

**ENVIRONMENTAL COMPONENT OF THE LOGISTICS
INDUSTRY**

Mazko E.V., student

Scientific supervisor – Levitskaya M.S., senior lecturer

English language department №1

Belarusian National University of Technology

Minsk, Republic of Belarus

Basic logistics issues include determining what to purchase, the volume of purchases, selecting suppliers, and purchasing terms. However, modern logistics is expanding the scope of its interests touching upon important considerations related to the environmental situation in the world. The reason is that vehicles, which play a key role in supply chains, are the source of 60% of air pollution and in the future, the growth of maritime and, in particular, air transport may have a significant impact on the level of emissions from the transport sector [1].

Another major environmental challenge for the logistics sector is the consumption of non-renewable resources, especially fuel. Despite the increasing promotion of electric vehicles, the logistics sector still relies heavily on fossil fuels for large-scale transportation modes such as cargo airplanes or container ships. However, new technologies can offer potential solutions to mitigate negative effects.

Environmental logistics is an approach that encompasses measures ensuring the movement of materials during any production processes until they are transformed into products and production waste which are then followed by the recycling or safe disposal of the latter in the environment. Below, there are some of the prospective environmental solutions introduced by this type logistics.

One way to contribute to environmental protection is to apply more sustainable modes of transportation. Various transportation means have a different impact on the environment. Thus, for long-distance shipping, using rail or ships can be the most eco-friendly option in the supply chain. Electric and hybrid vehicles are also emerging as more sustainable alternatives, especially for local deliveries. In 2022, 5.2 million Battery Electric Vehicles and 1.9 Plug-in Hybrid Electric Vehicles were sold worldwide. These vehicles can achieve net zero emissions if the energy

they use comes from renewable sources. Producing less air pollution and being quieter than conventional engines, these can be a preferable choice for a more environmentally-responsible logistics.

Implementation of sustainable supply chains requires the consideration of the amount of waste generated by the logistics industry. This can be accomplished by minimizing plastic packaging or replacing them with biodegradable alternatives. Various types of eco-friendly containers are available in the market, such as paper, glassine and seaweed envelopes, cellulose and cornstarch packaging, and paper tapes. It is imperative to introduce recycling into practice: using wooden pallets or packaging made of recycled plastic, for instance [2].

Another environmentally friendly and cost-efficient solution is to optimize product loads per shipment or kitting, which involves assembling individual items or component parts into a ready-to-ship package instead of sending them separately. Consolidating shipments enables full utilization of the transport containers and prevents excessive pollution or expenses.

Route optimization software is a tool that can enhance the environmental performance of logistics operations by analyzing critical factors such as vehicle availability, traffic conditions, and labor availability for loading and unloading. By means of automated route planning, logistics operations can reduce the travel distance and time of their vehicles, which, in turn, can lower carbon emissions and fuel consumption.

To summarize, since environmental issues are at the top of today's agenda due to the current context of climate change and environmental deterioration, sustainable logistics should play a crucial role facilitating transportation while minimizing its ecological footprint. There are many possible solutions for transportation companies to reduce their environmental impact at the same time saving their money and resources.

References

1. Abramova T. S. Ecological direction of development of logistics / Abramova T. S.; Kuskova E. S.; Karpova N.P. // Economics and business: collection. scientific Art. / SSEU – Samara, 2014.
2. How to be more environment friendly in logistics? Startups magazine. [Electronic resource] — Mode of access: <https://startupsmagazine.co.uk/article-how-be-more-environmentally-friendly-logistics>. – Date of access 05.03.2024.