



Paloma Circle 2.0

Building Electric Mobility
Ecosystem in Indonesia

Event Report and Study



A Collaboration of



PALOMA SJAHRIR
FOUNDATION



Pioneering Green Partnerships,
Investing in Impact



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VENTURE BUILDER

List of Abbreviations

ASEAN	Association of Southeast Asian Nations
BBNKB	Bea Balik Nama Kendaraan Bermotor (Motor Vehicle Title Transfer Fee)
BEV	Battery Electric Vehicle
BUMN	Badan Usaha Milik Negara (State Owned Enterprise)
E2W	Electric two-wheelers
E4W	Electric four-wheelers
EV	Electric vehicle
ICEV	Internal Combustion Engine Vehicles
IBC	Indonesia Battery Corporation
MEMR	Indonesian Ministry of Energy and Mineral Resources
MoF	Indonesian Ministry of Finance
MoHA	Indonesian Ministry of Home Affairs
Mol	Indonesian Ministry of Investment
MoT	Indonesian Ministry of Transportation
OJK	Otoritas Jasa Keuangan (Indonesian Financial Services Authority)
PKB	Pajak Kendaraan Bermotor (Motor Vehicle Tax)
POLRI	Kepolisian Negara Republik Indonesia (Indonesian National Police)
PLN	Perusahaan Listrik Negara (Indonesian State Electricity Company)
PPnBM	Pajak Penjualan Barang Mewah (Sales Tax on Luxury Goods)
SOE	State Owned Enterprise
SPKLU	Stasiun Pengisian Kendaraan Listrik Umum (Public Electric Vehicle Charging Station)
TKDN	Tingkat Komponen Dalam Negeri (Domestic Component Level)

1. Background

The global landscape of transportation is undergoing a significant transformation, characterized by the rapid rise of the e-mobility industry. At the 26th UN Climate Change Conference of the Parties (COP26) in October 2021, several nations and leading car manufacturers pledged to phase out fossil fuel-powered vehicles by 2040 to achieve the net-zero emissions target. Electric vehicles (EVs), once a niche market, have surged in popularity, reshaping the way we envision sustainable transportation.

Startups play a pivotal role in this transformation, offering innovative solutions to propel the e-mobility sector forward with major startup hubs located in Silicon Valley (USA), Berlin (Germany), Shenzhen (China), Bangalore (India) and other parts of Europe and Asia. This industry's growth trajectory is further underscored by the substantial funding received. In 2020, global EV startups raised a total of approximately \$28 billion in funding, marking a significant increase from previous years¹. One notable example is Rivian, an American EV manufacturer, which secured over \$10 billion in funding in 2020, making it one of the largest fundraising rounds in the e-mobility sector¹. As of 2020, the global EV market has reached a total of 10.2 million electric cars on the road, with annual sales surpassing 3 million units². The electric car market share increased to approximately 4.6% of global car sales in 2020, marking a substantial rise compared to previous years².

As countries around the globe prepare for carbon neutrality, governments in Southeast Asia (SEA) have floated ambitious plans to capture a share of the evolving EV segment, creating various opportunities for the region in both the domestic and export markets. Indonesia has traditionally been a strong automotive market in the region, selling 1 million units, the largest in the Association of Southeast Asian Nations (ASEAN), and producing 1.5 million units (the second highest after Thailand) in 2022. The country has now set out on an ambitious electrification plan as stated in the Ministry of Industry Regulation No 6/2022 setting a national target of 600,000 four-wheel (4W) battery electric vehicles (BEVs) and 2.45 million electric two-wheelers (e2Ws) by 2030, presenting a substantial opportunity for investment. While Indonesia's e-mobility startup ecosystem is still emerging, several startups have begun attracting investment. For instance, e-scooter sharing platform GrabWheels Indonesia raised an

¹ BloombergNEF, "EV Investment and Sales Tracker 2021"

² IEA Global EV Outlook, 2021

undisclosed amount in its seed funding round in 2020 to expand its electric scooter services³. Furthermore, MAKAMotors successfully secured a US\$37.6 million seed round co-led by East Ventures and Charged Indonesia has raised US\$4.5 million to launch electric motorcycles co-led by DeClout Ventures.

The Indonesian government expressed a strong interest in developing the domestic e-mobility industry to reduce reliance on fossil fuels and combat air pollution by offering incentives such as reduced import tariffs, tax exemptions, and registration incentives to promote e-mobility and plans to take the lead in facilitating Regional Electric Vehicle Ecosystem Development, committing to building an EV ecosystem and becoming an important part of the upstream supply chain within ASEAN. This plan signals a positive trajectory for e-mobility adoption and substantial growth opportunities for investment.

