

Chapter 2

Thesis

The aim of this study is to develop a model for assessing the energy intensity of the logistics storage system, the storage freight units (pieces), which would allow analytically determining any logistics warehouse management system's (LSM) energy intensity characterizing the handling of a freight unit in the warehouse from entry to exit, which is also sufficient to move the freight units in the processes of acceptance, storage, assembly and release.

LSM energy intensity is energy delivered to the LSM: electricity, gas and fossil fuels, etc. consumed by the loading and information interchange subsystems.

The specific energy intensity of LSM characterizes the determined volume of cargo or annual turnover—wherein the monograph defines contractual modes of work of LSM and the corresponding LSM energy intensity of these processes:

1. The energy intensity of moving a freight unit in the LSM,
2. The energy intensity of the shortest time of handling a freight unit in the LSM,
3. Other, e.g. energy intensity of the freight unit with a maximum LSM gain.

In the LSM, significant impact on the level of energy intensity is delivered by: the mission and strategy of LSM, resulting from the optional division of logistics systems (e.g. military logistics, courier logistics). This issue has been omitted in the monograph for lack of comparative data, but it could be the subject of further research papers.

Theoretical considerations in the paper were verified with the method for the assessment of energy intensity of LSM handling freight units, pallets, pieces, with a module of 800×1200 mm, working within the hubs in Poland PROLOGIS and Panattoni Park and the available foreign results.