

USING LIFE CYCLE ENVIRONMENTAL COST ANALYSIS FOR ENVIRONMENTAL PRODUCT DECLARATION

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ABSTRACT

Providing objective, credible and quantitative description of the environmental properties of products is the primary function of any certified Environmental Product Declaration (EPD). This description should be viewed from a comprehensive life cycle perspective. Certified EPDs should be applicable to products within clearly defined product groups to ensure comparability in the assessments of their environmental properties. The quantitative information included in a certified EPD should be separated for the phases of Life Cycle Assessment (LCA). The phases describe the results of the LCA study from raw material to manufactured product at the industry, distribution to the market, product use and transport to disposal facility, recycling and waste handling.

Life Cycle Environmental Cost Analysis (LCECA) tool is used for interpreting the outcomes of a LCA in terms of environmental costs. The new category of eco-costs includes eight eco-costs namely, cost of effluent/waste treatment, cost of effluent/waste control, cost of waste disposal, cost of implementation of environmental management systems, cost of eco-taxes, cost of rehabilitation (in case of environmental accidents), cost savings of renewable energy utilization, and cost savings of recycling and reuse strategies. It estimates as well as correlates the effects of these costs in all the life cycle stages of a product. Subsequently, LCECA identifies the feasible alternatives for cost effective, eco-friendly products.

LCECA can be used to find out the eco-costs of the product in each of its life cycle phase pertaining to the environmental burdens caused throughout the product life cycle. This facilitates to find out the possibilities of alternatives ensuring more eco-friendliness and cost effectiveness of the product. Also product comparisons within the product groups are also be done with reference to the costs involved. Attaching this cost analysis will be a sign of Extended Producer Responsibility (EPR), which has to be attributed with any manufacturer today. This paper evolves a methodology for the usage of LCECA in EPD development by the manufacturers.

Key words: *Environmental Product Declaration (EPD), Life Cycle Assessment (LCA), Life Cycle Environmental Cost Analysis (LCECA), Eco-costs, Extended Producer Responsibility (EPR)*