

Future Challenges in Transforming Jakarta as One of The Best Green House City in Asean Region

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Abstract

The rapid growth and new formation in supply chain with logistics activities have eventually causes impacts in Indonesia, and one the issue such as climate changes has become a serious concern by every organizations especially towards the Government because it significantly contributes to bad impact towards the environment. Particularly in the sector of supply chain and logistics, focusing on manufacturing plant of production and transportation, very much indeed required the best practices to be in-placed and to create awareness to all companies, as well as the whole society in Indonesia. This research is focus on sustainable development on supply chain particularly in the production process and logistics activities such as transportation, preferably focusing on low greenhouse gas emissions. With this write-up research, the result of this paper is supposed to share relevant opinions in relationship between sustainability strategy in green supply chain and logistics performance. This research paper still required revision due to the lacking of data collections and time limitation were foresee. This paper solely based on data collected from books, articles and journals similarly or related to this topic. Originality/value: This study also examinize the sustainability strategy greening supply chain and logistics efforts in Indonesia. Furthermore, the result of this analysis might provide better ideas on how the future can minimize the bad impacts targeting on environment aspect.

Keywords: green supply chain and logistics, production, transportation.

INTRODUCTION

The term climate change has much broader implication than just a simple warming effect for the planet. It refers to major changes such as temperature, rainfall, snow, or wind patterns lasting for decades or longer. Environment degradation and loss of biodiversity go hand in hand. Logistics activities and supply chains are industries that have the most significant efforts in preventing global climate change. Some media published a report highlighting the

importance of preventing adverse impacts on the environment caused by logistics and supply chain activities. However, the efforts to prevent adverse impacts of logistics and supply chain activities on the environment are considered not yet achieving optimal value. Manufacturing and transportation industries in logistics and supply chains activities have begun to carry out green logistics activities in the operational sector by implementing good environmental principles and regulations in Indonesia. Responding to this, all problems involving the environment, vibration, disturbances and visual disturbances are among the factors that are dominant factors and are a major factor for many researchers.

LITERATURE REVIEW

1. Concept Green logistics for Supply Chain Activities

The supply chain system is a network of companies directly involved and jointly working from upstream to downstream to manage the flow of goods, cash flow and information flow to create and deliver products to the end user. In the concept of Supply Chain Management, a series of activities between suppliers to end consumers is a large unity. The information mechanism between the various components takes place transparently. The main principles in Supply Chain Management are sharing of material flow, information flow that combines all elements in the supply chain.(Natalia & Astuario, 2015). Green Suply Chain Management is a traditional supply chain management concept that is integrated with environmental aspects which include product design, supplier selection, material procurement, manufacturing activities, packaging activities, product delivery activities to consumers, and end-of-life product management (Fortuna, Sumantri, & Yuniarti, 2014).

2. Green logistics issue environment

The development of a dynamic city requires effective solutions to environmental problems that often originate realization of the logistics process of supply, production and distribution. At present, the main purpose of the activity done through logistics is minimizing the negative effects of economic activities and people's settlements, including external effects (eg congestion, environmental pollution) while increasing logistical benefits such as costs reduction and improvement of customer service. (Mesjasz-Lech, 2016) Human activity can have significant negative impact on the natural environment such as ozone depletion, accumulation of greenhouse gases and waste producers. Environmental benefits include the reduction of waste, fossil fuel consumption, and air and water. emissions as well as raising energy usage efficiency (El-Berishy, Rügge, & Scholz-Reiter, 2013). Generally, transportation is the main activity for the most part logistics services. As far as countries continue to grow rapidly, and carbon emissions are increasing. At present, significant reduction carbon emissions and costs during transportation can be achieved by optimizing the logistics network design, use the right transportation and management modes by paying attention to load capacity and routes.

3. Green for air pollution

As for air quality in cities, organization of transport is a remarkable problem. Transport processes are the origin of air pollution and waste such as tyres, oil and other materials (Iwan, 2014). That's why plans to reduce transportation intensity and emissions developed. They involve activities such as: the use of trucks with low emissions, the use of tires that are reduced by emissions, driver training to achieve environmentally conscious driving behavior, consideration of the value of internal emissions truck procurement. Another way to protect the air is to plan and implement green infrastructure solutions in Indonesia in public urban space. Another problem related to landfills is biogas emissions who are susceptible to self-ignition.

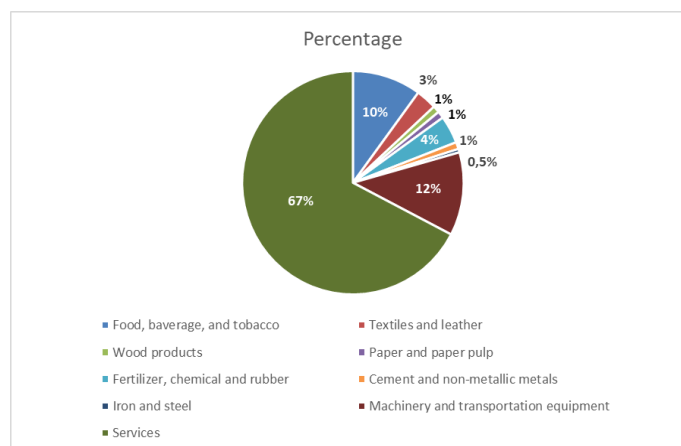
Manufacturing Plants

The main concept manufacturing plants of production in supply chain and logistics activities is about understanding the impacts of logistics design that is adapted to overall performance on the environment. The reason why the concept of production must be learned at the beginning of this synchronized system is because production is the first activity in the supply chain and logistics. The damage of production that we will discuss is energy consumption, material selection, and waste.

