

Eco-efficiency: Inside BASF and Beyond

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BASF uses Eco-efficiency to evaluate the environmental and economic aspects of products and processes. It is a versatile tool that starts with a “Base Case” and then expands the analysis to include “Scenarios”, which determine the effect of varying the input data. The Eco-efficiency Manager allows the end-user to assess the environmental and economic impact of variables specific to their application, such as differing production methods using the same raw material, or differing cost structures. Three case studies will be presented:

- an Eco-efficiency Manager for textile dye works in Morocco
- an Eco-Logistix Manager for transportation logistics decision-making
- an Eco-efficiency on refrigerators with potential application in the consumer sector.

Textile Dye Works Case Study

The Eco-efficiency Manager for textile dye works in Morocco was developed by BASF for the United Nations Environmental Protection and United Nations Industrial Development Organization (UNEP/UNIDO) National Cleaner Production Center (NCPC) in Morocco. The goal was to provide a tool to support sustainable development in emerging markets for use by developing industries. An Eco-efficiency analysis was carried out for various dyeing processes and products. These results were then combined with a cost-analysis tool which included raw material and equipment prices. The final results were assembled in an Eco-efficiency Manager, so that the combined environmental and economic impacts of various processing and capital investment decisions can be shown. The NCPC and BASF Morocco were trained in the use of this tool, to be able to provide its use as a consulting service for dye-houses. Upon completion of the pilot project in Morocco, UNIDO anticipates initiating similar programs in all 23 of its NCPCs.

Logistics Case Study

The Ecologistix Manager is a tool to determine the best mode of transportation for bulk shipment of materials. The environmental and cost impacts of truck vs. rail transport are evaluated for Europe. This tool can be used by both customers and internally when making decisions with regards to material movement.

Refrigerator Case Study

An Eco-efficiency analysis was done to determine whether replacing an old refrigerator with a new energy-efficient model is preferable. The study showed that purchasing a new refrigerator can be cost-effective and reduce the environmental burden. These results could potentially be used by a consumer in order to make a buying decision which supports sustainable development. BASF is committed to sustainability. We have developed both an analysis method for products and processes, and a user-friendly interface to make this method more accessible to customers and other external parties. We offer our customers workshops, courses and joint projects in support of this. Thereby Eco-efficiency is not only a company-internal sustainability tool, but can be put to use industry-wide and beyond.