HOW TO NOT WASTE GLASS WASTE
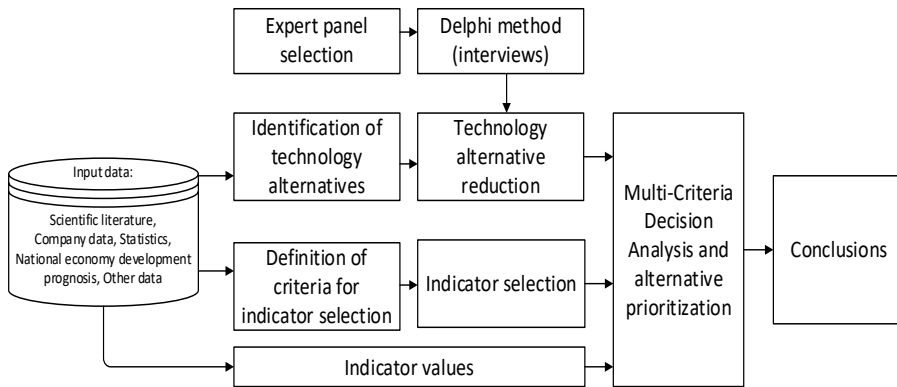
Jana ZUBRICKA[1*], Anna KUBULE[2], Dagnija BLUMBERGA[3]

[1–3] *Institute of Energy Systems and Environment, Faculty of Natural Sciences and Technology, Riga Technical University, Āzenes iela 12/1, Riga, LV-1048, Latvia*

* *Corresponding author.* Email address: Jana.Zubricka@edu.rtu.lv

Abstract – As a highly versatile material, glass is used for numerous significant applications in our lives: from building structures to household products, to optical instruments, etc. Even more impressive than its versatility is the theoretically endless recycling opportunities of glass. While closed loop recycling is preferred due to raw materials savings and lower CO_2 emissions, it is oftentimes hindered by the quality and impurities in the collected glass waste. The technical limitations to recycling may be application specific, for example, if the post-consumer glass collection systems cannot guarantee the required high quality and thus closedloop recycling is disregarded. Moreover, there are economic and environmental limitations to glass recycling. The aim of the paper is to set a base for comparative analysis of scenarios for the potential development of glass recycling model in Latvia. The methodology algorithm of the proposed study consists of three main parts, namely, composition of database required for the analysis, building of the analysis framework, i.e., selection of technology alternatives and assessment criteria (indicators), and application on MCDA by TOPSIS method. A literature review on novel glass waste valorization techniques is performed and the summary conclusions will be used for further research development.

Keywords – Glass waste; recycling; technology alternatives; valorization

Methodology algorithm of the study.