

E3G

Electric vehicles in Indonesia: a political economy analysis

October 2024

Neil McCulloch

Ilham Rizqian Fahreza Surya

Table of Contents

Acronyms	3
Acknowledgements	6
Executive Summary	7
1 Introduction	10
1.1 Background	10
1.2 Key questions	11
1.3 Methodology	11
1.4 Structure of the report	11
2 Overview of electric vehicle adoption in Indonesia	12
3 Factors influencing EV development in Indonesia	14
3.1 Foundational factors	15
3.1.1 Natural resources	15
3.1.2 Demographic and economic factors	16
3.1.3 Geographical and historical factors	16
3.2 Rules of the game	17
3.2.1 The formal legal and regulatory environment for EVs	17
3.2.2 The informal rules of the game around EVs	19
4 Key stakeholders in Indonesia's EV industry	22
5 Possible scenarios for the development of the EV industry	27
6 External actors and interventions	30
7 The wider political economy of the energy transition in Indonesia	34
8 Recommendations	35
References	35
Annex	43

Acronyms and Abbreviations

2W	: Two wheelers	JICA	: Japan International Cooperation Agency
4W	: Four wheelers	km	: kilometer
ADB	: Asian Development Bank	KPMG	: Klynveld, Peat, Marwick, Goerdeler
APBN	: <i>Anggaran Pendapatan dan Belanja Negara (State Budget)</i>	kWh	: kilo-watt-hour
APNI	: Asosiasi Penambang Nikel Indonesia (Indonesian Nickel Miners Association)	LCA	: Life Cycle Analysis
ASEAN	: The Association of Southeast Asian Nations	LCR	: Local Content Requirement
B50	: 50-percent biodiesel fuel	MEMR	: Ministry of Energy and Mineral Resources
BBNKB	: <i>Bea Balik Nama Kendaraan Bermotor (Vehicle Title Transfer Fee)</i>	MoI	: Ministry of Industry
BCG	: Boston Consulting Group	MoT	: Ministry of Transportation
BTS	: Buy the Service	MRT	: Mass Rapid Transport
CBU	: Completely built-up	MW	: Megawatt
CELIOS	: Center of Economic and Law Studies	NDC	: Nationally Determined Contribution
CFPP	: Coal-Fired Power Plant	NGO	: Non-governmental organization
CIPP	: Comprehensive Investment and Policy Plan	OEM	: Original Equipment Manufacturers
CKD	: Completely knocked-down	PAD	: <i>Pendapatan Asli Daerah (Regional Government Revenue)</i>
CMMI	: Coordinating Ministry of Maritime and Investment	PEA	: Political Economy Analysis
CREA	: The Centre for Research on Energy and Clean Air	PEG	: Political Economy and Governance

CSO	: Civil society organization	PEM	: Political Economy Mapping
E10	: 10-percent bioethanol fuel	PEMM	: Political Economy Mapping Methodology
E2W	: Electric two wheelers	PKB	: <i>Pajak Kendaraan Bermotor</i> (Motor Vehicle Tax)
E3G	: Third Generation Environmentalism	PLN	: <i>Perusahaan Listrik Negara</i> (State Electricity Utility)
E4W	: Electric four wheelers	PMK	: <i>Peraturan Menteri Keuangan</i> (Minister of Finance Regulation)
EU	: European Union	PPM	: Parts per million
EV	: Electric vehicle	PPN	: <i>Pajak Pertambahan Nilai</i> (Value Added Tax)
Gaikindo	: <i>Gabungan Industri Kendaraan Bermotor Indonesia</i> (Association of Indonesia Automotive Industries)	PPnBM	: <i>Pajak Penjualan Barang Mewah</i> (Sales Tax on Luxury Goods)
GDP	: Gross Domestic Product	PWC	: PricewaterhouseCoopers
GIZ	: <i>Gesellschaft für Internationale Zusammenarbeit GmbH</i> (German Corporation for International Cooperation)	RMI	: Rocky Mountain Institute
Gol	: Government of Indonesia	SoE	: State Owned Enterprise
GW	: Giga watt	TBI	: Tony Blair Institute of Global Change
HLI	: Hyundai LG Indonesia	TKDN	: <i>Tingkat Kandungan Dalam Negeri</i> (Local Content Requirement)
IBC	: Indonesia Battery Corporation	TPP	: The Policy Practice
ICE	: Internal Combustion Engine	UK PACT	: UK Partnering for Accelerated Climate Transitions
ID	: Identity	US	: United States

IDR	:	Indonesian Rupiah	USAID	:	U.S. Agency for International Development
IEA	:	International Energy Agency	USD	:	United States Dollar
IESR	:	Institute for Essential Services Reform	VA	:	Volt Ampere
IMF	:	International Monetary Fund	VAT	:	Value Added Tax
Jabodetabek	:	Jakarta Bogor Depok Tangerang Bekasi			
JETP	:	Just Energy Transition Partnership			

Acknowledgements

We would like to thank all the people who kindly agreed to respond to our questions. Thanks also goes to the IESR team, Julius Christian, Faris Adnan Padhilah, Agung Marsallindo, and Rahmi Puspita Sari who together organised a series of interviews with a wide variety of different stakeholders. We are also grateful to the E3G team for their management and support, including Genevieve Marsh, Pratiksha Khanduri, Samuel Stratford and Laila Kanji. All remaining errors and omissions are our own.

Executive Summary

Indonesia matters for action on climate change. The rapidly growing, middle-income country has the fourth largest population in the world and is the 10th largest CO₂ emitter globally. The Just Energy Transition Partnership signed at the November 2022 G20 meeting in Bali, hosted by Indonesia, is now moving into implementation.

To date, the JETP has focussed on decarbonising the power sector. However, another important component of Indonesia's energy transition is **the decarbonisation of transport** which is responsible for 16% of greenhouse gas emissions globally and the majority of air pollution in Indonesia's major cities. Reducing harmful emissions from transportation requires two key changes: a dramatic improvement in the quality of fuel used in Indonesia and the fuel efficiency of Indonesia's 152 million ICE vehicles; and a rapid shift towards the electrification of Indonesia's vehicle fleet.

Indonesian has very poor-quality fuel and low fuel efficiency. The Euro IV standards for cars, adopted by Indonesia, require sulphur content of less than 50 parts per million (PPM). However, subsidised gasoline in Indonesia has a sulphur content of over 500 PPM; biodiesel has 2500 PPM, while regular diesel has 3500 PPM. Upgrading to better quality fuel would require importing better (and more expensive) fuel, or a major upgrade to Indonesia's refineries. Similarly, fuel efficiency is low relative to the global average, in part because the government has been reluctant to enforce higher standards that would increase the price of vehicles.

Recent years have seen a dramatic rise in the number of EVs in Indonesia. From a couple of thousand EVs in 2020, the market has expanded rapidly; in 2023, there were more than 100,000 EVs, with around a fifth of these being four-wheel vehicles. In the mass transportation sector, EV adoption has relied on the adoption of electric buses by Jakarta's TransJakarta bus company which aims to be fully electrified by 2030. Other big municipalities, such as Surabaya, Medan and the Province of Bali also operate several electric buses. The government has a range of extremely ambitious targets for the expansion of the market – for example, the government's NDC commitment targets a stock of 15 million EVs by 2030.

The Government of Indonesia has made bold strides in developing an EV value chain. Presidential Regulation 55/2019 boosted the adoption of electric vehicles. This was followed by numerous regulations providing a range of incentives for consumers including exemptions or reductions in luxury tax, vehicle tax, title transfer tax, and VAT. Major EV companies have been provided with tariff free access to import EVs into the Indonesian market subject to commitments to build manufacturing facilities for EVs in the country with growing levels of local content.

The focus on EVs is driven by two key factors: a desire to exploit Indonesia's abundant nickel resources; and a push for job creation through industrialisation. Since the enforcement of Indonesia's 2014 nickel ore export ban, billions of dollars have been invested in nickel mining and processing plants in Indonesia, predominantly by Chinese companies, often with close linkages to leading Indonesian political and business elites. These investments have made it the largest nickel producer in the world, responsible for around 40% of global supply. The government has also provided incentives to encourage battery manufacturers to set up in Indonesia, including the recently opened USD 1.1 billion joint

venture between Hyundai and LG Energy Solution. Through these measures, together with the local content requirements for EV manufacturers, the government hopes to create significant new employment along the entire value chain.

However further development of the EV value chain faces four serious constraints:

Environmental damage and human rights concerns. The huge expansion of nickel mining and processing in recent years has led to numerous allegations of serious environmental harm and worker and human rights abuses. These are damaging Indonesia's reputation and have significant implications for the expansion of the sector.

Access to international markets. In part because of concerns over environmental harm (and also because of a desire to exclude products resulting from Chinese investments), the US has not yet agreed to a limited Free Trade Agreement with Indonesia. The European Union is also going to implement a battery passport starting in 2027 which may make it difficult for Indonesia's batteries, and EVs using them, to enter the EU.

Fiscal pressures and the unpopularity of fossil fuel subsidy reform. The heavy involvement of the government in providing incentives for the entire EV value chain likely entails a significant fiscal cost. However, President-Elect Prabowo, who takes office in October 2024, has already made several, major fiscal commitments, notably for free school lunches across the country. The most obvious way of reducing the government's fiscal burden would be to reduce the USD 21 billion spent each year subsidizing energy. Increasing gasoline and diesel prices would also encourage a more rapid switch to EVs. But reducing subsidies is likely to be extremely politically unpopular.

Opposition from ICE interests. More than 99.9% of vehicles in Indonesia are ICE vehicles, overwhelmingly produced by Japanese manufacturers in Indonesia. While some of these manufacturers are exploring EV options, they do not wish their major investments in the ICE value chain to lose value. Consequently, they are alleged to be using their long-standing connections among the Indonesian elite and within government to promote an approach to emissions reduction that focuses on multiple fuel options e.g. hybrids, plug-in hybrids, fuel-cells vehicles, and ethanol-fuelled vehicles.

It is not yet clear how the EV sector will develop under a Prabowo-led government. In February 2024, Prabowo Subianto won the presidential election, with Gibran Rakabuming Raka as his running mate, the son of the current President Jokowi. Consequently, the most likely outcome for EV development is a continuation of existing policies, particularly if Jokowi and, the business interests around him, continue to have influence on the next administration. However, it also seems likely that Prabowo will place a much higher emphasis on the expansion of biofuels than has currently been the case, despite their significant costs. It seems almost certain that fiscal pressures will push the new administration to undertake some kind of reform of fuel subsidies, which could encourage a switch to EVs. It is much less clear whether the administration will be able to sufficiently allay environmental concerns, as well as restrictions on Chinese content, to enable access to US and European markets. Whether this matters, will depend both on the growth of the domestic market and the ability to access other markets, notably in China and India.

External partners can help develop the EV sector in Indonesia by: collaborating on knowledge generation and application; improving market access; supplying concessional finance; and supporting norms of sustainability and respect for human rights. In particular, external partners could:

- *Boost technical cooperation and knowledge exchange e.g. on how to expand charging infrastructure*
- *Enhance international visibility of environmental harms in the EV value chain and also boost the capacity of the government to tackle them*
- *Support a non-discriminatory multilateral trading system*
- *Engage with the Japanese government and Japanese ICE automotive manufacturers on the need to transition from ICE to fully electric vehicles*
- *Provide evidence on the costs of biofuel production*
- *Encourage and support locally-led campaigns for clean air*
- *Back fossil fuel subsidy reforms that both protect the poor and invest in the energy transition.*

Collectively such efforts could have a significant impact on the development and adoption of EVs in Indonesia.

1 Introduction

1.1 Background

E3G is carrying out a research project that seeks to understand the opportunities, barriers and risks to the energy transition in emerging economies where greater action is needed to limit global temperature rises and meet net zero goals.

Countries are currently preparing their next round of nationally determined contributions (NDC) plans as part of the UN climate process. Indonesia was identified as a priority country for the research project due to its participation in the JETP initiative, as well as its importance to meeting global climate goals – it is the 10th largest CO₂ emitter globally. In November 2023, the Comprehensive Investment and Policy Plan (CIPP) for the JETP was published which outlines the measures that should be taken to secure investment and move to the implementation phase of the JETP. However, the new government will have to balance a range of interests in implementing the JETP. Understanding their interests and constraints will be key to finding effective ways of supporting rapid implementation. The year 2024 presents a key window of opportunity for influencing policy since there were national elections for parliament and the presidency on 14 February 2024 which was won by Prabowo Subianto and Gibran Rakabuming Raka.

