

ENVIRONMENTAL DECISION-MAKING USING GIS AND LCA

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ABSTRACT

A new approach to environmental decision-making is explored. Essentially it consists of a decision support system based on the combined use of Life Cycle Assessment (LCA) and Geographic Information Systems (GIS). As a consequence, decision-making is carried out taking into account site-dependent issues concerning the entire life cycle of the system under study. The advantages in environmental decision-making are that we can combine the holistic view of LCA with the visualization power of GIS. Photovoltaic systems and solid waste landfilling are discussed as case studies for implementing this approach. For both cases we address the current environmental concerns and we provide decision support according to the main observations and targets of each application.

Keywords: Decision-making, LCA, GIS, PV, landfills, solid waste management, renewable energy.