- **Energy Consumption of Manufacture Plants in Jakarta**

Energy is used by producers in the manufacture of goods from raw materials and then passes through several processes and stages to become finish goods. Economically, energy plays a role in adding product value because it is used in the manufacture of these goods. At every stage in manufacturing there are opportunities to improve energy efficiency. Processing that varies greatly according to industry makes it impossible for researchers to write it in this research.

Percentage of Industry and Service Sectors in Indonesia in 2016



Based on the diagram above, for manufacturing sector, the machinery and transportation equipment industry contribute 12% of pollution to the environment.

Indonesia is the largest energy user in Southeast Asia, which is more than 36% Southeast Asian primary energy use. Between 2000 and 2015, domestic products Indonesia's gross (GDP) doubled and electricity demand increased by 150%. Arrange the economy to boost Indonesia's energy needs. Required additional 4.1 gigawatt (GW) of electricity generation capacity per year until 2030, where 50% of them come from coal power plants. Procurement is very important to save energy and costs and reduce emissions.

Implementation of the latest energy efficiency policies that are implemented effectively estimated to reduce 2% of energy use by 2025. Strengthening against Current policies and policy plans that have not been implemented are estimated reduce 4.5% of energy use when compared to nonexistent scenarios policy change. However, there are still many greater energy savings can be done.

Significant electricity savings are possible from increased efficiency lamp energy. The transition to the use of energy-saving lamps of the CFL type (compact fluorescent lamps) in the last decade supported by the Government's program save on electricity bills of USD 3.3 billion in 2016. LED lights (lightemitting diodes), which are more efficient, currently starting to increase their share by 30% of total sales in 2016. If the trend of LED lighting usage continues, customers Indonesian electricity is estimated to be able to save USD 560 million per year in 2030.

- **Road Transportation**

In the context of transportation of goods in green and logistics supply chain in Indonesia, this relates to the movement of materials and products along the supply chain that might be involves incorporating environmental measures

when designing logistics and distribution networks in order to reduce the bad impacts of the supply chain and logistics activity to the environmental.

For goods transportation by land in Indonesia, between 2000 and 2015, the growth effect doubled, which reflects the increasing demand for freight services along with economic growth. Like passenger vehicles, the impact of energy efficiency on goods vehicles are very limited to compensate for the effects of growth, which are caused not the existence of fuel efficiency standards, as also happens in some other parts of the world (IEA, 2017e). Between 2000 and 2015, the energy intensity of light-weight goods vehicles improved by 4%, whereas for the medium and heavy types both improved 7% and 8% in the period of time same.

Statistical data show that more than 90% of total road transportation still uses fuel oil to operate. This has caused similar demand for world oil which has reached 60%. Because of this, we provide a solution for the efficient use of fuel by replacing these fuels with gas or sunlight.

METHODOLOGY

The authors have used Descriptive Research Method because it is used to describe the characteristics of the phenomenon being studied. The data is done from books and journals in that similarly or related to this topic. The characteristics used to describe the situation are usually some kind of categorical scheme also known as descriptive categories. Methodologies employed for this study were formulated on the basis of empirical studies where conclusions and inferences were made based upon actually occurring situations (Sureeyatanapas, Poophiukhok, & Pathumnakul, 2018).

DISCUSSION AND RESULT

Energy efficiency needs to be centralized to this transition if the Government and society want to avoid unnecessary social and economic costs for energy infrastructure. Energy efficiency has provided significant benefits to Indonesia.

As in other developed and developing countries, effective implementation and enforcement of energy efficiency policies is very important to achieve success. Policy will make progress, but there are many other things that can be done so that it can realize greater profits in the future. Indonesia is ready to gain various benefits from energy efficiency. In order to achieve this, Indonesia can learn from the experiences of other countries both in Southeast Asia and globally. Indonesia can also be an example for other developing countries how to realize the ambition above to be an effective action.

The results obtained from this discussion are:

1. Challenges

The energy use cycle in the manufacture of products shows the impact of the total energy use, in each stage of the manufacture of products from the operating period to the time of disposal of waste. If in the activities of industry players tend to consume and need a lot of energy, it will have an impact on the environment and it will stop when the product has been finished and ready to be sent. In the process of shipping goods, each industry will usually use transportation services which that activities can also have an impact on air pollution. The existence of several technologies and innovations also cannot achieve energy saving targets optimally. Therefore, in practicing a management system is needed for the maintenance and prevention of adverse effects on the environment caused by industrial activity itself.

2. Opportunity

The main concept of the energy life cycle is to create opportunities for superior product values that can be started from the stage of reducing waste in manufacturing and also continue to strive to implement savings programs in energy use. Innovative technology binds all stages of the energy life cycle.

Industrial opportunities are utilizing the same innovations that enter their products and apply them to their energy use.

We provide a solution for the efficient way for industry to use natural resources such as:

- electric power
- wind power
- solar panel system
- natural gases
- steam supply
- water supply
- sewage removal

CONCLUSSION

The impact of Indonesia's energy system is moving outside Southeast Asia and starting globally. Increasing energy demand as a result of economic growth and increasing access to energy, will create various challenges to Indonesia's energy system historically depends on fossil energy. Energy needs will be the center of this if the government and society want to avoid unnecessary social and economic costs energy infrastructure.

Based on the results above, the conclusions are:

- People awareness of the impacts of pollution to the environment is the most important thing that need to be emphasized.
- Jakarta can provide better progress in handling the effects of pollution on the environment caused by logistics activities by applying several technologies and use natural resources such as solar panel system in industry activity.
- Government support in providing regulations and punishing perpetrators of violations is needed, considering that Indonesia has speed up investigations into forest fires allegedly set by oil palm companies in Riau.

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