This research builds upon the premise that the main barriers to delivering change are no longer simply technical or economic but lie in unlocking political economy barriers to action and creating sustained political support for necessary reforms and effective delivery. The overarching goal of E3G's work in Indonesia is to create a shared understanding of the political economy context in which the energy transition in Indonesia is taking place to enable climate stakeholders to make more effective decisions. To achieve this, E3G undertook a **Political Economy Mapping (PEM)** using its Political Economy Mapping Methodology (PEMM) to assess progress on numerous different aspects of the energy transition in Indonesia. This is available separately from E3G. This was done in collaboration with Institute for Essential Services Reform (IESR) in Indonesia, who have conducted extensive research on the energy transition in the country.

However, another important component of Indonesia's energy transition is the decarbonisation of transport which is responsible for 16% of greenhouse gas emissions globally and the majority of air pollution in Indonesia's major cities. While there is some excellent technical work on transport sector decarbonisation, there has been relatively little work looking at the political economy of the decarbonisation of transport – and specifically the development of electric vehicles (EVs) in Indonesia.

To explore this further, E3G partnered with The Policy Practice, a consultancy which specialises in political economy analysis and which has extensive experience in Indonesia, to conduct a **Political Economy Analysis (PEA) of EV development in Indonesia**. This entailed a more detailed look at the underlying political dynamics that influence progress on the development of electric vehicles in the country. This project was also conducted in collaboration with the Institute for Essential Services Reform (IESR). This is the substance of this report.

1.2 Key questions

The core questions addressed by the PEA of EV development were:

- What are the current plans for the decarbonisation of the transport sector in Indonesia – and how might they change under the new government?
- What are the main political economy barriers to the decarbonisation of transport in Indonesia? And how are these shifting under the new government?
- What are other funders/external actors doing in this space? What are the implications of the PEA on EV development for the actions of external actors to support EVs in Indonesia?

1.3 Methodology

The project commenced with a desk review of the literature on the topic of EV development in Indonesia. This was then complemented by a series of in-person interviews with most of the key actors in the sector from 8-12 July 2024 in Jakarta, Indonesia. The interviews in Indonesia were conducted by a team of three E3G staff – who focussed on the wider PEM, Dr. Neil McCulloch of The Policy Practice, and four staff from IESR who supported both the PEMM and the PEA on EV development.

Having a group of eight researchers enabled the formation of three teams for interviews, with two focussed on the PEMM and one (consisting of the authors of this report) on the PEA. Overall, the three teams conducted 52 interviews, with the authors undertaking 22 interviews specifically on EV development. Respondents for the PEA included politicians, government officials from relevant ministries and State-owned Enterprises (SoE), industry associations, private sector, union leaders, journalists, think tanks and NGOs.

Interviews adopted a semi-structured qualitative format allowing a focus on the key political economy drivers and constraints to the sector, while allowing flexibility to explore new and interesting avenues of discussion. Interviews were confidential to allow respondents to speak about sensitive issues without fear of being named.

1.4 Structure of the report

The structure of this report is as follows:

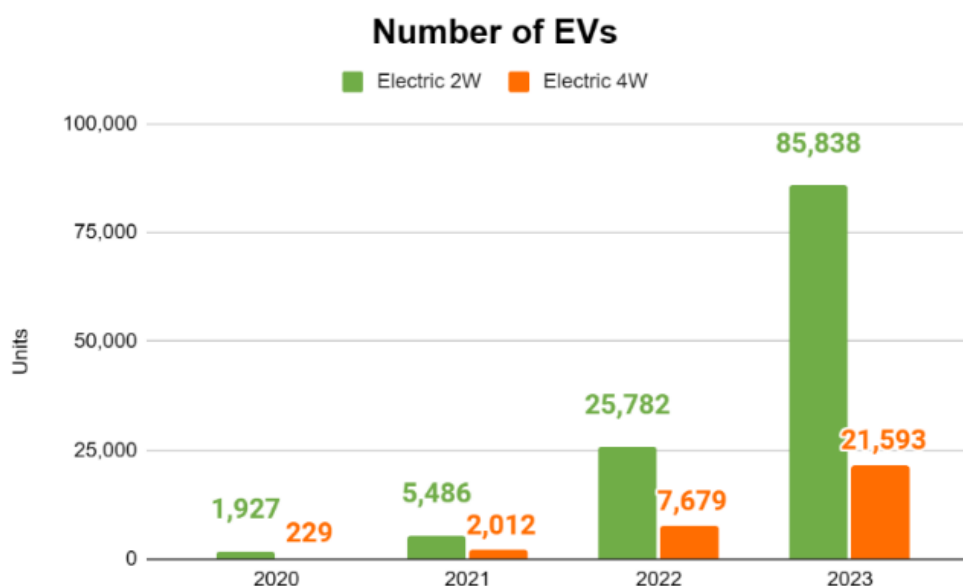
- **Section 2** provides a brief overview of EV adoption in Indonesia in recent years.
- **Section 3** outlines broader context factors that influence the development of the sector, including foundational factors (such as natural resources, demographic and economic factors and geographical and historical factors) as well as the formal and informal ‘rules of the game’ that shape the behaviour of actors in the sector.
- **Section 4** maps out the key actors and provides an assessment of their motivations based on the interviews.
- **Section 5** presents a set of scenarios about how the sector may evolve under the new government which will come into office on 20 October 2024.
- **Section 6** reviews the activities of external actors, such as multilateral and bilateral donors and international NGOs in the sector.
- **Section 7** provides a short set of recommendations for international actors wishing to support the development of EVs in Indonesia.

2 Overview of electric vehicle adoption in Indonesia

The government of Indonesia kick-started the adoption of electric vehicles with the enactment of Presidential Regulation 55/2019. Since 2020, there has been a remarkable growth in the use of EVs (Figure 1), but from an extremely low base. From a couple of thousand EVs in 2020 – overwhelmingly two-wheelers (2W) – the market has expanded rapidly with the result that, in 2023, there were more than 100,000 EVs, with around a fifth of these being four-wheel (4W) vehicles. The biggest leap comes from electric 2-wheelers (E2W), with a 1600% increase between 2021 and 2023. Similarly, adoption of electric 4-wheelers (E4W) has almost trebled each year from 2021.

In the mass transportation sector, EV adoption has relied on the adoption of electric buses by Jakarta’s TransJakarta bus company. It is aiming to be fully electrified by 2030, with a total of up to 10,000 buses. Currently, they have around 120 e-buses. Other big municipalities, such as Surabaya, Medan and the Province of Bali also operate several buses under Ministry of Transport’s Buy the Service (BTS) scheme, but the overall fleet size is still very small.

Figure 1: EV adoption status in Indonesia (IESR, 2023b)



Until very recently there were only a handful of 4-wheeler EVs for sale in Indonesia, dominated by models from two companies, Hyundai from South Korea, and Wuling from China, both of which have manufacturing facilities in Indonesia. However, other manufacturers are reported to have started production of EVs in Indonesia, including Mitsubishi, Chery, and DFSK. Stellantis’s Citroen and China’s GWM are also reported to be planning major investments (Foreign Policy, 2024a). Two other Chinese EV giants have committed to establishing factories in Indonesia. GAC Aion is set to build a factory with an initial capacity of 100,000 units per year, while BYD plans to invest \$1.3 billion in a manufacturing plant, aiming for an annual production capacity of 150,000 units. A recent trip by the Ministry of Industry to China saw the commitment of several companies to use Indonesia as a manufacturing hub for EVs for the

region (Jakarta Globe, 2024). Overall, CMMI report that there are now 10 brands of E4W and a total of 23 models in the market.

Recent studies suggest that the EV market in Indonesia has enormous potential. A study by AC Ventures – with high-profile forwards from the Coordinating Minister for Maritime and Investment, Minister of Transportation and, the Minister of Industry among others – points to a \$20 billion potential market (AC Ventures & AEMIL, 2023). To realize that potential, very ambitious targets have been set for the sector reflecting the strong political commitment under the current government to grow the sector. Table 1 shows the targets from a variety of sources.

Table 1: Targets and realisation for EVs in Indonesia (Source: various)

Source	Milestone (year)	E2W		E4W	
		Targets	2024 (May) realization	Targets	2024 (May) realization
Ministry of Industry roadmap	2025	6 millions units produced	100,000 units produced (up until May 2024) (CNN Indonesia, 2024)	400,000 units produced	15,318 units produced (2023 only) (Gaikindo, 2023a)
	2030	9 million units produced		600,000 units produced	
	2035	12 million units produced		1 million units produced	
NDC	2025	1.8 million stock of vehicles/adoption	85,838 stock of vehicles/adoption (up until 2023) (IESR, 2023b)	400,000 stock of vehicles/adoption	21,593 stock of vehicles/adoption (up until 2023) (IESR, 2023b)
	2030	13 million stock of vehicles/adoption		2 million stock of vehicles/adoption	
Coordinating Ministry of Maritime and Investment	2030	10% of sales	4.45% of sales	10% of sales	5.25% of sales

The Ministry of Industry targets are for the production of EVs. They aim for a total of 6 million E2W to have been produced in Indonesia by 2025. They also anticipate that production will be ramped up so that 3 million E2W will be produced every five years subsequently, leading to targets of 9 million in 2030 and 12 million in 2035. For E4W, the Ministry of Industry targets a total production of 400,000 by 2025, with a further 200,000 produced up to 2030 and further 400,000 by 2035.

EV targets can also be derived from Indonesia's Nationally Determined Contribution commitments under the Paris Agreement (Government of Indonesia, 2022). To achieve the emissions reduction targets in transportation, Indonesia would need to have a stock of 1.8 million E2W on the road (sometimes called 'adoption') by 2025 and 13 million by 2030; it would require 400,000 E4W and 2 million by 2030 (IESR, 2023a). Note that these targets are

adoption of EVs i.e. the stock of EVs being used in the country, not the production of EVs. Finally, the Coordinating Ministry for Maritime and Investment (CMMI), the lead ministry in charge of EV strategy, has set a target of EVs being 10% of vehicle sales in the country by 2030.

However, Table 1 also shows the extent of progress towards these targets. As shown in Figure 1, the total number of EVs in the country was only a little more than 100,000 in 2023 and many of these will have been imported rather than domestically produced. Production capacity is now ramping up rapidly; our estimate, based on commitments as of May 2024, is that there is capacity to produce around 1.4 million E2Ws each year and a further 80,000 E4Ws. Even with this enhanced capacity, it is highly unlikely that Indonesia will have produced 6 million E2Ws and 400,000 E4Ws by 2025 (Bisnis, 2023; Kompas, 2023). Whether the production targets for 2030 and 2035 are feasible will depend on the speed of increase in production capacity.

Similarly, the NDC targets for adoption of EVs appear far out of reach. It seems unlikely that adoption of E2Ws will increase 10-fold within the next 18 months; E4W adoption would have to increase more than 15-fold in the same period to meet the target.

The ambitious targets which have been set for EVs – and the scale of the challenge to meet them – reflect two important aspects of the challenge of EV development in Indonesia.

First, the fact that the targets are so ambitious is a direct reflection of the political priority which has been placed on the sector. This is relatively new. When the National Plan for Energy was written in 2017 through Presidential Regulation no. 22/2017, the target for electric cars was 2,200 by 2025.¹ The last five years has seen a dramatic shift with a strong policy priority being put on the development of the entire EV eco-system. A key question is whether this emphasis will persist under the government that will take office in October 2024.

Second, the difficulty in meeting the targets reflects both the extreme uncertainty in situations of exponential growth (adoption of EVs has roughly trebled every year for the last three years – a shift either down to doubling or up to quadrupling has a huge impact on achievement). However, it also reflects the challenges of starting a new industry virtually from scratch. The EV industry in Indonesia is extremely small relative to the existing automotive industry. In 2023, there were 128 million motorcycles, 19 million passenger cars and 5 million trucks and buses (Gaikindo, 2023b). Thus the number of EVs is currently around 1/1000th of the number of ICE vehicles. This both demonstrates the potential for expansion of EVs, but also the challenge that EVs face in a market dominated by companies manufacturing ICE vehicles.

3 Factors influencing EV development in Indonesia

This section analyses the factors influencing EV development in Indonesia by looking at three issues:

First, we explore the Foundational factors that influence the overall environment faced by all actors in the field. These are fixed or slowly moving aspects of the context but which have a bearing on the incentives faced by all the key players.

Second, we examine the “institutions” that influence the EV eco-system. By this we mean the formal laws, regulations and policies which have been passed to promote EV development.

¹ Although there was an equally unrealistic target of 2.1 million E2W by 2025 as well.

However, we also draw on our interview material to discuss some of the informal “rules-of-the-game” i.e. understandings and norms of behaviour that influence outcomes for EV development.

Third, we map out the key actors in the EV eco-system and draw on our interviews to elaborate on the motivations that may drive their behaviour.