Table 1. List of Indonesia's incentives for EV

	Fiscal	Description	Non-fiscal	Description
Infrastructure			MEMR Reg. No. 13/2020	Establishes uniform charging plug standards and electricity pricing policies for public EV charging stations and public electric battery vehicle replacement.
			Mandatory public EV charging stations (SPKLU) in new buildings in Jakarta	The incoming regulation from DKI Jakarta stipulates the need for having public EV charging stations in new buildings in Jakarta

³ Tech in Asia, "GrabWheels raises seed funding to expand e-scooter sharing service in Indonesia"

	Fiscal	Description	Non-fiscal	Description
Production and standardization	MoF Reg. 138/PMK.02/2021	Sets the rule on vehicle Type Test cost for Battery Electric Vehicle (BEV) is cheaper than ICEV; IDR 4.5 million for E2W, IDR 13.2 million for E4W, and E-bus.	President Regulation No. 55 of 2019 on the Acceleration of the BEV Program for Road Transportation	Sets the minimum requirement of 35% to 40% percentage value of domestic production components (TKDN)
	MoF-13/MK.010/2022 concerning Fourth Amendment to Minister of Finance Regulation Number 6/PMK.010/2017	0% import duty for motorized vehicles (both complete and incomplete condition) Incompletely Knocked Down (IKD) condition	MEMR 13/2020 on Electricity Charging Infrastructure for Battery-Based EVs	Stipulates PLN as the initial provider of BEV charging infrastructure, and the state-owned company is open to collaborating with other SOEs (BUMNs) and/or private businesses to establish these stations.
			Mol 6/2022 on Domestic EV Specification, Road Map Development, and Condition for Calculation of Domestic Component Value	Sets the production targets for domestic BEVs in Indonesia to 12 million units for two-and -three-wheeled vehicles and 1 million units for four-wheeled vehicles in 2030

	Fiscal	Description	Non-fiscal	Description
Production and standardization <i>(cont'd)</i>			MoT Regulation No. 45/2020 on Certain Vehicles with Electric Motors	Regulates “Certain Vehicles with Electric Motors” category, which includes personal mobility devices such as e-bikes, electric kick-scooters, hoverboards, and unicycles.
Financing and sales	OJK letter to Directors of Conventional Commercial Banks (SP86/DHMS /OJK/XI/2022)	The relaxation of Risk Weighted Assets calculation includes reducing the credit risk weight for EV production and consumption from the initial 75% to 50% and EV credit purchase payment could cost 0% (without down payment)		
	Law No. 1/2022 on Financial Relationship between the National Government and Local Governments	0% Motor Vehicle Tax (PKB) and Motor Vehicle Title Transfer Fee (BBNKB) for EV starting in 2025		

	Fiscal	Description	Non-fiscal	Description
	Government Reg. No. 74/2021	0% sales tax on luxury goods (PPnBM) for Battery Electric Vehicles (BEV)		
	MoHA Regulation Number 6 of 2023	0% Motor Vehicle Tax (PKB) and Motor Vehicle Title Transfer Fee (BBNKB) for EV		

2. Where do Indonesian start-ups play a role in this space?

In this report, we define Electric Vehicle (EV) startups as companies engaged in the EV assembly industry within Indonesia. EVs, by design, involve fewer mechanical components and do not rely on engine oil, transmission fluid, exhaust systems, alternators, fuel injectors, or starters. Consequently, the production focus of EV predominantly shifts to the manufacturing of battery packs. This distinction separates EV startups from the conventional ICE (Internal Combustion Engine) legacy manufacturers which are also transitioning to the EV market. Such a distinction is necessary as it implies substantial differences and the need for significant overhauls in the production processes for EVs.

With that definition, on August 25, 2023, Paloma Sjahrir Foundation, Ecoxyztem, and P4G held Paloma Circle - Dialogue on Electric Mobility that aimed to understand the common challenges and opportunities among the EV startup players, as well as other players in the electric vehicle infrastructure in Indonesia. The dialogue was attended by various stakeholders, including startups, industries, think tanks, and associations, among others. This dialogue provided a platform for participants to engage in discussions, exchange ideas, and expand their network in order to promote the development of EVs in Indonesia and see where startups in Indonesia can play a role in the development of EVs in Indonesia.

