

# Eco-Design

The ever increasing demand for goods and services and the manufacturers' and service providers' tendency to maximise their profit have resulted in overexploited natural resources, environmental pollution, and the proliferation of all kinds of waste. Every process of production and consumption of goods and services, even eco-friendly ones, has some negative impact on the environment. Adopting eco-design can minimise this impact to a great extent.



## Production

**Impact:** The process consumes large amounts of energy; causes pollution and depletion of natural resources, which are mostly non-renewable.

**Solution:** optimize production processes; assemble products so that they can be easily separated into their different components for repair or recycling.

## Packaging

**Impact:** It generates a significant quantity of solid wastes, thus causes pollution.

**Solution:** concentrate products; reduce the amount and volume of packaging.

## Transportation

**Impact:** Many products travel thousands of kilometres before being used, this increases the carbon footprint of the product.

**Solution:** choose manufacturing sites nearest to the products' final destination, use combined transport and alternative fuels, optimize loads.

## Use

**Impact:** Using products, operating and maintaining gadgets and appliances require energy, water, etc. Many products are designed in such a way that they require frequent replacement, thus encourage wastefulness and generate waste.

**Solution:** design energy-saving products that are lasting, safe and easy to maintain or repair.

## Disposal

**Impact:** Improper disposal or recycling of discarded goods causes environmental degradation and health hazards.

**Solution:** develop reusable or recyclable products and components.

## What is Eco-design?

Eco-design is a design management process that aims at reducing the environmental impact of products, without compromising with their efficiency and utility, throughout their life cycle. The life cycle of a product usually starts with procurement of raw materials and finishes with disposal or recycling of the discarded product.

Eco-design also takes into account social impacts of the production and consumption of products and services, making a significant contribution to sustainable development. Eco-design involves assessing the problems, prioritising and then designing out new solutions that can range from identifying renewable materials, reducing the energy consumption during usage to innovating the business model.

## Different Approaches

**The product focused approach:** aims to make existing goods and services more economical, more efficient and less harmful to the environment, as well as improving after-sales service, and end-of-life collection and processing.

**The result focused approach:** fulfills the same objective in a different way, e.g. selling the use of a product (i.e. rental) and not the product itself.

**The need focused approach:** studies the needs and expectations that a product or service must fulfill, then looks for the best way to satisfy them.

## The Solutions

Eco-design provides solutions to minimise the environmental impact of products. The impact of a product and the solution, at six different stages of product life cycle, are :

### Raw materials

**Impact:** Extracting and processing them consumes natural resources, uses energy and causes pollution.

**Solution:** choose the most appropriate materials, prefer renewable materials; reduce quantities; transform waste into raw materials.

## Why Eco-design?

Besides addressing the environmental concerns, eco-design can make a difference to consumers, entrepreneurs and the companies through reducing costs, increasing innovation, attracting investment, and improving brand position. Eco-design can also help companies proactively comply with environmental legislations, e.g. the Waste Electrical and Electronic Equipment Directive (WEEE) and the Restriction of Hazardous Substances Directive (RoHS).

With a new approach of eco-design in our hand, let us usher in the era of sustainable development.

Source : [unep.fr](http://unep.fr); [edcw.org](http://edcw.org)