Collectively, this analysis helps to explain why EV has made rapid progress, as well as some of the ways in which it is constrained.

3.1 Foundational factors

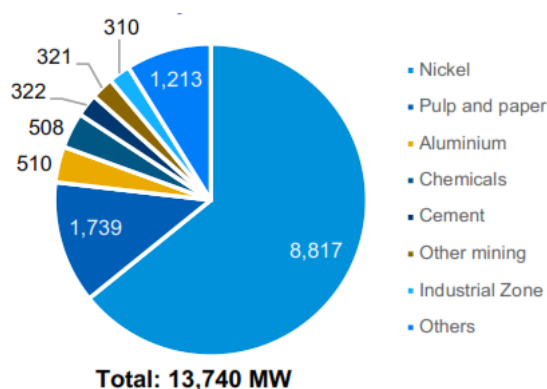
There are three, inter-related foundational factors that have a major influence on the development of the EV market in Indonesia: natural resources; demographic and economics factors; and geographical and historical linkages. We examine each in turn.

3.1.1 Natural resources

Perhaps the most important foundational factor affecting EV development is the abundance of nickel and other key minerals required for battery development in Indonesia. With 4.5 billion tons of reserves, Indonesia has the largest nickel resource in the world and is the single largest producer of processed nickel. It also has numerous other minerals resources important for the EV value chain such as cobalt and manganese (APNI, 2024). Industrialisation through nickel “downstreaming” (i.e. processing) – and building a global EV hub leveraging the (hoped for) lower cost of batteries – is a central part of the current government’s strategy.

However, nickel is not the only natural resource that matters. Nickel processing is enormously energy intensive. Indonesia has one of the largest deposits of coal in the world. This provides an easily available source of ‘cheap’ electricity for nickel processing.² To indicate the importance of this resource, Figure 2 shows the breakdown of captive Coal Fired Power Plants (CFPP) in Indonesia.

Figure 2 Captive CFPP Breakdown by Industry



(Source: ADB, 2023)

² Of course, this characterization does not take into account the environmental harm caused by burning coal.

Indonesia has around 13.7 GW of captive CFPPs in operation, of which 64% (8.8 GW) is used to process nickel (ADB, 2023). As a result, in 2023, almost 40% of global nickel refining took place in Indonesia and the IEA predict that this share will increase to almost 60% by 2040 (IEA, 2024).

3.1.2 Demographic and economic factors

Another key foundational factor relates to Indonesia's economic and demographic development. Indonesia is a large and rapidly growing economy with a huge population. In 2022, the population was 275 million people – the fourth largest country in the world. When measured in Purchasing Power Parity terms, Indonesia's GDP is USD 4.72 trillion, the 7th largest in the world (IMF, 2024), above that of the UK and France. With the exception of the East Asian crisis and the fall of Suharto in 1997/98 and the COVID years, Indonesia's economy has grown at around 5% per year since the 1970s.

The Indonesian government is pursuing a strategic plan entitled Indonesia Emas 2045 or Golden Indonesia 2045. This is a vision to transform the country into a highly developed nation by the centenary of independence in 2045. This objective encompasses economic, social, political and environmental goals with indicators including the human development index, GDP and global industry competitiveness.

The consequence of Indonesia's growth is that it now has a large middle class of around 52 million people – almost 20% of the population (World Bank, 2019).³ This group can afford to buy durable goods such as cars and motorcycles. Indeed, 9% of the total consumption expenditure of upper middle-class households is spent on vehicles. Indonesia's large population combined with its growing income means that the vehicle market – including that for EVs - is also large. The government therefore views the EV market as a potential source of growth and employment. This is of particular importance give the decline of some traditional sectors, such as textiles, as well as recent job layoffs in the tech sector.

3.1.3 Geographical and historical factors

The final set of foundational factors that influence the development of the EV market are geographical and historical.

The geographical factors are both national and international. Within Indonesia, the population is not only very large, but also heavily concentrated, particularly in the island of Java where more than half Indonesians live. And, within individual islands, the population is heavily concentrated into urban areas. In 2023, 58.6% of the population lived in urban areas or cities (Statista, 2024a). This provides a strong and growing demand for personal transportation.

Geography also matters internationally. Indonesia is the giant of South-East Asia and sits within a complex web of commercial trading relationships across the region. Historically, it has had close relations with China and these diplomatic ties continue to play a crucial role in Indonesia's economic development. The Joko Widodo (Jokowi) administration has strengthened further the economic and diplomatic relationship with the People's Republic of China which has resulted in a large flow of inward investment. In 2023 alone, China made

³ The report defines the middle class as a group of economically secure Indonesians with little chance of falling into poverty, earning between IDR 1.2 million and IDR 6.0 million per person per month (US\$75-383 per person per month).

approximately USD 7.3 billion investment in Indonesia (ASEAN Briefing, 2024). Almost all of the major investments in EV manufacturing have come from the region, notably China (Wuling, Neta, Chery, DFSK, GWM, BYD, GAC Aion) and South Korea (Hyundai), while almost all the investment in traditional ICE vehicle manufacture has come from Japan (Toyota, Daihatsu, Mitsubishi, Honda, Yamaha, Kawasaki, and Suzuki). As the same time, the region also provides intense competition for investment in EV manufacturing. Thailand has the largest automotive manufacturing industry in the region, producing 1.8 million motor vehicles in 2023 (compared to Indonesia's 1.4 million) (Statista, 2024b). It, as well as other countries in the region such as Malaysia, are also trying to become hubs for EV manufacturing.

3.2 Rules of the game

While the foundational factors above influence the overall environment for EV development in Indonesia, it is the “institutions” – in the sense of the “rules of the game” – that determine what actually happens on a day-to-day basis. We divide our discussion of the rules of the game around EVs into two sections. First, we discuss the formal legal and regulatory environment that has been put in place to encourage the development of EVs in Indonesia. Second, we discuss the *informal* rules of the game i.e. the tacit understandings and norms that shape the behaviour of actors in this space.

3.2.1 The formal legal and regulatory environment for EVs

Since the enactment of Presidential Regulation 55/2019 to encourage the development of EVs, there has been a steady stream of policies issued to support and regulate the sector. The key formal policies include:

Incentives for up-front costs

One of the most prominent policies regulates the incentives to discount E2W and E4W upfront costs (Minister of Industry (MoI) Regulation No. 21/2023 for E2W and Minister of Finance Regulation (PMK) No. 8/2024 for E4W and e-buses). High upfront cost has been one of the main barriers of EV adoption since the industry started in 2020. The incentive for E2W is intended to make the price range for an entry-level E2W (1.5 kWh), which is around IDR 20 million after applying the incentive, similar to that of comparable ICE 2-wheelers (typically IDR 18 million).

Unfortunately, the uptake of this incentive has been relatively limited. Out of 62,000 E2W sales in 2023, only 11,000 utilized the IDR 7 million incentive on offer (PT Surveyor Indonesia, 2024; *Sosialisasi Kebijakan Insentif Dalam Rangka Percepatan Investasi KBLBB*, 2024). There are several potential reasons for this. First, there was a roughly six-month gap between the announcement of the incentive and the policy being implemented. Even after the implementation of the policy, the initial eligibility requirements for the incentive were regarded as restrictive, as buyers had to be recipients of the Social Assistance program or live in households with a 450 VA electricity connection. Such households are typically poor and therefore unlikely to have the capital to purchase a E2W. It took several months for these requirements to be revised through Ministry of Industry (MoI) Reg. No. 21/2023 which made it open to all citizens with a national identity (ID) card (limited to one allocation per ID card).

Tax incentives and local content requirements

The government has also introduced a range of temporary tax reductions and exemptions designed to reduce the overall cost of EV ownership. These include such as luxury tax exemptions, and cheaper annual vehicle tax and vehicle title transfer fees (Table 2 provides a summary).

Table 2: Tax reductions and exemptions for EVs

Tax	Nature of incentive for EV	Eligibility and conditions
Luxury tax (PPnBM)	Exemption for EV cars from luxury tax (which can range from 10-125% depending on engine size and body type)	For manufacturers to produce EVs in Indonesia with a minimum of 40% local content (rising to 60% in 2027). Only applies until the end of 2024.
VAT (PPN)	Reduction from 11% to 1% for EV cars	As above. Only applies until the end of 2025.
Import tariff	Zero import duties for EV cars both Completely Knocked Down (CKD) and, now, Completely Built Up (CBU) EVs	As above and subject to the provision of a bond for the duties forgone which is reduced, pro-rata, when local manufacturing commences. Only applies until the end of 2025.
Vehicle tax (PKB)	Exemption from annual vehicle tax of 1.2 - 10% of the vehicle's value	All EVs
Title transfer fee (BBNKB)	Exemption from the maximum 12-20% tax that is paid to change ownership when a vehicle is sold	All EVs

Source: a wide range of government regulations – see Annex 1 for full details.

Notes: PPnBM: Pajak Penjualan atas Barang Mewah (Sales Tax on Luxury Goods); PPN: Pajak Pertambahan Nilai (Value-Added Tax); PKB: Pajak Kendaraan Bermotor (Motor Vehicle Tax); BBNKB: Bea Balik Nama Kendaraan Bermotor (Vehicle Title Transfer Fee).

Many of the tax exemptions and incentives come with associated eligibility conditions. In particular, the government is attempting to encourage the development of local manufacturing of EVs by linking import tariff exemptions to relatively strict local content requirements (LCR – or *Tingkat Kandungan Dalam Negeri/TKDN*). As the level of local content is scaled up over time, in accordance with the regulations, EV Original Equipment Manufacturers (OEMs) are incentivized to increase sourcing within the country to continue to be able to meet the LCR and thereby access government's incentives.

Initially, the government insisted on 40% local content for tariff free access with the result that only Hyundai and Wuling entered the market. However, our interviews indicated that, more recently, the government has shifted its position. In an attempt to expand the overall size of the EV market as well as the range of electric vehicles for sale, OEMs are now able to import completely built up (CBU) cars and still receive luxury tax exemptions even without meeting the LCR. In return, they have to provide a guarantee equal to the tax exemption and to commit, within a set period, to *produce* the same number of cars that they imported with the same or better specification by the end of 2027 at the latest. As they do so, their tax obligation is reduced proportionally, but if they fail to do so, then the guarantee may be called requiring the importer to pay the tax that was exempted. To produce such vehicles, they can either build

their own plants or cooperate with existing OEMs in the country, although, a senior government official indicated that these vehicles will not be necessarily be sold domestically.

One of the concerns expressed by some manufacturers is whether, going forward, the local content requirements might start to stifle the development of the sector.⁴ The regulation currently requires manufacturers to shift from 40% local content to 60% local content by 2027. The main cost of an EV is the battery. While it is possible to manufacture EVs with 40% local content using imported batteries, a shift to 60% local content will effectively require manufacturers to source batteries locally.⁵ Indonesia's first car battery factory opened in 2022 and others are planned, but it is not clear whether the output from these factories will be sufficient for the local EV market at a price that will enable EVs to be competitive. There may be a trade-off between using LCR to stimulate the growth of the EV market and the use of the same policy to enhance the demand for the output of new battery factories. While there is strong support in government for using LCR to encourage local manufacturing, there is also concern that an overly rapid move to very high levels of local content might slow the development of the sector.⁶

Vehicle conversion

To boost further adoption of E2Ws, the Indonesian government has also introduced a retrofitting (conversion) program. Through MEMR Reg. No. 3/2023, government gives IDR 10 million subsidy for conversion of 100 – 150 cc motorcycles to EV. The most basic conversion costs around IDR 15 million, hence consumers only need to pay IDR 5 million to retrofit. Without the retrofit subsidy, consumers are more likely to prefer to get a brand-new ICE 2W starting at around IDR 18 million. A comparable E2W starts at around IDR 27 million, but thanks to IDR 7 million price subsidy, the price is IDR 20 million, similar to the cost of the ICE vehicle.

The initial phase (2022) of the conversion programme targeted official institutions such as government ministries and the police. However, the roll out of this programme to the general public has stalled for the several reasons. For example, converted E2Ws have a shorter warranty period, ranging from 6 months to 1 year. Also, converted E2Ws originally had to be certified at the Ministry of Transport's testing sites in Jakarta and Bali (which added hidden costs and waiting time).⁷ Although significant savings can be made from switching,⁸ it would appear that the complexity, cost and delays of EV conversion still appears to outweigh its benefits.

3.2.2 The informal rules of the game around EVs

While the formal rules and regulations relating to EVs are important drivers of behaviour, they are not the only rules that influence behaviour. During the course of our interviews, we noted

⁴ See also Sullivan (2024) on local content requirement policies.