In this Paloma Circle, we asked our participants, seeking to gain insight into their hopes, driving factors, and the hurdles they encounter while working towards the enhancement of the EV ecosystem in Indonesia. We structured our inquiries around three fundamental questions:

1. What are your aspirations for the future of the EV ecosystem in Indonesia?
2. What motivates you to actively work towards realizing these aspirations?
3. What significant challenges do you face in your journey to achieve these goals?

Upon analyzing their responses, we uncovered consistent themes within each category:

a. Aspirations for a better EV ecosystem

Our participants share a collective vision that includes creating an inclusive ecosystem, optimizing economic efficiency, attracting substantial investments, streamlining access to financing, improving air quality, fortifying climate resilience, reducing dependence on fossil fuels, gaining essential support from regulatory frameworks and ecosystems, and invigorating the local industrial economy. Their ultimate aim is for EVs to become a prevalent choice rather than a luxury reserved for a few in Indonesia.

b. Motivations fueling progress

The primary driving forces behind their aspirations center on the yearning for improved air quality and a more sustainable environment. Additionally, their motivation stems from the opportunity to propel local product development and stimulate economic growth within their region. The prospect of contributing to a cleaner and more prosperous future serves as the catalyst for their dedicated efforts.

c. Navigating challenges on the pathway forward

Nevertheless, these aspirations and motivations are not devoid of significant challenges. The hurdles they face encompass a shortage of skilled talent within the EV industry, the requirement for substantial capital investments, the need to revolutionize perceptions regarding EV financing and investment, the complex web of regulations that can be fragmented and unclear, and perhaps most prominently, the prevailing consumer perspective on EVs. This consumer viewpoint stands out as one of the barriers to the widespread adoption of EVs.

Table 2. Challenges of EV startups in Indonesia

Access to regulations	There are at least six ministries that are involved in EV regulations.
Financing	<ul style="list-style-type: none">a. Financing institutions do not have benchmarks to assess financing for EV stakeholders, who possess different risk profiles from those of the conventional ICE due to differing post-sales systems.b. Lack of co-financing programs with the government for electrifying public transportation.
Standardization	Given the electric nature of EVs, each manufacturer has the capacity to tailor their solutions uniquely, highlighting a dearth of standardization among industry participants.

3. The pathway forward, collaboration and recommendations

a. Overcoming challenges

In summary, our participants are united by their collective vision to transform the EV landscape in Indonesia. Grounded in the pursuit of a cleaner environment and stronger local economies, they are determined to overcome challenges that include talent shortages, financial barriers, regulatory complexities, and the imperative task of reshaping public perception to usher in a new era of electric mobility through improving market barriers, financing, and regulatory barriers for new entrants:

i. Market barriers

From the viewpoint of consumers, there exists a sense of cautiousness and a "wait and see" approach regarding EVs. The general public will be more inclined to adopt EVs once the infrastructure is further developed (eg. readily available charging stations, dealerships, etc.),

and they feel more assured about transitioning from their current vehicle. Hence, it is crucial for all current stakeholders in the EV industry to collaborate in overcoming these market barriers. One way to achieve this is to organize forums and expos dedicated to EVs, where the public can enhance their understanding of EVs, share knowledge and exchange information, and get hands-on experience.

ii. Financing

EV startups in Indonesia have received some support from the government in the form of subsidies and reduced taxes for electric vehicles. Nevertheless, there remains a noticeable absence of support from third-party financiers. In Indonesia, the majority of individuals typically depend on third-party financing for non-essential purchases, such as EVs. Within the financing choices, installment plans are one of the most popular financing options, underscoring the critical need for securing support from third-party financiers to encourage wider EV adoption in Indonesia. The government also needs to adopt a venture capitalist (VC) mindset, being willing to take on high risks in pursuit of substantial financing. Building awareness is also paramount in cultivating the market for these endeavors.

iii. Regulatory barriers for new entrants

EVs represent a burgeoning business sector with abundant opportunities for businesses to develop products and services within the space. However, the regulatory framework for new entrants in the space is intricate. To illustrate, establishing a new EV enterprise necessitates engagement with approximately 18 stakeholders from various ministries and institutions. Streamlining and creating transparency of the legal and regulatory process will hasten EV infrastructure development.

b. Potential collaboration to seize opportunities

Amidst the challenges, Indonesia still presents numerous opportunities in development of EV infrastructure. The government is committed to promoting EVs and has set a target of having 2.2 million EVs on the road by 2030. Achieving this objective will require substantial investments in EV infrastructure, thereby creating opportunities for businesses to develop and operate charging stations, battery swap stations, and other EV-related infrastructure.

i. Collaboration with global value chain

During the discussion, it became evident that a significant portion of spare parts originate from Malaysia and Thailand. Furthermore, it was mentioned that prominent Indonesian brands face limitations in collaboration due to certain factors. The first factor is related to the fact that China holds a competitive edge, particularly in the production of dynamos. This prompts the question of where Indonesia's competitive strengths lie.

