

**Government Interventions Driving Indonesia's Global Electric Vehicle
Battery Production**

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Abstract

The demand for energy is increasing in this technological era. However, the supply of natural energy resources is decreasing. The establishment of Indonesia Battery Corporation (IBC) aims not only to meet the public's energy needs by utilizing batteries as a source of energy but also to contribute to Indonesia's economic development. This initiative serves as a catalyst for Indonesia in the development of battery energy. The purpose of this research is to examine the government's interest in enhancing Indonesia's economy through energy transition, using mercantilist economic theory to explain government intervention. The research method employed by the author is a qualitative method, utilizing secondary data from various sources such as journal articles, books, websites, and other sources. Data collection techniques involve literature study, and the data is then analyzed using qualitative data analysis techniques. The findings of this research indicate the importance of government intervention in the production process of batteries as energy sources for global electric vehicles, which can enhance Indonesia's economy and promote Indonesia's position as a strong country in the global electric vehicle battery production market.

Keywords: *Indonesian Battery Industry (IBC), Battery Producers, Electric Vehicles, Economic Development, Energy Transition*

Introduction

PT Industri Baterai Indonesia, known as Indonesia Battery Corporation (IBC), is a state-owned enterprise engaged in the Battery Electric Vehicle (BEV) and Electric Vehicle (EV) ecosystem. The government's initiative in establishing IBC aims to realize Indonesia's potential as a global producer of electric vehicle batteries. IBC was formed to capture the potential of global EV battery development by leveraging Indonesia's natural resource reserves and strong distribution networks (indonesiabatterycorp.com, 2023).

Nicolas D. Kanter, President Director of PT Aneka Tambang (Antam), stated that Indonesia's nickel ore consists of two grades: first and second. The first-grade nickel ore is used as raw material for producing stainless steel and electric vehicle batteries. According to him, PT Antam and IBC have signed a framework agreement with Chinese company PT Ningbo Contemporary Brunp Lygend Co. Ltd. (CBL) and South Korea's LG Energy Solution (LGES). CBL is the world's largest electric vehicle battery producer, while LGES is the second-largest. CBL dominates the Chinese market, whereas LGES holds a significant share in the American and European markets. Nicolas also mentioned that to produce nickel for electric vehicle batteries, PT Antam has spun off its nickel business into two subsidiaries located in East Halmahera, Maluku: PT Sumber Daya Arindo (SDA) and PT Nusa Karya Arindo (NKA) (voaindonesia.com, 2022).

Dependence on fossil fuels for centuries has brought us to a point where a transition is necessary. Currently, fossil-fuel-powered transportation modes remain predominant worldwide, both for personal and public vehicles. In Indonesia, conventional transportation is easily accessible and affordable, with most people using cars or motorcycles for daily transport.

The domestic electric vehicle battery industry has received an investment of USD 15 billion, approximately IDR 225 trillion (at an exchange rate of IDR 15,000), from a partnership between Indonesia Battery Corporation (IBC), Chinese company PT Ningbo Contemporary Brunp Lygend Co. Ltd. (CBL), and South Korea's LG Energy Solution (LGES). This investment has been praised by the Minister of State-Owned Enterprises (BUMN), Erick Thohir, who views it as a testament to investor confidence in Indonesia. The government needs to develop a roadmap to achieve self-reliance and reduce dependence on imported products for electric vehicle battery production. Erick Thohir added that IBC is currently preparing this roadmap, including whether it needs to acquire lithium mines abroad to reduce import dependence, allowing IBC to eventually become an investment company (cnbcindonesia.com, 2022).

This study is based on a literature review of nationalist trade theory, also known as mercantilist theory. This theory posits that the state plays a central role in international trade. According to nationalist trade theorists, economic activities should align with the primary goal of building a strong nation. Hamilton argued that a country's international trade policy should prioritize manufactured goods over agricultural commodities. He believed that producing manufactured goods would yield significant benefits in international trade, ultimately contributing to the nation's strength (Maiwan, 2015).

Meanwhile, List emphasized the importance of state intervention in economic aspects. Economic success is unlikely to be achieved without political intervention. In the context of international relations, List cited the historical success of Britain as a global empire, supported by state-driven industrialization. List disagreed with the notion that economic development should be based solely on efficiency, comparative advantage, and specific production choices without political involvement (Maiwan, 2015). Therefore, this study aims to develop an argument that to build a strong nation, specifically Indonesia as a global producer of electric vehicle batteries, state intervention in economic development is necessary. To the best of the author's knowledge, this is a novel study as there has been no specific research examining Indonesia's economic development as a global producer of electric vehicle batteries through Indonesia Battery Corporation (IBC) using nationalist trade theory, also known as mercantilist theory, in international political economy.