⁵ Especially when the weight of battery was increased in the latest LCR revision, from initially 30% of vehicle Main Components in the previous regulation to 40% of vehicle Main Components in MoI Regulation No. 28/2023.

⁶ For more on local content indicators for EVs, see IESR (2023a).

⁷ We understand that the MoT has now added testing facilities for conversion motorbikes at its offices across all provinces and cities.

⁸ The total cost of ownership (in IDR/kilometer) for a vehicle that does 40,000 km is IDR 583/km for a converted E2W; IDR 794/km for a new E2W; and IDR 857/km for a conventional ICE 2W (IESR, 2023a).

a range of understandings, norms, and mindsets – informal rules of the game – that appear to have a significant impact on how different actors in the EV space behave.

EVs provide a clean, green counter-narrative to the environmental and labour challenges associated with nickel mining and processing

The current government's commitment to the development of EVs is considerable. There are many good reasons why the government may wish to pursue this including stimulating growth, investment, job creation and technological upgrading. However, it is notable that one of the narratives consistently used by the government is the opportunity arising from Indonesia's vast nickel resources. On the face of it, this appears logical – Indonesia's large nickel reserves could provide access to cheap nickel which could then provide cheap batteries thereby enabling cheap EVs for the nation. This linkage is constantly reinforced by Indonesian policymakers.

In fact, there is no necessary link between nickel reserves and the growth of the EV sector. Norway has 80% adoption of EVs and produces virtually no nickel. Indeed, the majority of Indonesian nickel is used for making steel, not for making batteries or pre-cursors for the EV industry, although the latter is increasing (Trinanda, 2023). However, in recent years, billions of dollars have been invested in nickel mining and processing plants in Indonesia, predominantly by Chinese companies, often with close linkages to leading Indonesian political and business elites (Multituli, 2023). These investments have enabled Indonesia to dominate the global nickel market – Indonesia produced 40% of the world's nickel in 2023 (S&P Global, 2024). However, the huge expansion of nickel mining and processing is creating considerable environmental damage and leading to allegations of the abuse of worker and human rights (CREA & CELIOS, 2024). By contrast, the narrative around EVs is modern and green. EVs are technologically advanced and a way of reducing greenhouse gas emissions which are causing climate change. It may therefore be that part of the rationale for the government's strong emphasis on EVs is to provide a much more appealing and greener narrative for the lucrative, but highly environmentally damaging and controversial expansion of nickel mining and processing in the country (Wijaya and Sinclair, 2024; Project Multatuli, 2024).

Don't touch ICE

A second informal rule relates to the sensitivity regarding the ICE vehicle sector. While there have been numerous regulations providing support for EVs, none of these regulations have in any way discouraged the use of ICE vehicles. ICE vehicle manufacturing is a major industry in Indonesia with deep roots into the political and business elite. More than 99.9% of vehicles are ICE vehicles and so EVs are not really regarded as a threat by traditional players. But there is an unwritten rule that, regardless of what is done on EVs, no steps should be taken that might hurt the ICE vehicle sector. As one senior industry spokesperson put it when asked about switching to EVs "If you switch tomorrow, you will eliminate 1.5 million jobs".

While the informal rule dictates that nothing should hurt the ICE vehicle sector, we were told by a number of sources that ICE vehicle manufacturers are deliberately hampering the development of the EV sector. For example, EV manufacturers typically try to source non-electrical component from component manufacturers who have large contracts with ICE vehicle manufacturers. We heard of instances in which component manufacturers refused to supply to EV manufacturers for fear of disrupting their commercial relationship with large ICE vehicle manufacturers.

The consequence of this informal rule to protect the ICE vehicle industry is that the government is pursuing a “multi-fuel” approach to the decarbonisation of transport (Adhiguna, 2023). Rather than seeking to phase out ICEV, the government, together with industry, is encouraging the development of hybrid vehicles, plug-in hybrids, and fuel-cell vehicles. While there is no question that such vehicles are more fuel efficient than traditional ICE vehicles (ICCT, 2023), this approach also allows traditional ICE manufacturers to keep their existing production lines in place, even as the risk of perpetuating ICE vehicles for far longer than is consistent with Indonesia’s transport emissions reduction targets.

Reducing import dependence ... but sensitivity on fuel subsidies

Another key informal rule relates to a sensitive topic which is typically avoided but which has a major bearing on the development of EVs – fuel subsidies. Indonesia has huge energy subsidies amounting to IDR 339.6 trillion in 2023 (around USD 21 billion) (Kontan, 2023). Around two-thirds of these are subsidies for gasoline and diesel. Cheap gasoline and diesel provide a strong incentive for consumers to continue to use ICE vehicles rather than switching to EVs. However, subsidy reform is sensitive and controversial. As an example, in July 2024, the Coordinating Minister for Maritime and Investment, Luhut Pandjaitan, one of the most influential ministers in the government suggested that, from 17 August 2024, subsidised fuel would be restricted to the poor (The Jakarta Post, 2024b). Yet, within a few days, the Minister of Energy stated that there would be no such restriction (Indonesia Business Post, 2024).

One of the reasons for a renewed focus on subsidy reform is the worsening air quality in Indonesia’s major cities which is becoming a political concern. The poor quality of air is largely due to emissions from the transport sector. This, we were told, is not due to poor vehicle emissions standards, but rather because the quality of fuel used in Indonesia is extremely poor. The Euro IV standards for cars, adopted by Indonesia, require sulphur content of less than 50 parts per million (PPM). However, subsidised gasoline in Indonesia has a sulphur content of over 500 PPM; biodiesel has 2500 PPM, while regular diesel has 3500 PPM. Upgrading to better quality fuel would require importing better (and more expensive) fuel, or a major upgrade to Indonesia’s refineries. One senior official suggested that a fossil fuel subsidy reform could help to pay for this, leading to better air quality.

Because subsidy reforms lead to price rises and often to protest – sometimes violent – the government is extremely cautious about pursuing such reforms. However, while subsidy reform remains sensitive, the government is also committed to trying to minimise fuel importation. Most of Indonesia’s fuel is imported (Reuters, 2023), and this is considered a risk to energy security as well as a drain on foreign exchange. By making fuel cheaper, fossil fuel subsidies increase fuel imports. Thus, the reform or removal of fossil fuel subsidies would both stimulate the market for EVs and reduce fuel import dependence. Yet, for the most part, the issue is ignored (or quickly shut down if raised). As another government minister put it “Subsidies is a very political thing.”

4 Key stakeholders in Indonesia's EV industry

To understand the role of politics in the EV sector in Indonesia, it is necessary to understand the key actors, the incentives they face and the ideologies or mindsets that drive their behaviour. One can then map these actors in terms of their support (or opposition) to the development of the sector and the extent to which they have influence over the process.

In the course of five days of interviews, we met with representatives of almost all the key actors in EV sector and had an opportunity to ask them about their views about the functioning of the sector and the reasons for the challenges it faces. In addition, we asked respondents about their views of other actors and their motivations. By triangulating between the different responses and assessing the evidence for the views expressed it was possible to construct a holistic picture of the key motivations driving the behaviour of the key actors in the sector.

To reflect the complexity of different motivations that drive behaviour, we examined five different aspects of motivation for each actor:

Objectives: We asked each actor what they were trying to achieve i.e. the overall objective that they are aiming for. We also asked other respondents what they felt were the true objectives of other actors in the sector.

Ideas/Mindset: Sometimes actors have different ideas or mindsets about an issue. These ideas matter because mindsets can be an important driver of behaviour and can also help to explain when actors appear to act against their own best interests.

Interests: A key driver of behaviour are the interests that each actor has. We asked about who benefited and who lost from the way in which the sector currently operated and how they would be affected by potential changes.

Capabilities: Actors not only have different responsibilities, but also widely varying capabilities. We assessed, in general terms, the ability of each actor to take different types of action (or to prevent other actions from happening).

Power: Finally, we assessed qualitatively, based on the views of respondents, the extent and nature of power which the actor has.

Table 3 briefly summarises the key motivations of each of the main actors below, drawing on evidence from the interviews.

Table 3: Actors in the Indonesian EV sector and their motivations

Actor	Key Motivations (Objectives, Ideas, Interests, Capability, Power)
President	President Jokowi has been a champion for EVs and has provided considerable political support for the project. He is a strong believer in investment and industrialisation as the path for development. This also aligned with his interest in rewarding the key elites that form his government. His ability to kick start the process with a presidential regulation and his choice of highly competent people from the investment world to lead the initiative reflects his power to appoint and direct public resources. A key question, going forward, will be whether President Prabowo will share these same motivations.
CMMI	Minister Luhut Pandjaitan, who leads CMMI, has been one of the most influential ministers in the Jokowi administration. He shares a business and investment mindset, which also aligns strongly with his major interests, particularly with downstream processing of minerals. CMMI, has strong capabilities and significant power that shapes and drives the development of EVs. Whether the ministry will play the same role and have the same influence under President Prabowo remains to be seen.
Ministry of Industry	Formally, the Ministry of Industry follows the instructions of the President and CMMI. It has a highly nationalist and mercantilist mindset, with a strong focus on Local Content Requirements as the tool to drive domestic industrial development. Its interests with EVs are somewhat conflicted: the ministry has traditionally be closely associated with Japanese ICE auto manufacturing, but it is now being pushed to support EV manufacturing. It has the power to block initiatives and to add costs but is subordinate to demands of CMMI and the President.
MEMR	MEMR is not a major actor in the EV sector, focussing more on oil and gas, coal, electricity and renewables. Its ideology is focussed on energy security (and self-sufficiency). In this sense it is supportive of EVs since expansion of EVs would reduce fuel importation. But it is also likely to be concerned about the potential cost implications for PLN. The new head of the New and Renewable Energy Directorate is a strong proponent of hydrogen and MEMR more broadly is therefore likely to be a supporter of a multi-fuel approach to emissions reduction in transportation. As with Industry, it has power to determine the speed of progress but is sub-ordinate to CMMI and the President.
PLN	PLN's objectives are focussed on meeting the growing demand for affordable electricity throughout the country. It has complied with the President's instruction to roll out charging stations, but probably does not see this as its core business. It welcomes EVs primarily as a means of absorbing surplus power. However, it is likely to be concerned over the cost of developing a network of charging stations given its difficult financial position and the need to provide low tariffs. It has strong technical capabilities, but less political power than the ministries.

Ministry of Finance

The Ministry of Finance’s objective is to manage the nations fiscal resources. Its mindset is therefore one of ensuring the best use of resources and minimising unnecessary outlays. Given that the development of the entire EV eco-system has entailed significant fiscal incentives, it is possible that the Ministry may be somewhat opposed to further rapid development if this requires further subsidies. However, a more pressing concern going forward may be President-elect Prabowo’s plans for large-scale expenditures in other areas e.g. free school meals. The Ministry of Finance may therefore be in favour of further expansion of EVs if, and only if, this provides a means of achieving a substantial reduction in fossil fuel subsidies. The Ministry has strong financial capabilities and is politically powerful. The recent appointment of Prabowo’s nephew as a Deputy Minister has led to doubts about whether it will retain the independence that it has enjoyed under President Jokowi.

Ministry of Transport

The Ministry of Transport is a functional and technical ministry. Its main interest is the smooth functioning of the transportation systems and the implementation of major transport projects. It therefore plays a key technical role on the decarbonisation of transport generally, particularly public transport, as well as the roll out of charging infrastructure. However, beyond its technical capabilities, it has less political power than other ministries in the sector.

Provincial governments

Most provincial governments have no real interest in EVs and are not taking initiatives to support them. Indeed, some provincial governments may be discouraged from providing incentives for EVs when these entail reductions in taxes that form part of the provincial government’s income. Nonetheless, a couple of Provincial government are taking a strong lead in promoting EVs, notably Jakarta and Bali, as well as the cities of Surabaya and Medan. Most of the interest in these cities is in electrifying public transportation. The interests of these governments is to capture subsidies and incentives from the central government to pursue these objectives and to project a modern image to voters, as well as to lessen air pollution. The fiscal capacity of these local authorities is higher than other provincial governments, but their political power depends on the relationship between the Governor and the national authorities.

EV manufacturers

EV manufacturers obviously have strong technical and engineering capabilities and an interest in manufacturing and selling EVs. There may be a difference in interests between foreign manufacturers who primarily wish to export to Indonesia and those that wish to use Indonesia as an export hub for EVs. The political power of EV manufacturers lies primarily in the volume of investment that they bring, as well as their close linkages with key elite factions of the government.

