

LIFE CYCLE ASSESSMENT BASED TOOLS FOR THE DEVELOPMENT OF INTEGRATED WASTE MANAGEMENT STRATEGIES FOR CITIES AND REGIONS WITH RAPID GROWING ECONOMIES

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EXTENDED ABSTRACT

The presented project, which aims at the development of tools to support waste management planning and optimisation in European cities, in particular cities from EU Accession Countries, has been initiated within the European Commission's Fifth Framework Programme: Energy, Environment and Sustainable Development Work Programme - Key action: City of tomorrow and Cultural Heritage. The Consortium of this project consists of twelve Partners, both from the European States well as EU Accession States, with TU Darmstadt as a coordinator. Although the project is supported by the European Commission, the content provided here is a responsibility of the project partners and does not necessarily represent the opinion of the European Community.

The main objective of the project is to develop two tools: (i) a prognostic model to predict quantity and composition of municipal waste and (ii) a performance assessment system for alternative waste management scenarios. The latter will consist of a set of qualitative sustainability criteria along with quantitative impact indicators enabling assessment of waste management strategies. The three sustainability aspects to be considered are environmental, economic and social aspects. Targeted end-users are municipalities, as decision makers in waste management planning. Deliveries of the project, both a waste prognostic model and a waste management system assessment model will be verified in six cities in Southern and Eastern Europe

In this paper the concept of the assessment model is described in more detail. Model development within the project consortium is split to three areas of assessment: environmental, economic and social, each supervised by another project partner. In this paper solely the undertaken approach of the environmental assessment is presented. One of the major challenges of the EU Accession Countries in waste management area is to comply with the European waste legislation. However, the targets of EU waste policy can be achieved in more or less efficient ways. The goal of waste management system is to effectively manage waste through resource conservation, optimise the use of waste treatment technology and limit waste disposal. The proposed assessment method will be based on a life cycle assessment (LCA) approach i.e. the borders of assessment will be extended to account for all relevant aspects resulting from a waste management system. The LCA methodology typically used for environmental assessment of a product is complex and its results are difficult to interpret for a non expert. Therefore, in this project an attempt will be made to develop a simplified LCA method, which is suited solely for waste management planning purposes.

Key words: sustainability indicators, environmental assessment, simplified LCA, municipal waste management, EU Accession Countries