The second factor related to the current supply chain requires a distinction between suppliers of final goods to original equipment manufacturers (OEM) (Tier 1), intermediate goods (Tier 2), and raw materials (Tier 3), each with its own structure and, naturally, distinct collaboration dynamics from emerging startups. Attracting Foreign Direct Investment (FDI) to Indonesia hinges on foreign suppliers recognizing the country's potential. Indonesia exhibits promise in the field of batteries, but the value chain for fuel cells remains relatively underdeveloped. Intellectual property (IP) rights of cell manufacturing are concentrated among a select few, forcing few startup players to pay high barriers to entry.



Figure 1. EV value chain

Local enterprises have not yet achieved the industrial scale required for this endeavor, so perhaps the initial step should be to facilitate the importation of components. Investment in batteries has the potential to become Indonesia's competitive advantage, provided that robust regulations for technology transfer are also established.

ii. Collaboration with the government and policy makers

To better collaborate with regulators, the first step is to create a stakeholder map. Understanding the position of each stakeholder in the electric mobility ecosystem will help us navigate and build a stronger local electric mobility industry. It is also important to engage the national government to provide clearer and better defined regulations. Identified stakeholders in the electric mobility ecosystem in Indonesia are as follows:

- Technical ministries
 - Ministry of Industry
 - Ministry of Energy and Natural Resources (Electrification and New Renewable Energy)
 - National Police (POLRI) and Ministry of Transportation for the vehicle license
 - Ministry of Forestry and Environment and Ministry of Finance for the environmental incentive
- State-owned enterprises
 - PLN
 - Pertamina
 - Indonesia Battery Corporation (IBC)
- Customers
 - Gojek / Grab
 - VKTR

c. Recommendations

With the stakeholders mapped in the previous section, the following are the top two recommendations to push forward an attractive narrative and promote interest in developing electric mobility industry in Indonesia:

i. *Policy advocacy*

- To simplify coordination with the multiple stakeholders, advocate for regulations, such as a Presidential Instruction (INPRES), in which the President appoints one institution, such as the Coordinating Ministry of Maritime and Investment (Kemenkomarves) to coordinate all the electric mobility workflow.
- The government needs a roadmap for building a healthy electric mobility ecosystem:
 - Begin by simplifying permits to import spare parts
 - Foster collaboration between international and local players
 - Require domestic component standards after the market of electric mobility is well established
 - Support and develop local industry infrastructure.

- Require large foreign automotive companies (Honda, Toyota, Kawasaki, Hyundai, BMW, etc.) to develop electric mobility products to sell in Indonesia.
- Require big automotive players to build electric battery recycling capability with local companies, which can begin with IBC.

ii. Encourage political will

It becomes imperative to foster multi-stakeholder cooperation in order to promote policies and agendas that can generate increased governmental support, because the Indonesian government often appears to exhibit a lower level of enthusiasm for initiatives that are not well-received by the public. This can be achieved by:

- Global trend: Establish a push factor for electric mobility on the back of international commitments.
- Advocacy: Harness the influence of people from the social media supported by think tanks, associations, and influencers to cultivate commitment and consistency.

4. Appendix

A. Attendance List

Name	Organization
Startups in Electric Mobility	
Ratih Trias	Quest Motor
Doddy Setiawan	Gesit
Charles	Blitz Electric Mobility
Michael Limandibhratha	Maritek
Adicahya	Spora
Raditya Wibowo	Maka Motors
Brian	Electrum
Dino Ryandi	VKTR
Andy	Electrum
Charging and Battery Company	
Stephanus Widi	Charged Asia
Darian Verdy Retianza	Transisi
Albert Soerjonoto	OYIKA
Ilham	Ecolgnite
Anthony	Charge+
Association, Think Tank, and Enabler	
Vinensia	Institute for Transportation and Development Policy (ITDP)
Citra / Faris	Institute for Essential Services Reform (IESR)
Arin Andarini Sertianti	ThinkPolicy
Anugraha (Nuki)	Asosiasi Ekosistem Mobilitas Listrik (AEML)
Gonggom	Institute for Transportation and Development Policy (ITDP)
Kadek Alamsyah	New Energy Nexus

B. Documentations