ICE manufacturers

ICE manufacturers are dominated by Japanese companies and their Indonesian affiliates. Their aim is to promote ICE vehicles and an approach to emissions reduction that focuses on multiple fuel options e.g. hybrid EV, plug-in hybrids, fuel-cells vehicles, ethanol-fuelled vehicles and the like. All of these entail the continuation of their existing, large ICE automotive factories in the country. They have a strong interest in not being displaced by EVs and in arguing for similar incentives. They have historical strong connections among the Indonesian elite and within government.

Battery manufacturers

Battery manufacturers wish to draw on Indonesia's growing downstream processing of nickel to build battery cells. They therefore have a strong interest in policies that incentive the production of the pre-cursor chemicals that are required for battery construction. They also have an interest in a guaranteed market and so are likely to welcome efforts to push EV manufacturers to purchase batteries locally. As with other parts of the chain, their political influence depends on close linkages with Indonesia's political elite. The heavy involvement of SoEs, notably the IBC, provides them with significant influence of policies that affect them directly.

Upstream nickel interests

Upstream nickel interests include both nickel miners and those processing nickel ore into chemicals required for batteries. These groups have received substantial political and policy support in recent years resulting in billions of dollars of investment. Their interests are closely inter-twined with key Indonesian conglomerates and elites who are joint venture partners in many mining and processing activities, including currently serving ministers and their relatives. Their interest in EVs depends on the extent to which nickel mining and processing is actually directly towards the EV industry.

Environmental CSOs and Trade Unions

Environmental organisations have conflicting positions on the development of the EV industry. Those concerned with environmental damage and human rights abuses are strongly opposed to the huge expansion of nickel mining and associated processing. Those more concerned with climate action, are generally supportive of the development of an EV industry, while wishing environmental and labour standards to be better. Labour unions are frustrated about the lack of information about how the transition will affect workers and their lack of inclusion in policy processes. The main power of CSOs is through bringing international exposure to the environmental damage caused by upstream nickel mining and processing; while the main political power available to unions lies in their ability to mobilise workers in existing ICE industries to avoid job losses.

Citizens

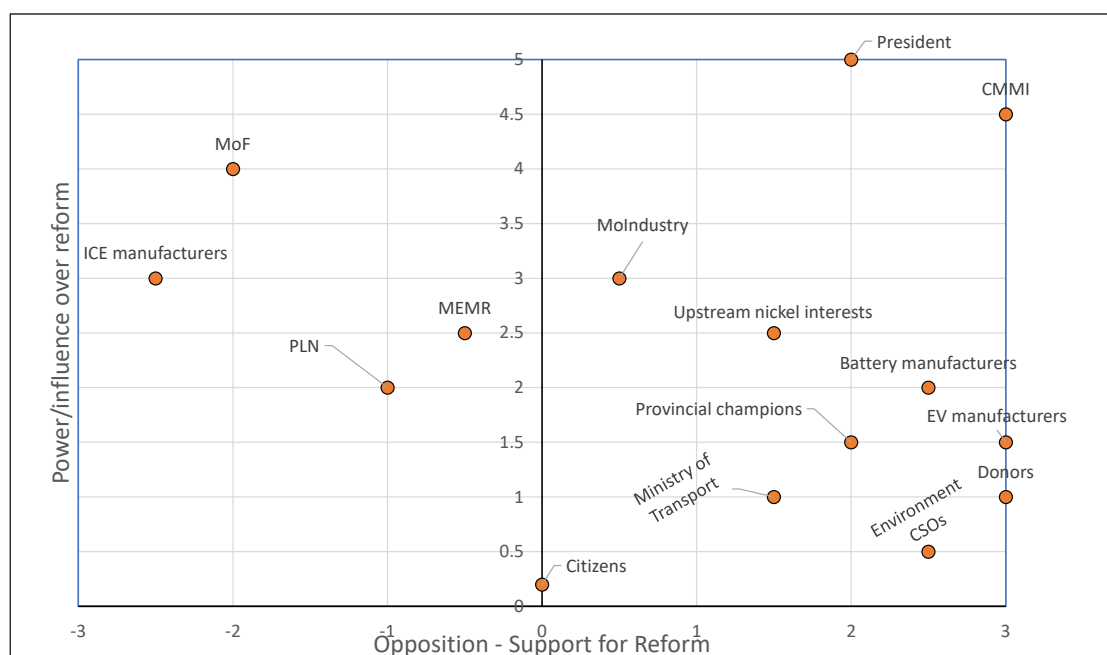
Most ordinary Indonesian citizens do not have strong views about EVs. Their primary interest is being able to access the transport options most relevant to their lives. EVs are regarded as modern and advanced, but also as extremely expensive and a risky option given the lack of certainty about range, resale values and charging infrastructure. Their influence over policy is minimal, but they have a strong influence over policies that raise prices e.g. subsidy reform, through the electoral system.

Donors

Foreign donors (e.g. World Bank, ADB and others) have a range of motivations. Most have a technical, internationalist mindset and strong technical and financial capabilities. As such, they provide support to the government for the energy transition, including the development of policies to expand adoption of EVs (see section 6 for more details on donor activities). However, donor funding is not a large share of the Indonesian government's resources and so donors have a relatively limited influence over the development of key, politically sensitive policies.

Given the various motivations of the key actors in the EV sector outlined above, we can construct the stakeholder mapping shown in Figure 3. The horizontal axis indicates support or opposition for the expansion of EVs in Indonesia. The vertical axis indicates the level of power or influence over the processes that determine EV development. The placement of each of the actors on the mapping is based on the judgement of the authors taking into account the literature and the qualitative interviews conducted. This means that the mapping is subjective and the precise positioning of any individual actor relative to another should not be given too much weight. The aim is to provide an overall picture of support or opposition to the development of EVs and to understand how that might change over time.

Figure 3: Mapping of the influence and support for EV development in Indonesia



Four interesting features emerge from the mapping in Figure 3. First, the majority of stakeholders are supportive of EV development. Only four of the 15 stakeholders are likely to resist further EV development, and three of these are government ministries or SOEs who would have to comply with any agreed government position. This bodes well for the sector. The main actor likely to resist, or at least to deflect, the current focus on battery EVs are the existing ICE vehicle manufacturers.

Second, while the majority of stakeholders support EV development, most of those that are supportive are less influence in the process than the handful that oppose. Opposition by the Ministry of Finance, PLN and MEMR, combined with the deep networks of the predominantly Japanese ICE vehicle manufactures are a strong lobby. However, the positions of some of these actors might change. For example, the Ministry of Finance may be concerned about the size of incentives it needs to provide for EVs; however, if the provision of these incentives provides a rationale to significantly curtail fuel subsidies, it may support further development of the sector. Similarly, the position of the Ministry of Industry is in a position where to must both support existing large auto industries as well as implement the current directives for the development of the EV industry (we have therefore indicated its position as moderately positive, but this could change).

Third, the subnational governments also contribute to the EV development, although mostly through non-fiscal incentives. Bigger provinces like Jakarta and Bali are leading the way through incentives like odd-even traffic exemption, EV only zones and dedicated parking areas. On the fiscal side, through Ministry of Home Affairs Regulation No. 1/2021 and Law No. 1/2022, the national government obliges subnational governments to set a maximum of 10% for vehicle taxes, including BBNKB and motor vehicle tax (PKB). However, averaged nationally, these taxes together make up a large proportion of Regional Government Revenue (PAD), amounting to 47% in 2021 (Koran Tempo, 2022). This would mean that a massive rollout of EVs in place of ICE vehicles could significantly reduce subnational income under current policies.

Finally, and most important, there are two actors tipping the balance between support and opposition for EV development – the President and the CMMI. President Jokowi and, particularly, Minister Luhut Pandjaitan have been central to the drive for EVs. However, neither will be in their current positions after the 20 October 2024. This suggests that there could be a significant weakening of government support for EV development if President-elect Prabowo and his team have a different set of priorities.

5 Possible scenarios⁹ for the development of the EV industry

While the analysis above paints a picture of the various factors that promote and constrain the development of the EV industry at the moment, it is not clear the extent to which this will change when Prabowo Subianto becomes President on 20 October 2024. We therefore asked respondents how they think things might change under the new administration. Based on the responses, we have identified four different scenarios that could unfold. Below we explain how these might come about, given the incentives and motivations of the actors and provide our subjective assessment of the likelihood of each. While distinct, these scenarios are not mutually exclusive – the reality is likely to be a combination of two or more.

1. Downstreaming continuity scenario

The scenario

President-elect, Prabowo Subianto, picks up where his predecessor, Joko Widodo, left off in fully supporting EV acceleration and continues his nickel downstreaming and industrialisation ambitions. Several big EV battery manufacturers like HLI and Gotion started operating at the end of Joko Widodo's administration which is key for the downstreaming pathway. Continuity has been Prabowo and his team's main campaign theme; the promise to continue the popular policies of Jokowi (and the adoption of Jokowi's son Gibran as the Vice Presidential nominee) led to Prabowo/Gibran securing 58% of the vote in the presidential election in February 2024. Prabowo's political circle is also similar to Joko Widodo's, suggesting that his political enablers and interests may not be too different.

Discussion

⁹ The traditional approach of The Policy Practice is not to provide scenarios, but to focus on "Pathways of Change" i.e. plausible scenarios which lead to a desired outcome. We have decided to focus on scenarios here, since there are some important plausible scenarios which do not lead to the desired outcome of EV development, but which need to be taken into account in considering how best to engage in support of the sector.

Both Joko Widodo and Prabowo have been using economic nationalism and protectionist rhetoric as a campaign tool in the past (Australian Financial Review, 2018; Bloomberg, 2018). During the 2024 presidential election, Prabowo also deployed a narrative of economic nationalism to justify a processing (“downstreaming”, leveraging Indonesia’s abundant nickel and mineral resources, to be made into EV batteries. It was argued that successful nickel downstreaming would make Indonesia into one of the biggest EV manufacturing hubs in the world. The ability to process nickel into the necessary chemicals for battery manufacture may then determine the pivotal LCR that MoI sets. The current LCR regulation puts considerable emphasis on using locally-made batteries. The achievement of LCR targets is crucial in determining the eligibility of the various EVs for key fiscal incentives. It is unclear how making batteries locally would affect the prices of EVs in the market, but the significant falls in nickel prices in recent years – caused, in part, by the large increases in Indonesia’s production of nickel – could lower the prices of batteries and therefore EVs. There is some evidence of EV prices falling as a result of the use of local batteries (Detikoto, 2024). This would be key in a sector where upfront cost remains one of the biggest barriers to adoption.

Assessment

This is a likely scenario. There are significant embedded political and commercial interests in the continuation of downstreaming and promoting industrialisation through the development of battery factories and EV manufacturing. However, the speed of development may be affected by some elements of the scenarios below.

2. Shift to focus on biofuel and ethanol vehicles rather than EVs

The scenario

As President, Prabowo decides to shift the focus of auto-manufacturing efforts towards hybrid vehicles and, in particular, vehicles using bio-fuels, including ethanol. This slows the development and adoption of battery EVs.

Discussion

President-elect Prabowo did not put a particularly strong emphasis on EVs during the election campaign; the push for EVs has really been driven by Minister Luhut and CMMI. However, Prabowo does have extensive interests in palm oil plantations and biofuels and has spoken about his desire for Indonesia to be like Brazil with a much higher use of bioethanol in transportation. Greater use of bioethanol has also been signaled by Pertamina which is currently conducting due diligence for the acquisition of a bioethanol company in Brazil (Detik, 2024; Kompas, 2024b). Initially, Indonesia seeks to import bioethanol, but in the longer run maintains the ambition to develop and cultivate a domestic bioethanol industry. The mission statement published for Prabowo’s election campaign included the aim to roll out the use of a 50-percent biodiesel fuel (B50) and a 10-percent bioethanol fuel (E10) by 2029 (The Jakarta Post, 2024a). An important part of this election campaign focussed on boosting palm oil and other estate crops. A huge sugar-ethanol project is planned for Papua, to the concern of locals and environmental groups (Benar News, 2024). Calculations are also being made regarding the size of the government subsidies that would be needed to make biofuels commercially viable (Antara News, 2024). Many respondents in our interviews highlighted Prabowo’s focus, and interests, in this area. This also corresponds to the interests of the dominant Japanese automotive manufacturers.

Assessment

This is a highly likely scenario. Prabowo has signalled his focus in this area and is likely to demand that resources are devoted to particular projects. Available evidence suggests that biofuel is significantly more expensive fossil fuel and so the switch to this approach may be constrained by the extent of subsidies (see below).

3. The need to pay for free school lunches triggers subsidy reform which encourages EV adoption

The scenario

To deliver his major campaign promise of free school lunches, Prabowo will require significant resources. He might find these by reducing fuel subsidies which could improve the relative cost advantage of EVs.