The objective of this study is to provide an explanation of how Indonesia Battery Corporation (IBC) can contribute to the global electric vehicle battery industry, including the strategies and steps taken to achieve this. This will demonstrate the government's interest in enhancing Indonesia's economic development through energy transition, and position Indonesia as a strong global producer of electric vehicle batteries.

Methods

This study employs a qualitative research method to explain how Indonesia Battery Corporation (IBC) can become a global producer of electric vehicle batteries. The data used in this research are secondary data sourced from various materials such as journals, books, websites, and other references. The data collection technique employed is a literature review, where the researcher does not interact directly with the research object but relies on information available in literature and other written sources. The collected data are then analyzed using qualitative data analysis techniques, which include data

processing, data analysis, data interpretation, and drawing conclusions (Darwis & Irwanto, 2023).

Discussion

IBC's CEO, Toto Nugroho, projects a significant increase in the use of electric vehicles (EVs) worldwide by 2035, with an annual growth rate of 15-20%. This year, nearly five million electric cars have been sold globally, with the United States, Europe, and China being the primary markets. The Ministry of State-Owned Enterprises (BUMN) has officially announced the establishment of the state-owned battery company holding, Indonesia Battery Corporation (IBC). The investment required for this holding is estimated to reach IDR 238 trillion (Bestari, *cncindonesia.com*, 2021). This holding company will comprise four state-owned enterprises: PT Indonesia Asahan Aluminum (Persero)/Inalum, also known as MIND ID, its subsidiary ANTAM, Pertamina, and PLN. Deputy Minister I of BUMN, Pahala Nugraha Mansury, stated that IBC will not have just one factory but will become an integrated electric battery industry (Bestari, *cncindonesia.com*, 2021).

The high dependency on imported fuel oil in the transportation sector makes Indonesia's economy vulnerable to oil price fluctuations. As fuel imports increase, the current account balance is pressured, foreign exchange reserves decline, and the rupiah exchange rate can weaken. Therefore, the government is seeking alternative energy sources for the transportation sector. One goal of the Battery Electric Vehicle (BEV) program in Indonesia is to substitute the use of fuel in motor vehicles with electric energy to reduce the growing fuel imports required to meet the transportation sector's energy needs. Additionally, the use of BEVs is expected to save energy consumption in the transportation sector, which currently has the highest final energy consumption compared to other energy-using sectors, with the largest share of energy consumed being fuel.

Another important goal of the BEV program is to reduce pollutant emissions in motor vehicle exhaust gases, such as SO₂ (sulfur dioxide), NO_x (nitrogen oxides), CO (carbon monoxide), VHC (volatile hydrocarbons), SPM (suspended particulate matter), and other particles. In support of BEV development, on August 8, 2019, Presidential Regulation No. 55/2019 on the Acceleration of the Battery Electric Vehicle Program for Road Transportation was signed. According to this regulation, the type of electric vehicle to be developed in Indonesia is the Battery Electric Vehicle (BEV), which operates entirely on electricity from batteries, recharged by connecting to an external power grid. The BEV program will include road transportation such as buses, four-wheeled vehicles (cars), and two-wheeled vehicles (motorcycles).

The transportation sector supports the activities of all energy-consuming sectors. Therefore, energy demand in the transportation sector is not only influenced by population growth and the level of public welfare but also by the development of other sectors. The total final energy demand in this sector is projected to increase from 352.9 million barrels of oil equivalent (BOE) in 2018 to 1,252.4 million BOE by 2050, with an average annual growth rate of 3.9% (base scenario). Nearly all the energy used in the transportation sector is in the form of fuel oil. Other energy-consuming sectors include the industrial sector, which is a productive sector continuously being developed to enhance the national economy. The energy demand in the industrial sector is projected to increase from 334.5 million BOE in 2018 to 1,351.9 million BOE by 2050, with an average annual growth rate of 4.3%. Household energy demand is greatly influenced by population growth and the level of public welfare. Final energy demand in the household sector is expected to increase gradually from 2018 to 2050. The final energy demand (excluding firewood) is projected to grow at an average annual rate of 3.3%, from 151.2 million BOE in 2018 to 435.9 million BOE by 2050.

