

**Keywords**  
Sustainability  
Environmental profile  
Product life cycle

# EcoDesign Strategy Wheel

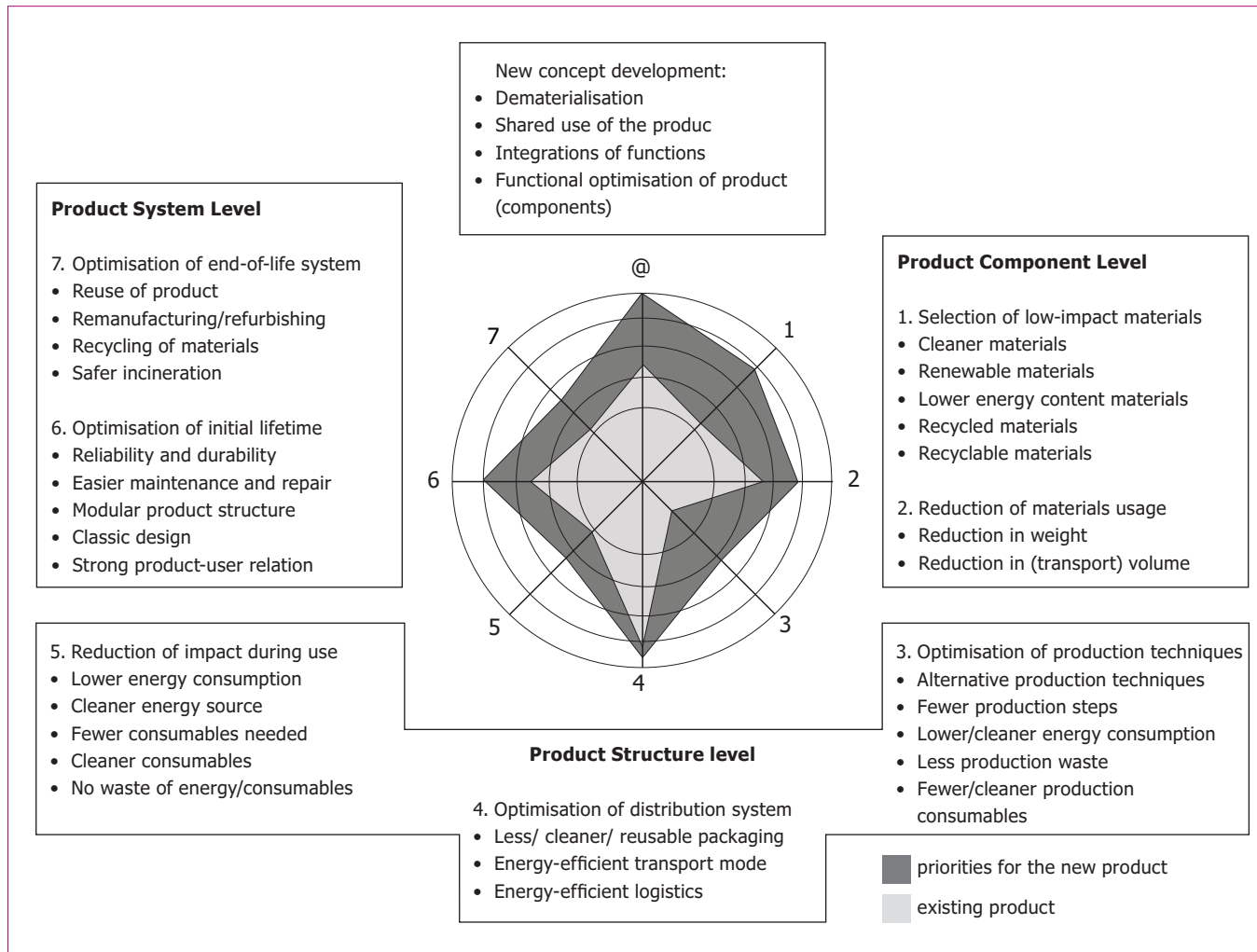


fig. 2.5 The EcoDesign Strategy Wheel (Brezet and van Hemel, 1995)

## What Is the EcoDesign Strategy Wheel?

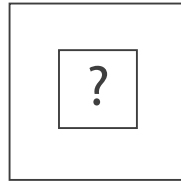
The EcoDesign Strategy Wheel (also called Life cycle Design Strategies - LiDs, see fig. 2.5) visualises the strategies that can be followed for EcoDesign.

The development of new products will inevitably have an impact on the environment. To minimise the impact on the environment, you can follow an EcoDesign strategy. The EcoDesign Strategy Wheel is a tool to select and communicate the EcoDesign strategies.