Discussion

Prabowo's central campaign promise was the free school-lunch program, which is estimated to cost around IDR 71 trillion annually. To pay for this would require significant savings from other parts of the national budget. One option might be to reduce the tax incentives for EVs – but these are quite small to date. One heavily rumoured method approach to obtaining more resources is if he was to cut fuel subsidies. In 2022, energy subsidies (together with compensation to PLN for keeping tariffs below cost) breached the IDR 500 trillion mark – around 17% of total State Budget (APBN) (IESR, 2023b). Restricting subsidised fuel to the poor would mean most vehicle users would face higher and more volatile fuel prices. This might encourage more consumers to buy EVs. Promoting EVs could also align with Prabowo's goals for capturing revenue for other objectives since it would reduce reliance on imported and subsidized fuel.

Assessment

It seems almost inevitable that, as President, Prabowo will have to adjust fuel prices to reduce the size of the fuel subsidy. As noted above, there have even been suggestions that a fuel subsidy phaseout might be done by the outgoing administration before Prabowo begins his presidency, however, this now seems unlikely. Unfortunately, historically, despite numerous attempts, no Indonesian president has ever sustainably removed fuel subsidies (The Jakarta Post, 2024c). Prabowo has given no indication that he intends to tackle this difficult challenge and so is much more likely to use his political capital to achieve a one-off price increase that would then release resources that can be used to subsidize biofuels. Nonetheless, such an increase could increase the incentive to switch to EVs.

4. Trade barriers and other countries' local content requirements slow EV growth

The scenario

Trade barriers in other countries, notably recent restrictions from the USA and the EU, as well as their local content requirements may restrict growth of EV and battery manufacturing in Indonesia.

Discussion

On July 4, 2024, the European Union (EU) imposed new tariffs on Chinese EVs to protect the EU's motor industry. The tariffs range from 17.4% to 37.6% depending on the manufacturer (in addition to a 10% duty that was already in place for all Chinese EVs). In May 2024, the US levied a new 100% tariff on imports from China including on EVs. The US Inflation Reduction Act of 2022 already restricts tax credits to vehicles assembled in North America and requires that an increasing amount of the [battery pack's content and value must also have originated in the US](#) or a country with which it has a free trade agreement; EVs with Chinese batteries are [explicitly not eligible](#).

These restrictions could have an important long-term impact on the development of the EV industry in Indonesia. If battery manufacturing takes off in Indonesia, then it is possible that the low cost of pre-cursor chemicals and inputs could enable Indonesia to produce low-cost batteries. Indonesia's LCR are forcing local EV manufacturers to use locally produced batteries. However, both the batteries and the EVs will be based on a nickel supply chain that has been subject to intense international criticism for environmental damage and human rights abuses (Bloomberg, 2024a). This has resulted in the US refusing to agree a limited Free Trade Agreement with Indonesia to the annoyance of Indonesian ministers (Foreign Policy, 2024b). There is clearly an element of this that relates to the US's desire to restrict Chinese imports, given the high Chinese investment in Indonesia's nickel mining industry. The European Union is also going to implement a battery passport (i.e. a tracing mechanism) starting in 2027 which may make it difficult for Indonesia's batteries and EVs using them to enter the EU (Circularise, 2023).¹⁰

However, in the short-term these restrictions may not have a major impact on Indonesia if its market is China or India. In the medium-term such trade barriers and LCR requirements could restrict the growth of the EV industry in Indonesia. But it is also possible that increases in Indonesian (rather than Chinese) content, combined with greater controls on the environmental costs of nickel mining and processing might make enable Indonesia to access the European and US markets.

Assessment

While the US and EU restrictions are already in place, these trade barriers are more of a concern for the future. In the short-run, markets in China, India and elsewhere are likely to be sufficient to enable the continued growth of the EV industry in Indonesia. But Indonesia will need to invest in improving environmental and labour standards if it is to gain access to more lucrative markets in the EU and the US.

6 External actors and interventions

The sections above outline some of the political economy constraints to the development of the EV sector in Indonesia and likely scenarios going forward. This section provides a snapshot of what external actors i.e. multilateral and bilateral development partners, and international think tanks and NGOs, are working on in the transportation sector. It also provides a subjective

¹⁰ One reason why these restrictions matter to Indonesia is because the US and European EV markets tend to use batteries based on Nickel Manganese Cobalt (where Indonesia's comparative advantage lies), because of their higher energy density and faster charging rates, rather than Lithium Iron Phosphate batteries.

judgement, based on our interviews with some of these actors and the views expressed by other respondents, about the relative level of influence that these external actors might have on the development of the sector. Likelihood of influence is broken into three categories defined as:

High: has authority to make policies or bring major resources or close political connections

Medium: actively advocating for (or against) EVs but with comparatively lower resources, connection or authority

Low: minimal activities and relatively little influence.

Table 4 provides a summary of the findings.

Table 4: External actors, activities and influence over outcomes in the EV sector

External actor	Activities	Likelihood of influence
Asian Development Bank	Released a comprehensive study on EV in Indonesia including projections on E2W adoptions in Jakarta and Bali provinces (ADB, 2022).	Medium
International Council on Clean Transportation	Released some studies and presentations on EV in Indonesia including the highly-cited Life Cycle Analysis (LCA) emission report on EV, ICE and multiple fuel vehicles (ICCT, 2023). Has also attended many focus group discussions and dialogues on e-mobility.	Medium
UK PACT	One of the focuses of UK PACT Indonesia is low carbon transport and they have channelled funding for several project implementors to develop action plans for city buses, public transport, 2-wheeler electrification and other sustainable transport initiatives, with a strong emphasis on equity and inclusion.	Medium
Japan International Cooperation Agency	JICA is a well-connected Agency that has Memorandum of Understanding, Memorandum of Cooperation, or Official Development Assistance loans with several Indonesian ministries or subnational governments. In the transport sector, it has focussed on developing DKI Jakarta's mass rapid transport (MRT) and strengthening Jabodetabek (Jakarta Bogor Depok Tangerang Bekasi) governments to implement Transit	High

	Oriented Development (JICA, 2022, 2023). On EVs, JICA has collaborated with the MoI in holding an EV dialogue with a focus on developing the domestic E2W supply chain.	
World Bank	The World Bank takes a relatively passive role in Indonesia's EV sector because the power sector is still dominated by fossil fuel (coal). Their concern was validated by a technical report that they commissioned in 2023 which analysed the relationship between EVs and power systems, including its mix of electricity sources and reliability/quality (World Bank, 2023).	Low
E3G	Conducting a study on Indonesian political economy landscape on energy transition and transportation decarbonisation focusing on EV. Their presence in Indonesia is relatively new.	Low
USAID	Active in the Indonesia Just Energy Transition Partnership (JETP) policy working group and jointly (with Japan) leads the International Partners Group. It has collaborated with various ministries over the years, but does not have any specific projects on EV to date.	Low
Tony Blair Institute of Global Change	Led by former UK Prime Minister Tony Blair who, in 2024, met President-elect Prabowo, TBI are still in the early stage of engagement in Indonesia energy transition and EV landscape. They are starting to appear in forums and mass media on energy transition. TBI had an agreement to provide human resource training for the MoT but they do not have any visible interest in EVs yet.	Low
Gesellschaft für Internationale Zusammenarbeit GmbH	GIZ have a long-standing and strong partnership with Indonesian ministries especially on environment and climate mitigation. Unlike several organisations on this list whose activities still consist of exploring, commissioning studies or developing action plans, several of GIZ's activities are already in the implementation stage. This includes a solar-charged boat electrification project in	High

	East Nusa Tenggara (Kompas, 2024a), which seems to be their only EV-related project.	
RMI	RMI is active as a working group member in Indonesian JETP which showcases their connection and influence. However, they are not yet doing EV specific projects.	Low
PricewaterhouseCoopers	Conducted an Indonesian EV consumer survey in 2023 while also including a 'test' to gauge ownership readiness of potential EV buyers (PwC, 2023). PwC also uses this survey to project EV growth.	Medium
Boston Consulting Group	Online news suggests that BCG is relatively close with national ministries and more active in open forums on sustainability relative to other consulting firms. BCG also authored a comprehensive report on EVs with a focus on E2W's adoption potential (BCG & AEML, 2022).	High
McKinsey & Company	McKinsey & Company has released short reports on EV growth projection in Asia, including Indonesia, and deep-dives on global E2W growth potential. Separately, McKinsey & Company also projected scenarios for EV adoption in Indonesia (McKinsey & Company, 2024a). Their most recent report "McKinsey Mobility Consumer Pulse" reveals that 29% of surveyed global EV users have considering going back to ICE vehicles (McKinsey & Company, 2024b), which caused a stir among Indonesian EV players (Bloomberg, 2024b).	High
Deloitte	Deloitte has released several reports related to the EVs eco-system. In 2022, it released a report on nickel mining and downstreaming (Deloitte, 2022). In 2023, it produced a report focusing on the big potential of Indonesia's E2W and a South East Asia consumer survey on EVs (Deloitte, 2023).	Medium
KPMG	KPMG has released several reports from a global, ASEAN and country perspective on EVs, including one of the earliest EV reports in Indonesia on EVs and its battery development in 2021 (KPMG, 2021).	Medium

7 The wider political economy of the energy transition in Indonesia

Before providing a set of specific recommendation for promoting EVs in Indonesia, it is important to situate our analysis in the wider context of the political economy of climate action in Indonesia (as discussed in more detail in E3G's Political Economy Mapping). Indonesia matters for global climate action, primarily for two reasons:

First, Indonesia is the world's fifth largest emitter of greenhouse gases, and the second largest emitter from forests after Brazil. What Indonesia does, particularly on forests, has global implications. Continued political commitment from the Prabowo administration, building on the existing moratorium on new forest concessions, will be key to meeting the government's NDC commitment of a 29% reduction in emissions by 2030.

Second, Indonesia's power system is heavily dependent on coal. Under its Just Energy Transition Partnership agreement, it has committed to close its coal-fired power stations by 2050. However, the country is still building numerous off-grid (or captive) coal-fired power stations, primarily to meet the rapidly expanding demands of the nickel processing sector. The JETP Comprehensive Investment and Policy Plan now aims to cap on-grid emissions at 250 MtCO₂ in 2030, but off-grid coal could reach 30 GW in 2030 and result in an additional 150 MtCO₂, meaning total power sector emissions could reach 400 MtCO₂ in 2030, more than twice the level required to align with the Paris Agreement's 1.5C temperature limit (Climate Action Tracker, 2024).

A huge amount of international effort has gone into working with the Government of Indonesia to tackle these key climate challenges. However, it is important to note that neither of these areas are likely to be a central focus of the government's programme going forward. Rather, the key drivers of domestic politics are the ability to create jobs for Indonesia's burgeoning working age population while keeping prices of basic commodities, particularly food and energy, at affordable levels.

To achieve job creation, the government is likely to focus on boosting growth through attracting investment, including in the EV value chain (all the way from mining, through processing, to battery and EV manufacturing) as well as, potentially, in estate crop development and biofuels. This also fits with the interests of Indonesia's political and business elite. However, significant changes in the government approach to pursuing growth in the EV value chain and biofuels will be needed for these investments to be compatible with the government's climate commitments on forestry and coal phase-out.

Keeping prices affordable will also be a difficult challenge. The government will be torn between the desire to minimise reductions in subsidies, particularly on energy, to avoid large price increases and the need to find revenue to support nascent industries as well as other, major, campaign pledges, such as free school lunches. If investment leads to growth, then this could generate the fiscal resources to achieve some combination of these objectives. But if markets become concerned about the government's fiscal position, then exchange rate movements could limit the government's room for manoeuvre. There are also significant concerns about the implications of coal-phase out for the cost (and therefore the price) of electricity. This explains the government's emphasis on concessional financing for early retirement of coal-fired power plants. Investment in renewable energy should reduce costs in the long-term, but progress is stifled by the current oversupply from already contracted

coal-fired power plants and the need for major investments in grid to facilitate intermittent renewables.

Notwithstanding these challenges, it is important to recognise some of the longer-term drivers of change in Indonesia. Indonesia is growing fast and has big ambitions. It wants to be an upper-income country by its centenary in 2045. The government sees industrialisation as a way of achieving this and so it is not surprising that there is a policy focus on this. But Indonesia also increasingly wants a significant role on the global stage; and Indonesia's rapidly growing middle classes want clean air and a good environment. As a result, there is likely to be a gradual shift towards reduced domestic pollution and a greater sensitivity towards how the country is viewed internationally regarding its environmental commitments.

