

#ResourceEfficiency #EREK

ECODESIGN: GET OFF TO A GOOD START IN THE CIRCULAR ECONOMY



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Ecodesign is a way of making products environmentally friendly from the design up, by incorporating environmental aspects into the planning, development and design process stages of a product, and to implement them over its entire life cycle. Although it aims primarily at delivering environmental and economic benefits, companies are encouraged to consider the social dimension of ecodesign and product development as well.

Environmentally-aware product development also positively influences the resource- and cost efficiency of a product during its lifetime. In fact, most manufacturing costs are determined in this vital product development stage, establishing their

suitability for assembly, disassembly, repair and maintenance, as well as for recycling. Resource-efficient production, which inherently saves energy and materials through smarter processes, lightweight alternatives, etc., and thus cuts manufacturing costs but also those associated with disposal or recycling at the end of a product's primary useful life.

In this edition of EREK Quarterly we provide an overview of Design for Remanufacturing (p.2) inspiration to Business Support Organisations (interview on page 3-4), practical examples from companies (p.5), information on support offered by government (p.6), and a host of other relevant tips and information (p.7).

Design for Remanufacturing: an Integral Part of Ecodesign

The remanufacturing of used parts enables small and medium-sized enterprises (SMEs) to reduce their energy and material consumption. The economic and ecological benefits of remanufacturing can be improved by adapting product design to remanufacturing. So-called "design for remanufacturing" (DfRem) is part of ecodesign, which can reduce the burden on the environment over the entire lifecycle of a product.

An overview study entitled "Resource efficiency through remanufacturing" by the VDI Zentrum Ressourceneffizienz GmbH (Centre for Resource Efficiency) (VDI ZRE) highlights the resource efficiency potentials provided by the reuse of core parts. As a result, companies can reduce costs and strengthen their competitive advantage over the long term. Remanufacturing is a key component of the circular economy and offers a high potential for resource efficiency: In the manufacturing industry, manufacturers assume material costs in the amount of over 40% – in many cases, the largest cost factor in the company. Remanufacturing makes it possible to save material and energy expenses. Based on various case examples, the study quantified this more precisely: **Re-manufacturing core parts made it possible to achieve up to nearly 90% reduction in emissions and materials and using 56% less energy** compared to equivalent newly manufactured products. This results in cost savings that can be passed on to customers in the form of lower sales prices. In certain cases, remanufactured products can be offered at approximately 40 to 80% of the acquisition price for an equivalent new product giving customers in particular a substantial cost advantage.

Design for Remanufacturing (DfRem) can be implemented in two ways: On one hand, in the form of strategic design e.g. the sale, marketing, service support, return system or analysis of the aftermarket and, on the other hand, technically. In recent years, the focus has been almost entirely on technical analysis and development, that is, the **product's physical design** is conducive with respect to remanufacturing. This includes e.g. easy disassembly, a modular design, components that are resistant to wear or the use of adaptive technologies and adequate materials. With respect to strategic design, it has been determined that these aspects will have a greater bearing in the future. This includes defining a strategy with respect to e.g. customer needs and/or consumer behaviour, appropriate communication work and public relations, optimal price strategies, efficient return systems or the analysis of existing markets for remanufactured parts. Organisational and functional design decisively affects successful remanufacturing, however, studies in this

area are rare and must be intensified in order to push DfRem forward in a strategic respect.

The study provides a corresponding industry overview and serves to give small and medium-sized business in particular ideas on how to implement remanufacturing processes, create incentives for the use of remanufactured products, raise awareness for efficiency potential of remanufacturing for efficiency in both an ecological and economical respect, but also to encourage further exploration of this topic.



The study "Resource efficiency through remanufacturing" was prepared in connection with the National Climate Protection Initiative of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and is available free of charge on the website of the VDI ZRE at www.resource-germany.com/publications in both German and English.

Ecodesign takes a strategic turn in Brussels

What are the keys to a successful support programme promoting ecodesign in SMEs? EREK News asked Perrine Collin of Brussels-based UCM Ecodesign to tell us how they work with such a diverse range of companies (120 and counting!), from restaurants, travel agencies and event organisers to communication, IT and even woodworking businesses. The secret, she explains, is to walk companies through the process and find tailored solutions to help them rethink their offer and create green businesses.

What motivated your shift from traditional product/service guidance to strategic guidance?

Part of our work is focused on integrating ecodesigned solutions into a pre-existing company environment. This was our core activity, but after a few years we realised clients needed long-term, strategic guidance to achieve their 'circularity' ambitions without backfiring. Deposit systems – renting out packaging for a product such as a milk bottle – are a typical example of well-intentioned but ill-conceived schemes which have a vested interest in non-durability. How's that for a sustainable business strategy? We decided our solutions would include careful analysis of sustainable business models. Our nine-month programme to help companies convert to a Product Service System (PSS) falls under this framework.

