

# The Urgency of Using Electric Vehicles and Creating an Adequate Legal Ecosystem

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## ABSTRACT

For centuries, fossil-fuel vehicles have been human's dearest friend. It all began on early 20th century when fossil fuel started to activate human's machines and transportation system, as well as human's activities. It can't be denied that fossil fuel gave so much easiness. But then, in the other side those are also consequences that can't be denied coming from the using of fossil fuel. Those consequences are turning into the urgency for human to move from using fossil-fuel vehicle onto electric vehicle. This research aims to determine the urgency of using electric vehicle, accompanied by the shape of adequate legal ecosystem that needed to accelerate the using of electric vehicle itself. The method used is sourced from secondary data to support the arguments in this article. The data collection technique uses a literature study by collecting data through books or other legal literature and online sites that are relevant to the problems written in articles, as well as through laws and regulations, books. The data analysis technique used in this study is a descriptive data analysis technique, which means it provides an overview of the data collected through parsing sentences with the aim of providing an explanation of the data studied and getting conclusions about answers to existing problems. The results of this study indicate that the perfect momentum to move from motor vehicles onto electric vehicles is happening at this time; considering the massive technological development, the side-negative-effect of using fossil fuel, and the issuance of Presidential Regulation No. 55 of 2019 concerning the Acceleration of Battery-Based Programs for Road Transportation –which is expected to be the first step in creating the adequate legal ecosystem.

**Keywords:** *Electric Vehicles, Motor Vehicles, Urgency, Legal Ecosystem.*

## 1. INTRODUCTION

At this time, the peoples development are going massively at very fast pace. A lot of breakthrough invention has been found. Many of them are changing how people socialize. With the spread of COVID-19 pandemic which quickly force people to leave conventional things, what-called "living" now is basically could digitally accessed which make everything faster and easier.

This massive-disruptive changing are certainly demanding supports form other related sectors. And the transportation sector isn't an exception. The role that held by transportation sector is very important. Although now we are able to reach the globe from gadget screen, transportation sector is still needed to run many things, Especially to determine the national energy demand. [2]

such as logistics, health care, and economy obviously. And the reality shows that adequate supplies from transportation are needed for digital development. Which means, these two things could walk side-by-side and complete each other, for example: online driver services, delivery services, and those are also many advance features implanted on vehicles nowadays.

Modern era require some breakthrough-modern-transportation system as well (re: the advanced, efficient, and fast transportation). Not stopping there, considering the current nature environmental condition right now, environmentally friendly vehicles are also needed. And this thing couldn't be found in fossil-fuel vehicle. This might be the right time for people to shift onto the more advanced, efficient, fast, eco-friendly yet integrated transportation in electric vehicle.

## 2. FORMULATION OF THE PROBLEMS

1. How is the history development of electric vehicles over the years?
2. How is the realization of the use of electric vehicles?
3. What are the urgencies of using electric vehicles?
4. How to create an adequate legal ecosystem to support the acceleration of the use of electric vehicles?

## 3. PURPOSE OF ARTICLE WRITING

1. To determine the urgency of using electric vehicle
2. Knowing the adequate legal ecosystem to support the acceleration of the use of electric vehicles

## 4. FINDING AND DISCUSSION

### *4.1 Electric Vehicles From The Historical Side*

Historically, the development of electric vehicle had begun on early 20th century in United States. Even the electric vehicle was the most widely used vehicle at that time, beating fossil-fuel vehicle [1]. This happened because apart from being free of emission, but the electric vehicles are also free of vibration and noise which is far from fossil-fuel vehicle –hereinafter will be called as motor vehicle. Other than that, the process to starting the engine is much easier. Unlike motor vehicle which still using crank type starter (at that time).

It was the first period of electric vehicle development in the world. This era entered it peak at 1912. But then, after that the interest in using electric vehicle is drastically decreased. That mark the second period of electric vehicle development.

It was the roads addition that begun the downfall of electric vehicle. With the roads increased means that vehicles with long distances are necessary. This is what electric vehicle couldn't accommodate at that time. Then, the invention of electric starter by Kettering replaced crank type starter and increased public interest in motor vehicles. Not to mention the discovery of oil reserves in state of Texas which means United States has local oil source that can supply oil with lower price.

On the other hand, there was no regulation regarding the electrical system in United States at that time. This created many differences in electricity voltage in every state, which complicate the battery charging process.

The turning point in the development of electric vehicles happened in 1970 when there was an oil crisis in

the United States due to an embargo by OPEC (Organization of The Petroleum Exporting Countries) on oil exports to United States. This crisis triggered the emergence efforts to reduce the dependence on using fossil fuel and switch to alternative fuels.

The third period of the development of electric vehicles began in the last fifteen to ten years. Not only caused by the dwindling availability of fossil energy sources, the third period was also triggered by the conditions where all the technology needed to develop electric vehicles at top pace was available. Plus, the understanding of negative impacts of fossil energy begins to grow along with the development of knowledge and researches. This is marked by the agreement of the Kyoto Protocol which operationalized the United Nations Framework Convention on Climate Change (UNFCCC) and various international programs that specifically aim to reduce gas emissions into the air.

### *4.2 Realization of The Use of Electric Vehicles*

Based on data from the International Energy Agency (IEA), the use of electric vehicles in the world right now is experiencing a very fast development. In 2018, there were 5,1 million electric car fleets globally. Also, there was an increase of 2 million from previous year with sales of electric cars have also doubled.