All the above has implications for the kinds of external interventions that are likely to be most effective in supporting the achievement of Indonesia's climate commitments. Specifically, four types of support are likely to matter:

Knowledge: Indonesia already has a sophisticated civil service and knowledge eco-system. However, its desire to move up value-chains as rapidly as possible means that it is open to genuine partnerships in knowledge generation and policy innovation.

Access: Indonesia increasingly wishes to become a global player in new markets, including EVs and biofuels. This requires access to major markets including the US and European markets. This suggests that US and European actors have significant leverage if they make such access conditional on progress towards more sustainable practices in new industries.

Finance: Ultimately achieving a rapid energy transition in Indonesia will be costly. Existing coal-fired power plants need to be bought out and closed; major investments are needed in the grid; and a huge stock of ICE vehicles need to be replaced with EVs. It is neither just, nor realistic politically, to expect that this cost will be borne entirely by Indonesian citizens. Considerably more concessional external finance will be required.

Norms: There have been some worrying developments recently to reduce the space for citizens to report and protest about environmentally harmful activities (see the PEM for more details). External actors can support grassroots Indonesian organisations to monitor activities and highlight problems. At the same time, the attitudes and beliefs of Indonesian citizens are changing rapidly. This suggests an important role for external actors in supporting the demands of ordinary Indonesians for cleaner air and a better environment.

8 Recommendations

Most reports on EVs in Indonesia conclude with a long list of recommendations for what the government should do to promote the development of the sector. This report is different. It has outlined the political economy challenges facing the sector and described how they may influence the evolution of the sector. The recommendations below are not for the government of Indonesia; they are for external actors (donors and international NGOs) who are interested in influencing the path that Indonesia takes.

It is important to precede these recommendations with an important observation – that external actors have relatively little influence over the political choices that Indonesia will take regarding EVs. Engagement with large, middle-income countries such as Indonesia is most

influential when based on long-term partnerships which are aligned with the political vision of the government. Nonetheless, the evidence from this PEA suggests that there are at least seven areas where external actors might engage which could support the development of the EVs in Indonesia.

1. *Technical cooperation and knowledge exchange*

The Government of Indonesia continues to appreciate technical cooperation and knowledge exchange in a wide range of areas. For the EV sector there are particular opportunities in knowledge sharing around some of the most pressing technical constraints that the sector faces, including lessons of rolling out charging infrastructure, the best policies to accelerate cost reductions in battery production and manufacturing, and how to ensure that local content regulations boost capabilities rather than stifling an emerging market.

For example, the International Council for Clean Transportation have already provided some thinking about the most effective way of rolling out charging infrastructure (Kristiana et al, 2024). There is also a large literature and much experience on potential and pitfalls of industrial policy, including recently for EV battery value chains (Gyórfy, 2024; Li et al, 2024) and for other sectors in Indonesia (Derbyshire and Adamopoulou, 2021). International actors are well placed to work with the Government of Indonesia to ensure that the lessons from international experience inform local policy development. This could be through embedded advisors within ministries, collaboration on specific pieces of analytical work, or joint research programmes between experts in development partner countries and Indonesia.

2. *International visibility on environmental harm in the EV value chain and capacity to tackle them*

Nickel mining and processing can be extremely harmful both to the environment and to workers rights. All the evidence suggests that the way in which it is being conducted in Indonesia does not comply with accepted good practice in mining and processing industries as espoused, for example, by the Extractive Industries Transparency Initiative. While controversial, external partners can support investigative journalism and community monitoring to expose current practices and put pressure for stricter enforcement of high quality standards of environmental and worker rights.

Equally, external partners can take a constructive approach, working with the relevant parts of the Government of Indonesia to improve compliance with appropriate standards. For example, external partners could review existing regulations and show how they might be improved. They could also support measures to assess compliance with regulations and the institutional requirements for enforcement. International business groupings could facilitate discussions on how to improve management of environmental harms, while international labour organisations, such as the ILO, could help to coordinate tripartite discussions on labour rights.

3. *Support for a non-discriminatory multilateral trading system*

At the same time as calling for higher environmental and labour standards, external diplomatic actors should support the integration of trade in EVs and associated components of the value chain into a non-discriminatory multilateral trading system. Currently, trade rules are being used for geopolitical purposes (notably to exclude goods which are seen to have a high Chinese input). This approach hurts everyone,

including emerging countries such as Indonesia. Western governments in particular should support the application of trade rules around EVs in a non-discriminatory way to enable the emergence of new industrial capabilities in Indonesia and elsewhere.

4. *Engage with the Japanese government and Japanese ICE automotive manufacturers on the need to transition from ICE to fully electric vehicles*

Japanese automotive manufacturers dominate the automotive sector in Indonesia. To preserve this dominance and avoid the costs of transition they have focussed on a multi-fuel approach to emissions reductions. While there may be a role in the short-term for such vehicles, long-term climate targets require rapid electrification of transportation. External diplomatic actors should engage with the Japanese government and the major Japanese automotive firms to encourage them to recognise the need for a transition to a fully electric transportation and produce a credible plan for how they will transition towards true EVs as quickly as possible.

5. *Evidence on the costs of biofuel production*

Given the likely emphasis of President-elect Prabowo on biofuels, it will be important for policy decisions to be informed by a proper understanding of the true costs of biofuel production. External actors can work with Indonesian institutions to calculate detailed, independent, studies on the cost of biofuel production and the pros and cons of investment in this approach. Moreover, given the history of large estate crop developments in Indonesia with significant environmental costs, external actors would be wise to support NGOs and local communities to monitor any efforts to undertake similar schemes (as currently planned in Papua).

6. *Air pollution campaigns*

The poor quality of air in Indonesia's large cities is increasingly becoming a politically important issue. Action on air pollution presents an opportunity to tackle multiple development objectives in one go because shifting to zero-emission vehicles: improves air quality, reduces fuel imports, reduces greenhouse gas emissions, and shrinks the fiscal burden associated with the fuel subsidy. External actors should therefore put a renewed emphasis on supporting local efforts to tackle air pollution, including by highlighting the link to poor fuel quality (which could trigger investment in better fuel quality) and the benefits of shifting to EVs.

7. *Support fossil fuel subsidy reform*

The relatively low price of fuel is one of the key economic factors that holds customers back from shifting to EVs. The government needs to reform fossil fuel subsidies both for fiscal reasons, to pay for free school lunches and other commitments, as well as to generate revenue to upgrade refineries to produce cleaner fuel to reduce air pollution. Given the sensitivity of the issue, external actors are generally wise not to publicly support subsidy reform. But they can provide strong support to the government to put in place the mechanisms to implement such reforms, including technical analysis, social protection mechanisms, and communications campaigns.

Collectively such efforts could have a significant impact on the development and adoption of EVs in Indonesia.

References

- AC Ventures & AEML. (2023). *Indonesia's Electric Vehicle Outlook*. <https://acv.vc/resources/indonesia-electric-vehicle-outlook/>
- ADB. (2022). *Electric Motorcycle Charging Infrastructure Road Map for Indonesia* (0 ed.). Asian Development Bank. <https://doi.org/10.22617/TCS220426>
- ADB. (2023). *Accelerating the Clean Energy Transition in Southeast Asia: Captive Power Landscape Assessment for the Energy Transition in Indonesia – Final Report*. Asian Development Bank. https://www.adb.org/sites/default/files/project-documents/55124/55124-001-tacr-en_1.pdf
- Adhiguna, P. (2023). *Electrifying Indonesia's Road Transport: The Quiet Giants in the Room: Perceiving Legacy Automakers' Directions and Influence*, Institute for Energy Economics and Financial Analysis, January 2023.
- Antara News. (2024, May 3). Government formulating subsidy for bioethanol fuel: Minister. Antara News. <https://en.antaranews.com/news/312468/government-formulating-subsidy-for-bioethanol-fuel-minister>
- APNI. (2024, May 3). Decarbonization of Indonesia's Captive Power Sector.
- ASEAN Briefing. (2024, June 5). China's Investments in Indonesia: 2024 Outlook. ASEAN Business News. <https://www.aseanbriefing.com/news/chinas-investments-in-indonesia-2024-outlook/>
- Australian Financial Review. (2018, September 17). Economics, not religion, to dominate Indonesia's election. Australian Financial Review. <https://www.afr.com/world/asia/economics-not-religion-to-dominate-indonesias-election-20180917-h15hqy>
- BCG & AEML. (2022). *Electrifying Indonesia's Two-Wheeler Industry*. <https://web-assets.bcg.com/4d/a7/b73e2a5a4c88b34598e8663fb8ee/bcg-x-aeml-electrifying-indonesias-two-wheeler-industry-nov-2022-1.pdf>
- Benar News. (2024, June 5). Indonesia's massive sugar-bioethanol project in South Papua causes locals to fear exploitation. Benar News. <https://www.benarnews.org/english/news/indonesian/locals-fear-papua-sugar-ethanol-project-exploitation-06052024141259.html>
- Bisnis. (2023, November 26). Erick Thohir Sebut Produksi Mobil Listrik Masih Rendah, Hyundai Angkat Bicara. <https://otomotif.bisnis.com/read/20231126/275/1718077/erick-thohir-sebut-produksi-mobil-listrik-masih-rendah-hyundai-angkat-bicara>
- Bloomberg. (2018, September 17). Economic Nationalism Is Back in Indonesia as Election Nears. <https://www.bloomberg.com/news/articles/2018-09-16/economic-nationalism-is-back-in-indonesia-as-election-approaches>
- Bloomberg. (2024a, June 17). Indonesia's Deadly Mining Complex Powering the Electric Vehicle Revolution. Bloomberg. <https://www.bloomberg.com/features/2024-indonesia-sulawesi-nickel-fire/>
- Bloomberg. (2024b, July 25). McKinsey Sebut Pemilik EV Ingin Balik ke Mobil BBM, Wuling Bantah. <https://www.bloombergtechnoz.com/detail-news/44488/mckinsey-sebut-pemilik-ev-ingin-balik-ke-mobil-bbm-wuling-bantah>

- Circularise. (2023, December 11). EU battery passport regulation requirements. <https://www.circularise.com/blogs/eu-battery-passport-regulation-requirements>
- Climate Action Tracker (2024). <https://climateactiontracker.org/countries/indonesia/>
- CNN Indonesia. (2024, May 3). Jokowi Bicara Peluang Besar Motor Listrik di Indonesia. otomotif. <https://www.cnnindonesia.com/otomotif/20240503183034-579-1093715/jokowi-bicara-peluang-besar-motor-listrik-di-indonesia>
- CREA & CELIOS. (2024). Debunking the value-added myth in nickel downstream industry – Economic and health impact of nickel industry in Central Sulawesi, Southeast Sulawesi, and North Maluku. https://celios.co.id/wp-content/uploads/2024/02/EN-CREA_CELIOS-Indonesia-Nickel-Development-2024.pdf
- Deloitte. (2022). Overview of Indonesia’s EV downstream sector: A focus on nickel. Deloitte. <https://www2.deloitte.com/content/dam/Deloitte/id/Documents/about-deloitte/id-about-dip-edition-3-chapter-4-feb2022-en.pdf>
- Deloitte. (2023). 2023 Global Automotive Consumer Study: Southeast Asia perspectives. Deloitte. <https://www2.deloitte.com/content/dam/Deloitte/sg/Documents/consumer-business/sea-cb-2023-global-automotive-consumer-study-southeast-asia-perspectives.pdf>
- Derbyshire, William, and Elena Adamopoulou. 2021. ‘Long-Term Energy Sector Emissions Targets: Local Content Requirements (LCR) Review’. <https://mentari.info/>
- Detik. (2024, June 14). Pertamina Mau Caplok Perusahaan Brasil buat Geber Etanol, ESDM Bilang Begini. detikfinance. <https://finance.detik.com/energi/d-7390994/pertamina-mau-caplok-perusahaan-brasil-buat-geber-etanol-esdm-bilang-begini>
- Detikoto. (2024, 4 July 2024). Kona Electric Price Drops by Hundreds of Millions, Ioniq 5 Follows Using Local Batteries, <https://oto.detik.com/mobil-listrik/d-7422401/kona-electric-harganya-turun-ratusan-juta-ioniq-5-nyusul-pakai-baterai-lokal>.
- Foreign Policy. (2024a, May 8). Indonesia’s Electric Vehicle Transition May Hit Roadbumps. <https://foreignpolicy.com/2024/05/08/indonesia-electric-vehicle-green-transition-china-tariffs/>
- Foreign Policy. (2024b, August 15). Without Indonesia’s Nickel, EVs Have No Future in America. Foreign Policy. <https://foreignpolicy.com/2024/05/01/indonesia-nickel-green-energy-ev-fta-congress/>
- Gaikindo. (2023a). Indonesian Automobile Industry Data – Production 2023. Gaikindo. <https://www.gaikindo.or.id/indonesian-automobile-industry-data/>
- Gaikindo. (2023b). Jumlah Kendaraan di Indonesia 147 Juta Unit, 60 Persen di Pulau Jawa. <https://www.gaikindo.or.id/jumlah-kendaraan-di-indonesia-147-juta-unit-60-persen-di-pulau-jawa/>
- Government of Indonesia. (2022). Enhanced Nationally Determined Contribution: Republic of Indonesia. https://unfccc.int/sites/default/files/NDC/2022-09/23.09.2022_Enhanced%20NDC%20Indonesia.pdf
- Gyórfy, D. (2024). Liberal and illiberal industrial policy in the EU: the political economy of building the EV battery value chain in Sweden and Hungary. *Comp Eur Polit* (2024). <https://doi.org/10.1057/s41295-023-00374-0>.