The commercial sector's growth is significantly influenced by economic development. In 2018, the total final energy demand in the commercial sector reached 43.2 million BOE and is projected to increase to 308.3 million BOE by 2050, with an average annual growth rate of 6.1%. Electrical energy dominates the final energy demand in this sector due to economic growth, which affects the development of hotels, office buildings, restaurants, schools, and other public facilities, all of which heavily rely on electricity-based applications.

Strategy for the Use of Electric Vehicles Domestically

1. Presidential Regulation No. 55/2019

Presidential Regulation No. 55/2019 on the acceleration of the Battery Electric Vehicle (BEV) program for road transportation contains general provisions regarding electric vehicles, including the definition of electric motors, batteries, BEVs, Public Electric Vehicle Charging Stations (SPKLU), and others. It also discusses the acceleration of the domestic BEV industry, including research, development, and innovation in the BEV industry. Additionally, it covers the local content requirements for battery electric motor vehicles. The regulation also addresses the provision of SPKLU infrastructure, including safety regulations for electricity and the parties responsible for providing SPKLU infrastructure. The provision of SPKLU infrastructure is assigned to PT PLN (Persero), which may collaborate with state-owned enterprises and/or other business entities.

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2. Development of Low Carbon Emission Vehicles (LCEV)

The Ministry of Industry has proposed fiscal incentives, such as tax holidays, for automotive industries that produce electric vehicles and companies developing battery and electric motor technologies. This effort aims to boost productivity and competitiveness while strengthening the domestic manufacturing industry. The Ministry has also proposed a reduction in import duties for electric vehicles in the form of completely knocked down (CKD) kits, from the current 5-10% to around 0-5%. For incompletely knocked down (IKD) kits, the duties are proposed to be reduced to 0% from the current 7.5%. This reduction allows automotive manufacturers to conduct pre-marketing for electric vehicles, gain production volumes, boost sales, and ultimately increase investment. According to the Ministry of Industry, the strategy for developing electric vehicles domestically has been prepared through a roadmap for the low carbon emission vehicle (LCEV) program. This program uses an approach based on the CO₂ emissions produced by vehicles. The types of vehicles included in the LCEV category are:

- a. Low carbon for ICE technology, which includes fuel-efficient and affordable motor vehicles (KBH2) or low-cost green cars (LCGC).

- b. Low carbon for hybrid electric technology, which includes hybrid electric vehicles (HEVs), plug-in hybrid vehicles (PHEVs), and dual HEVs.
- c. Low/zero carbon technology, such as battery electric vehicles (BEVs) and fuel cell electric vehicles (FCEVs).

3. Public Electric Vehicle Charging Stations (SPKLU)

Electric Vehicle Charging Stations (EVCS) can be divided into three basic categories:

- a. Residential Charging Stations: Electric vehicle charging components are installed and used at home.
- b. Commercial Charging Stations: Electric vehicle battery charging equipment is installed and used while parked, such as in offices, malls, industries, and similar places. Commercial charging stations can be either paid or free.
- c. Public Electric Vehicle Charging Stations: Electric vehicle charging components are placed in public areas similar to traditional fuel stations, with various direct and indirect supporting facilities. These charging stations are generally paid and referred to as SPKLU in the Presidential Regulation.

In 2019, PT. PLN (Persero) adopted the IEC (International Electrotechnical Commission) standards for electric vehicle chargers as the Indonesian National Standard (SNI). Based on the previous points, it is evident that state intervention is crucial for the realization of the Indonesia Battery Corporation (IBC) to enable Indonesia to become a global producer of electric vehicle batteries. This aligns with Indonesia's national interests in economic growth and development, contributing to the nation's efforts to become a strong country.

Conclusion

In facing technological advancements, government intervention is necessary to support the achievement of national interests. Indonesia Battery Corporation (IBC) operates in the battery industry for electric vehicles as part of the Indonesian government's initiative to enhance development. Therefore, government control over battery trade is crucial. Full government control can position Indonesia as a global battery producer. With the policies and regulations enacted, it is hoped that becoming a global producer of electric vehicle batteries will strengthen Indonesia as a nation.

Furthermore, fostering a robust battery industry can reduce dependency on fossil fuels, mitigate the adverse effects of fluctuating oil prices on the

economy, and promote sustainable energy practices. This transition not only aligns with global trends towards green energy but also presents opportunities for economic growth, job creation, and technological innovation within the country. By becoming a leader in the electric vehicle battery market, Indonesia can significantly enhance its international standing and economic resilience.

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