% of the government fleet to be EVs
- Improve public transport by replacing old jeepneys with EVs

Vietnam

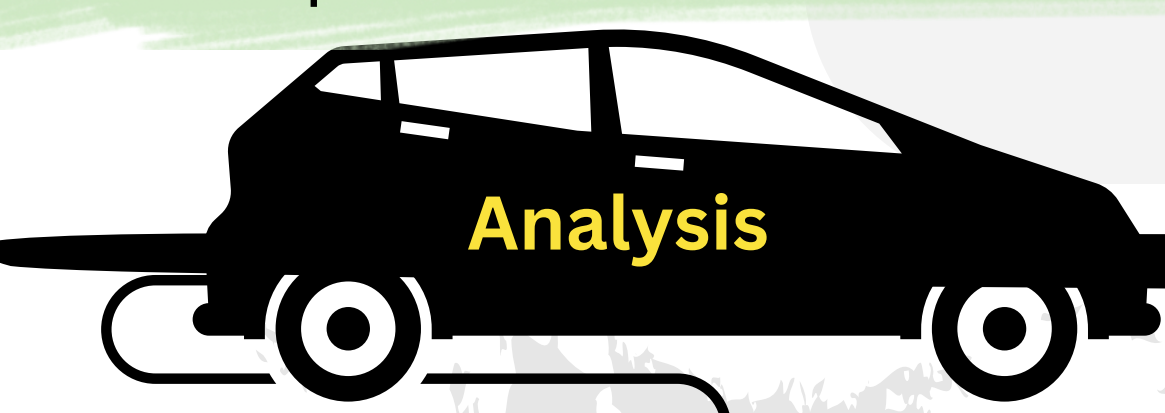
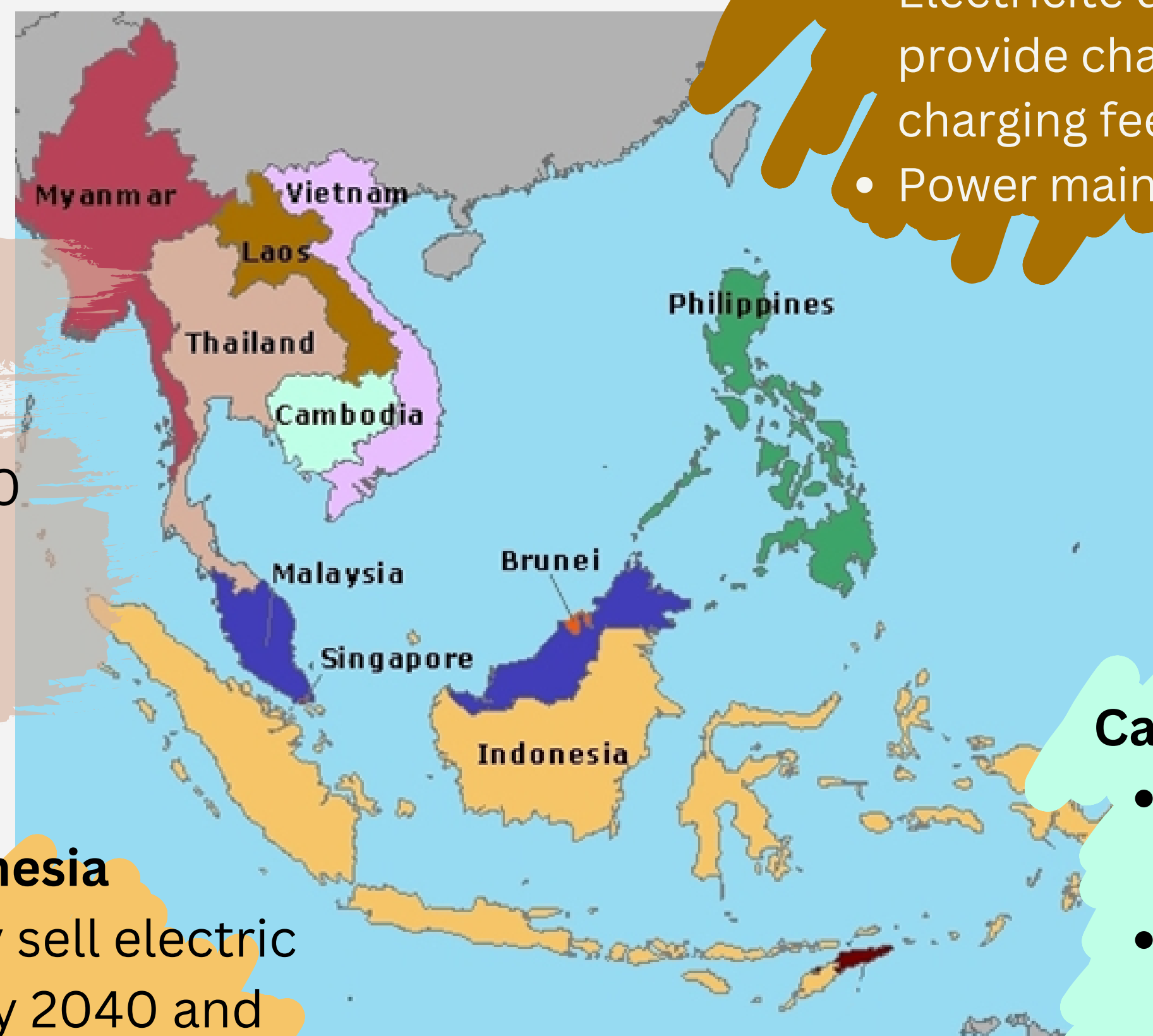
- Net-zero emissions goal by 2050
- Extra funding for R&D on EVs
- Regulations favouring local car manufacturers

Cambodia

- Long-Term Strategy for Carbon Neutrality
- Aim for 40% of EV cars and urban buses and 70% of electric motorcycles by 2050
- Attract FDI by lowering import taxes

Brunei

- Brunei Darussalam National Climate Change Policy (BNCCP)
- Minimum of 60% EV sales out of total vehicle sales by 2035
- Heavy reliance of private cars due to low fuel cost



Analysis

Strengths

- 1) Political will for the government: Emphasis on political related policies implies most countries had set clear targets and revised their roadmap. Some nations included EVs as part of their government fleet.
- 2) Economic background: Higher GDP per capita countries investing in advanced technological resources like fast charging systems
- 3) Maintaining comparative advantage: Recognized globally as automotive manufacturing hub, countries find means to attract more FDI while protecting local production

Areas for Improvement

- 1) Public acceptance through sociocultural policies: educating public on the intangible benefits of embracing e-mobility
- 2) Reliance on fossil fuel for power generation: clean electricity forms the foundation for the successful adoption of EVs and the ultimate reduction of greenhouse gas emissions



Recommendations

- 1) Develop platform for data collection
- 2) Enhance regional cooperation
- 3) Establish centralised funding
- 4) Organise regional events