- ICCT. (2023). Comparison of the life-cycle greenhouse gas emissions of combustion engine and electric passenger cars and two-wheelers in Indonesia. The International Council on Clean Transportation. <https://theicct.org/publication/comparison-life-cycle-ghg-emissions-combustion-engine-and-electric-pv-and-2w-indonesia-sept23/>
- IEA. (2024). Global Critical Minerals Outlook 2024. International Energy Agency. <https://iea.blob.core.windows.net/assets/ee01701d-1d5c-4ba8-9df6-abeeac9de99a/GlobalCriticalMineralsOutlook2024.pdf>
- IESR. (2023a). Indonesia Electric Vehicle Outlook (IEVO) 2023. IESR. <https://iesr.or.id/pustaka/indonesia-electric-vehicle-outlook-ievo-2023/>
- IESR. (2023b). Indonesia Energy Transition Outlook (IETO) 2024. IESR. <https://iesr.or.id/en/pustaka/indonesia-energy-transition-outlook-ieto-2024/>
- IMF. (2024, April). IMF Data Mapper—Indonesia 2024. <https://www.imf.org/external/datamapper/profile>
- Indonesia Business Post. (2024, July 13). Govt dismisses planned purchase restriction of subsidized fuel on Aug. 17, 2024. Indonesia Business Post. <https://indonesiabusinesspost.com/insider/govt-dismisses-planned-purchase-restriction-of-subsidized-fuel-on-aug-17-2024/>
- Jakarta Globe. (2024, June 14). Neta, Wuling, Chery, and Sokon to Make Indonesia an EV Export Hub. Jakarta Globe. <https://jakartaglobe.id/business/neta-wuling-chery-and-sokon-to-make-indonesia-an-ev-export-hub>
- JICA. (2022, February 4). Signing of Record of Discussions on Technical Cooperation for Project with Indonesia: Contributing to the Transit-Oriented-Development in Jakarta metropolitan area. https://www.jica.go.jp/english/information/press/2021/20220204_30.html
- JICA. (2023, April 6). Signing of Japanese ODA Loan Agreements with Indonesia: Contributing to the strengthening of the Japan-Indonesia partnership by supporting economic growth and climate change response initiatives. https://www.jica.go.jp/english/information/press/2023/20230406_10e.html
- Kompas. (2023, October 25). Menperin: Kapasitas Produksi Motor Listrik di Indonesia Capai 1,4 Juta Unit Per Tahun. <https://money.kompas.com/read/2023/10/25/221600526/menperin--kapasitas-produksi-motor-listrik-di-indonesia-capai-1-4-juta-unit>
- Kompas. (2024a, June 1). Solar Electric Boats, Energy Transition on Rote Island. kompas.id. <https://www.kompas.id/baca/english/2024/06/01/en-perahu-listrik-tenaga-surya-transisi-energi-di-pulau-rote>
- Kompas. (2024b, June 11). Transisi Bioetanol Pertamina Segera Awali Era Bioetanol di Indonesia. kompas.id. <https://www.kompas.id/baca/ekonomi/2024/06/10/pertamina-segera-ekspansi-dorong-transisi-ke-bioetanol>
- Kontan. (2023, January 24). Anggaran Subsidi dan Kompensasi BBM Tahun 2023 Sebesar Rp 339,6 Triliun. kontan.co.id. <https://nasional.kontan.co.id/news/anggaran-subsidi-dan-kompensasi-bbm-tahun-2023-sebesar-rp-3396-triliun>
- Koran Tempo. (2022, July 25). Pajak Kendaraan Penyumbang Signifikan Pendapatan Daerah. Tempo. <https://koran.tempo.co/read/info-tempo/475312/pajak-kendaraan-penyumbang-signifikan-pendapatan-daerah>

- KPMG. (2021). Decarbonisation of Transport: The Journey of Electric Vehicles in ASEAN. KPMG. https://assets.kpmg.com/content/dam/kpmg/sg/pdf/2021/04/Decarbonisation_of_transport.pdf
- Kristiana, Tenny, Logan Pierce, Chelsea Baldino, and Jakob Schmidt. 2024. 'Charging Indonesia's Vehicle Transition: Infrastructure Needs for Electric Passenger Cars in 2030'. International Council for Clean Transportation, 21725. doi:10.17226/21725.
- Li, Zhaohua, Suqin Pang, and Xin Shen. 2024. 'Effects of Non-Subsidized Industrial Policies on Embedding Position of Power Lithium-Ion Battery Manufacturers in Global Value Chain: Firm Level Evidence from China'. Journal of Cleaner Production 461: 142681. doi:10.1016/j.jclepro.2024.142681
- MaCaffrey, C. and Poitier, N. (2024). Making industrial policy work: A case study on the European Battery Alliance Academy, Bruegel Working Paper No. 01/2024, Brussels, <https://hdl.handle.net/10419/294885>.
- McKinsey & Company. (2024a, April 22). Indonesia's green powerhouse promise: Ten bold moves. <https://www.mckinsey.com/id/our-insights/indonesias-green-powerhouse-promise-ten-big-bets-that-could-pay-off>
- McKinsey & Company. (2024b, June). McKinsey Mobility Consumer Pulse—Media Presentation. https://executivedigest.sapo.pt/wp-content/uploads/2024/06/Mobility-Consumer-Pulse-2024_Overview.pdf
- Project Multatuli. (2024, February 2). Cina di Hilir: Gurita Oligarki Nikel Indonesia. Project Multatuli. <https://projectmultatuli.org/cina-di-hilir-gurita-oligarki-nikel-indonesia/>
- PT Surveyor Indonesia. (2024). SISAPIRa. <https://landing.sisapira.id/#tentang-program>
- PwC. (2023). Indonesia Electric Vehicle Consumer Survey 2023. PwC. <https://www.pwc.com/id/en/publications/automotive/indonesia-electric-vehicle-consumer-survey-2023.pdf>
- Reuters. (2023, February 2). Indonesia 2023 gasoline demand, imports likely to exceed 2022 records. Reuters. <https://www.reuters.com/business/energy/indonesia-2023-gasoline-demand-imports-likely-exceed-2022-records-2023-02-02/>
- S&P Global (2024). Indonesia nickel production dominates commodity market. <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/indonesian-nickel-production-dominates-commodity-market-80242322.6> Feb 2024.
- Sosialisasi Kebijakan Insentif Dalam Rangka Percepatan Investasi KBLBB. (2024, March 1). [Video recording]. <https://www.youtube.com/watch?v=OWgEOPtS3bU>
- Statista. (2023a, April 3). Number of passenger cars in Indonesia from 2015 to 2022. Statista. <https://www.statista.com/statistics/1267622/indonesia-number-of-passenger-cars/>
- Statista. (2023b, September 5). Number of motorcycles in use in Indonesia from 2017 to 2022. Statista. <https://www.statista.com/statistics/978944/indonesia-number-of-motorcycles-use/>
- Statista. (2024a, July 25). Share of the urban population in Indonesia from 2014 to 2023. Statista. <https://www.statista.com/statistics/761113/share-of-urban-population-indonesia/>

- Statista. (2024b, Jun 25, 2024). Motor vehicle production volume ASEAN 2023, by country. Statista. <https://www.statista.com/statistics/583783/asean-motor-vehicle-production-by-country/>
- Sullivan (2024a). Developing a vibrant electric vehicle industry – available incentives, Chistian Teo & Partners, 24WAS007 05.
- Sullivan (2024b). Renewable Energy Projects: possible rethink of Local Content Requirements, Coal Asia Magazine, July - August 2024.
- The Jakarta Post. (2024a, February 23). Prabowo’s biofuel plans face major challenges. Jakarta Post. <https://www.thejakartapost.com/business/2024/02/23/prabowos-biofuel-plans-face-major-challenges.html>
- The Jakarta Post. (2024b, July 10). Govt to restrict subsidized fuel sales starting Aug 17, Luhut says. The Jakarta Post. <https://www.thejakartapost.com/business/2024/07/10/govt-to-restrict-subsidized-fuel-sales-starting-aug-17-luhut-says.html>
- The Jakarta Post. (2024c, July 18). Truth or dare, ending fuel subsidy—Editorial. The Jakarta Post. <https://www.thejakartapost.com/opinion/2024/07/18/truth-or-dare-ending-fuel-subsidy.html>
- Trinanda (2023). Indonesia’s Nickel Industry in the midst of transitioning towards net zero emission, <https://medium.com/@ojimetalui/indonesias-nickel-industry-in-the-midst-of-transitioning-towards-net-zero-emission-3335e2928bf6>
- Wijaya T. and Sinclair L. (2024): An EV-fix for Indonesia: the green development-resource nationalist nexus, Environmental Politics, <https://doi.org/10.1080/09644016.2024.2332129>
- World Bank. (2019). Aspiring Indonesia: Expanding the Middle Class. World Bank. <https://www.worldbank.org/en/country/indonesia/publication/aspiring-indonesia-expanding-the-middle-class>
- World Bank. (2023). Electric Mobility and Power Systems: Impacts and Mitigation Strategies in Developing Countries. World Bank. <https://documents1.worldbank.org/curated/en/099050123125542493/pdf/P1746590c032c506708d4905fad210b582c.pdf>

Annex 1: Regulations relating to electric vehicles

Fiscal policy	Summary
MoT Reg. No. 65/2020	Conversion of 2W to E2W, and regulates the component of conversion vehicle, requirements for Small Medium Enterprises (SME) workshop to be eligible and certified to convert 2W to E2W, with safety requirements and administration process
MoT Reg. 44/2020	EV testing and certification process
MoT Reg. No. 45/2020	Regulates special vehicle with electrical motor including safety requirement, riding behaviour, and vehicle lane
Government Reg. No. 74/2021	Battery electric vehicle (BEV) is exempted from sales tax on luxury goods (PPnBM)
Ministry of Home Affair (MoHA) Reg. No. 1/2021	BEV maximum vehicle yearly tax (PKB) and vehicle title transfer fee (BBNKB) is only 10% of its imposition fee calculation
MoF Reg. 138/PMK.02/2021	Vehicle Type Test (SUT) cost for BEV is cheaper than ICEV
Law No. 1/2022	BBNKB and PKB exemption starting in 2025
MoT Reg. No. 15/2022	Conversion of vehicles other than 2-wheelers i.e. cars, truck and buses
Presidential Instruction No. 7/2022	Instructs government across all levels to increase the use of EVs for government official vehicles through procurement or conversion
MEMR Reg. No. 3/2023	IDR 10 million subsidy for ICE 2W vehicles (100 - 150 cc) conversion to EV
Presidential Regulation No. 79/2023	CBU importers (manufacturers) are exempted from import tax (until end of 2025) and PPnBM tax, but must commit to manufacture BEV domestically; non-compliance results in sanction
Ministry of Home Affair (MoHA) Reg. No. 6/2023	Motor Vehicle Tax (PKB) and Vehicle Title Transfer Fee (BBNKB) exemptions for BEV
Ministry of Investment No. 6/2023	Import and luxury tax exemption for automotive ICEs industry who wants to shift their production to EVs
Ministry of Industry (Mol) No. 6/2023	Government assistant incentive scheme to buy E2W with 40% LCR
Ministry of Industry (Mol) Reg. No. 21/2023	<ul style="list-style-type: none"> - IDR 7 million incentive for first purchase of E2W that has 40% LCR - Relaxation of conditions for purchasing two-wheeled electric vehicles through government assistance
Ministry of Finance Regulation (PMK) No. 9/2024	Completely built up (CBU) and completely knocked down (CKD) is exempted from PPnBM until the end of 2024
Ministry of Finance Regulation (PMK) No. 8/2024 (updating PMK 38/2023)	10% discount of PPN (VAT) to be 1% of sale price of E4W with 40% LCR, 10% of sale price of e-bus with 40% LCR and 5% of sale price of e-bus with 20-40% LCR until the end of 2024