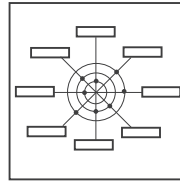
The EcoDesign Strategy Wheel presents 8 EcoDesign strategies: new concept development, selection of low-impact materials, reduction of materials usage, optimisation of production techniques, optimisation of distribution system, reduction of impact during use, optimisation of initial lifetime, and optimisation of end-of-life system. Most of the EcoDesign strategies relate to the product life cycle. The first strategy is different, since it relates to a much more innovative strategy than the others. Some strategies relate to the product component level, some to product structure level and others to the product system level.

During the analysis of the environmental product profile, many improvement options will have come up spontaneously. These improvement options can be grouped according to the classification of eight EcoDesign strategies and visualised in the EcoDesign Strategy Wheel as EcoDesign strategies in the product design project. To generate even more

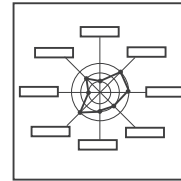
## How to EcoDesign Strategy Wheel



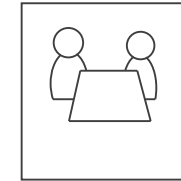
define product  
idea



determine values



create a  
diagram



analysis

improvement options, the project can also go the other way around by using the EcoDesign Strategy Wheel as an option-generation tool.

You can visualise the results of establishing the most promising EcoDesign strategy for the project by using the EcoDesign Strategy Wheel. Next, once you have established EcoDesign priorities, you can draw them up and visualise them by adding two activity lines to the EcoDesign Strategy Wheel: short-term activities versus long-term activities. This makes it easy to communicate the EcoDesign strategy both internally and externally.

Finally, the EcoDesign strategy which is established for the short term is included in the list of requirements for the product to be redesigned. You should describe the environmental requirements quantitatively as far as possible. At a later stage this will facilitate the mutual comparison of various product concepts or detailed solutions.

## When Can You Use the EcoDesign Strategy Wheel?

The EcoDesign Checklist is best applied in the first stage of a product design process, the problem analysis stage. The EcoDesign Strategy Wheel is best applied to present and select new strategies for product design, possibly with a general product idea in mind. The EcoDesign Strategy Wheel is often used in combination with the MET Matrix (Brezet and van Hemel, 1997. see fig. 2.6) as a tool to avoid missing any environmental impacts of the product and also in combination with the EcoDesign Checklist.

In practice, it is preferable to do the analysis of environmental problems and the creative thinking about options for improvement in groups. Such a group consists of the project team and possibly other stakeholders.

## How to Use the EcoDesign Strategy Wheel?

### Starting Point

The starting point of the EcoDesign Strategy Wheel is formed by the information from the EcoDesign

Checklist and the MET Matrix. Another starting point for the Strategy Wheel is a first view on the direction for product design (first product ideas included).

### Expected Outcome

The expected outcome of using the EcoDesign Strategy Wheel is a clear understanding of possible strategies for new product design. Based on this understanding, you can make a selection of the strategy you will apply in the next phase: product design.

### Possible Procedure

- 1 Define the product idea, product concept or existing product that will be analysed.
- 2 Systematically score the product on each dimension of the Strategy Wheel. You can use the answers from the EcoDesign Checklist and/or the data from the MET matrix.
- 3 Consider the optimisation options for each of the dimensions, paying special attention to those on which the current design scores badly and those that have the most relevant environmental impact for that product (based on the MET matrix).

	Production	Use	Disposal
Materials			
Energy			
Toxicity			

fig. 2.6 The MET Matrix (Brezet and van Hemel, 1997)

### Tips and Concerns

- Use the EcoDesign Strategy Wheel together with the MET Matrix and the EcoDesign Checklist (see 'EcoDesign Checklist', in this section).
- Do not only consider technical solutions but also psychological ones. How does the design influence the user regarding energy efficiency, length of the life cycle, and end-of-life.
- Be aware that some EcoDesign strategies may strengthen each other, but some can also conflict with each other. The same goes for EcoDesign strategies and normal design and business considerations.
- Recheck your final redesign to see whether it offers the same functionality as the 'old' product, both physically and immaterially.

### References and Further Reading

Brezet, H. and Hemel, van, C. (1997) *EcoDesign: A Promising Approach to Sustainable Production and Consumption*, France: UNEP.

Remmerswaal, H. (2002) *Milieugerichte Productontwikkeling*, Schoonhoven: Academic Service