Currently, the largest electric car market is held by China. Followed by Europe and United States. This happened because the supportive policies that given by the governments of these countries.

Meanwhile, data from Indonesia shows the opposite. Many people still choose motor vehicles for their activity. There were a consistent raising in the use of motor vehicles during 2007-2017, according to data from Badan Pusat Statistika –the central statistics agency in Indonesia. The highest sales was in 2012 and 2013 due to commodities boom which increased the people's incomes. So that it was directly proportional to the increase in demand of motor vehicles.

### *4.3 The Urgency of Using Electric Vehicles*

Fossil fuel such as coal, oil, and natural gas seem to have become the main “motor” in driving human's life. And this has happened over period of not only years, but centuries. Using fossil fuel gave much easiness. But that easiness isn't came without any dangerous side effect.

The use of fossil fuel might be one of the biggest factors that made global warming, climate change, and pollution. How come? Pollutants produced by burning fossil fuels are very dangerous and far from environmentally friendly. Even the air pollution caused by fossil fuel has exceeded the limit. And now air

pollution has become a serious threat for plants, wildlife, and human health obviously [6].

Air pollution is also the “mastermind” behind the emergence of asthma, cancer, heart, and lungs disease. In fact, it is estimated that more than 60.000 people in the United States die every year caused by heart and lung disease.

There are so many hazardous pollutant that produced by burning fossil fuel. But many people are choose to underestimating these matter. For example, smoke; one of the most dangerous pollutant that has been underestimated and ignored by people.

Most of smoke consists of the ground-level ozone, carbon monoxide, and various elements of dust particles. This ozone isn’t the same as the ozone layer to protect the eath from ultraviolet. Ground-level ozone is a pollutant that contain various effect that might harm human body

Ground-level ozone can irritate the eyes and damage the air sacs in the lungs –which in fact are the site to exchange oxygen and carbon dioxide– causing shortness of breath, headaches, nausea, and worsening respiratory problems such as asthma. Yes, it is true that most of smoke is produced in urban areas. But the wind that blows can carry it to rural areas or even to other cities. This shows that the problem of pollution knows no boundaries and can easlity become a global problem.

Considering how dangerous the problems caused by fossil fuels that widely used to power motor vehicles and also paying attention to the momentum of technological development, it is true that the use of electric vehicles has a high urgency.

Unlike motor vehicles, electric vehicles do not produce exhaust gases or emission. Means, it does not contribute to environmental pollution or global warming. Sadly, based on previous data from Badan Pusat Statistika, it is clear that Indonesia right now is at a point of concern. Because the number of motor vehicle –which is constantly raising– is directly proportional to the number of pollutants produced.

The good news is that the Indonesian government is now starting to pay attention to this problem. With President Joko Widodo to plans to make Indonesia one of the centers of electric car industry in the world. The government is also trying to downstream the nickel industry which will later can be produced into lithium batteries –the most important components in electric cars.

Indonesia has also issued the regulation to accelerate the electric vehicle program in the Presidential Regulation No. 55 of 2019 concerning the Acceleration of Battery-Based Programs for Road Transportation. This regulation also arrange the incentives provided to

encourage acceleration in efforts to convert towards electric vehicles.

#### ***4.4 Creating A Legal Ecosystem in Supporting The Use of Electric Vehicles***

The government’s efforts in issuing Presidential Regulation No. 55 of 2019 is certainly not without any definite goals. Indonesia’s commitment to implementing the UNFCCC itself has already begun in several years ago with the issuance of Law No. 30 of 2007 concerning Energy, followed by Government Regulation No. 79 of 2014 concerning National Energy Policy, and Presidential Regulation No. 22 of 2017 concerning the General National Energy Plan [3].

That three legal instruments are deemed not adequate enough to regulate the use of electric vehicles. This is the basis for the issuance of Presidential Regulation No. 55 of 2019, that also followed by the stipulation of six new ministerial regulations in 2020 which serve as technical guidelines to support the acceleration of the use of electric vehicle.

But then, the stipulation of laws and regulations alone is not enough to accommodate the acceleration of the use of electric vehicles. An atmosphere of legal ecosystem is also needed to encourage the development of the electric vehicle industry. However, the Presidential Regulation No. 55 of 2019 is expected to be the first step in creating the legal ecosystem.

Bradbook (2011) argues, that there are at least five factors needed to determine the success of government in creating a legal ecosystem.

- 1) Legal protection for consumers, producers, and especially investors
- 2) Support of adequate legal instruments. This one has been reflected as success in 2007 when kerosene was replaced by LPG (Liquefied Petroleum Gas) for household needs and micro-industry
- 3) Legal protection for not only on a national scale, but also on a local scale. As for small businesses that produce supporting accessories
- 4) Establishment of a legal ecosystem that based on education for public and investors
- 5) The legal ecosystem must be stable, even though if the government would change

## **5. CONCLUSSION**

This modern era is a perfect momentum to start shifting from the use of motor vehicles to electric vehicles that not only have more benefits, but also far more superior. Paying attention to many dangers caused by pollution –which produced from burning fossil fuel.

Based on data from Badan Pusat Statistika, many Indonesians still choose motor vehicles to support their daily activities. This can be judged to as at a point of concern. Because the number of motor vehicle users is directly proportional to the amount of pollution produced.

The issuance of Presidential Regulation No. 55 of 2019 concerning the Acceleration of Battery-Based Programs for Road Transportation is expected to be the first step to establish a good legal ecosystem in supporting the acceleration of the use of electric vehicles.

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