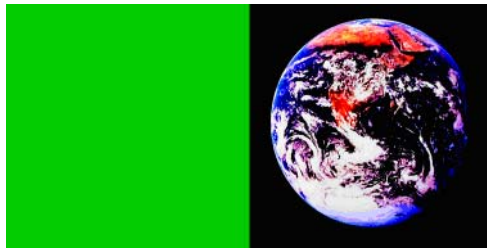


FACT SHEET



ECO-EFFICIENCY

HISTORY

The BASF eco-efficiency tool was developed jointly by BASF AG and an external consultant in 1996. To date, more than 250 studies have been launched or completed internally, as well as with customers, suppliers, and government, both in Europe and North America.

OVERVIEW

- BASF's eco-efficiency analysis is a strategic lifecycle tool that compares the relative ecological and economic efficiencies of alternative products, production processes, and technologies.
- It is a critical part of our strategy to position BASF to respond to the many sustainability issues that we have and our customers will face in the future.
- Our goal is to offer our customers the best possible products, processes, and technologies with the least environmental impact at the best price.

THE ECOLOGICAL COMPONENT

Eco-efficiency analysis looks at the entire life cycle of a product, beginning with extraction of raw materials through the disposal or recycling of the product. An "ecological fingerprint," Figure 1, provides a picture of the environmental effect of a product in six categories:

- Materials consumption
- Energy consumption
- Emissions to air, soil, and water
- Risk potential
- Toxicity potential
- Land use

Each of these categories embraces a wealth of detailed information, some of which comes from BASF's in-house records and some from public databases.

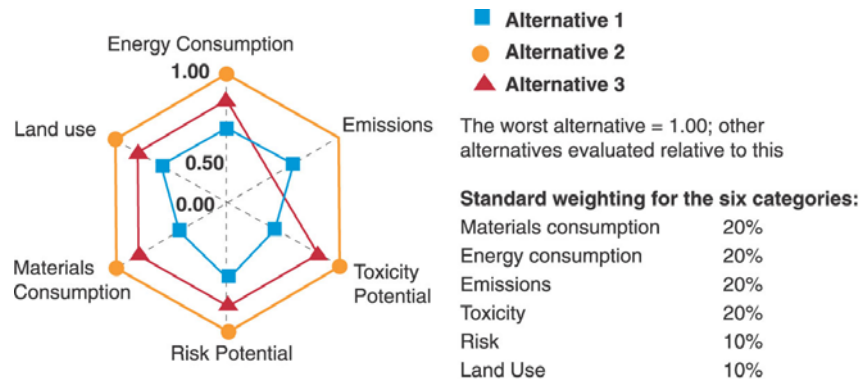
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Products Better™

 **BASF**
The Chemical Company

The Ecological Component



The environmental impacts of various alternatives are compared by using lifestyle inventory data to develop an "ecological fingerprint".

FACT SHEET

ECOLOGY + ECONOMICS: THE PORTFOLIO

Social and statistical weighting factors are used to develop a single value to describe the ecological fingerprint for each product or process. Each of these values is then plotted against the total lifetime cost for the alternative (derived from an economic analysis) on the eco-efficiency profile.

The Product Portfolio

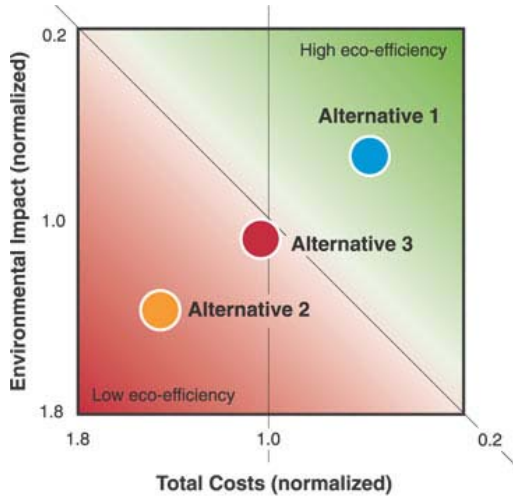


Figure 2

CASE HISTORY

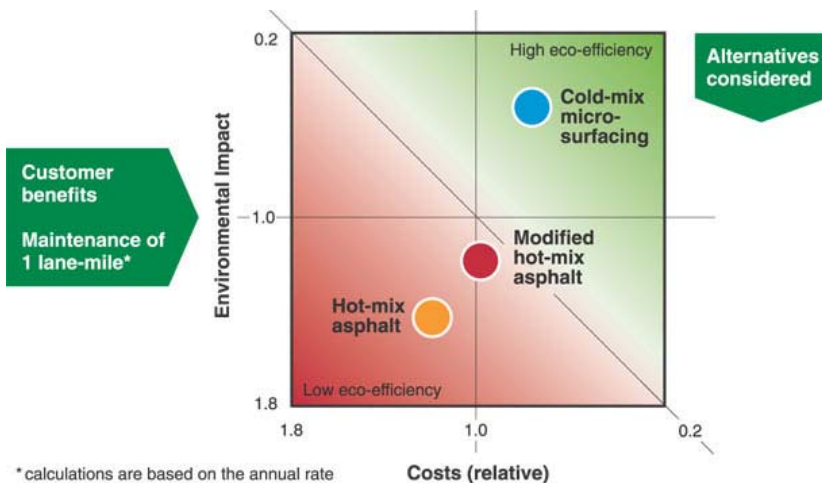
Maintenance of Asphalt Roads

Every year, millions of miles of roads are resurfaced around the world. BASF supplies asphalt-modifying polymers, which extend the life and improve the performance of traditional hot-mix asphalt and also make cold-mix micro surfacing possible.

- BASF and a major supplier and customer conducted a study comparing three preventive maintenance technologies of existing roadways: traditional hot-mix overlay, polymer modified hot-mix overlay and cold mix micro surfacing.
- Results indicate micro surfacing is the most effective and efficient use of natural resources; it uses less energy, less raw material consumption, and generates fewer emissions.
- The micro surfacing technology provides a better balance between cost-effectiveness and environmental impact,

The environmental impacts of various alternatives are compared by using lifecycle inventory data to develop an “ecological fingerprint.”

Maintenance of Asphalt Roads



* calculations are based on the annual rate

Figure 3