What does ecodesign business support look like?

We first scour sectoral literature for information, good practices to be synthesised in a report and presented to the company. We really take the time to sit down with them and provide a detailed explanation. It's important to walk the company through all possible solutions – especially ecodesign novices. Our guidance programme includes collective workshops where we reconstruct a business design, and where entrepreneurs can exchange ideas and tips. During implementation, we try to smooth the way by providing the right contacts, reminding them of proposal deadlines, making their case known to policy-makers who are always on the lookout for real-world examples, etc. We don't provide financial support ourselves, but we guide SMEs through lengthy application processes for loans or subsidies.

We also offer sectoral support for federations and other groups of companies. For example, we developed an app centralising information and good practices for hairdressers at the request of their local federation, and with the input of their members. It is a very good way to multiply our impact within a single sector.

How far do you have to go to get SMEs interested in ecodesign solutions?

In the early years, we had to actively promote ecodesign. But today, 70% of the companies we support have sought us out. Those we bring in ourselves now only account for a third of our projects. Nevertheless, we make a point of reaching out to companies who have never heard of what we do. Working with those already well-versed in the possibilities of ecodesign is relatively easy. The real challenge lies in approaching and convincing sceptics.

How do you convince SMEs to go for ecodesign solutions then?

It's difficult to foretell what arguments will make the scale tip in our favour. Financial arguments and demonstrations of returns on investment always hold the most weight. We vastly appreciate subsidy schemes as they have the double advantage of providing companies with immediate, dependable gains and a formalised commitment to which they can be held accountable.

We also make a point of positioning ourselves as business service providers first. It so happens that our 'services' are contingent upon sustainability criteria. For instance, if you operate a food truck, we can offer solutions for navigating local zoning restrictions. But these are business opportunities that are only available to you if you are sustainable.

Another argument in our favour is the marked distinction between the subsidising authority (public authorities generally) and us as guidance provider. It reassures companies to know that they can be open about the difficulties they encounter without the threat of their financial support being snatched away.

A further obstacle that we have managed to overcome is the ever-present hesitation at giving environmental concerns precedence over other business priorities. Entrepreneurs might, for example, feel that their time would be better spent dealing with salary costs than investing in ecodesign solutions. Because UCM's pool of expertise extends further than our ecodesign unit*, we're able to allay their more immediate worries with a promise to set them up with our colleagues at a later stage. Only once their minds are at ease so they feel comfortable focusing on ecodesign.

How do you manage so many different aspects (legal, regional and local policy...) with a small team?

Networks are the cornerstone of our work. Good contacts and insider knowledge mean we are able to offer services on several fronts and at different management levels. As much as possible, we strive to position UCM at a crossroads between policy-makers, groundwork, support networks and sectoral activities. Ecodesign schemes in SMEs require an enabling environment whereby everyone involved directly or indirectly in the project – accounts, legal experts, insurance providers, marketing agencies – are made aware of the models involved in ecodesign. For instance, ecodesign blurs the distinction between acquisitions and investments, which is of particular significance for tax audits. We've put considerable effort into raising awareness of ecodesign specificities within the small accounting world of Brussels. Lobbying has proven to be a good way of removing absurd regulatory barriers. Just consider, for instance, that an SME based in Brussels needs to apply for three different, independently issued waste collection permits – from the Walloon, Flemish and Brussels regions!

Amid the troves of circularity-related support schemes out there, it is difficult for SMEs to find their bearings. Our role is to help them navigate every possibility available to them. Accordingly, we need to have a clear overview of the wider support organisation network ourselves. The funding authority plays a role here: they must tell us what the fund is for and how it fits with other programmes, to avoid fragmentation. A clear vision of your own added-value as a support organisation is essential.

Ecodesign in practice

ECODESIGN FOR FAST-MOVING CONSUMER GOODS

Image source: © iarlemenko, Fotolia.com



Fast-moving consumer goods (FMCG) are typically used by households quickly after purchase or at least under one year. This includes packaged foods, cleaning supplies, light bulbs, but also cosmetics and personal hygiene items.

FMCG packaging is a major challenge. Because of the short lifespan and huge volumes sold of these goods, it pays to make the packaging as resource-efficient as possible. Another sustainability concern for fast-moving goods is minimising the amount of waste generated by making the product as reusable as possible. Both of these challenges can be tackled by ecodesign principles.

➤ www.resourceefficient.eu/en/measure/ecodesign-fast-moving-consumer-goods

ECODESIGN FOR DURABLE GOODS

Image source: © thingamajiggs, Fotolia.com



Durable products designed with sustainability considerations, or ecodesigned, offer many advantages both to the company and the environment. Ecodesign takes into account the full life-cycle of products, from conception to design and

development, to construction, packaging and end-of-life considerations including reuse, reparation and/or recycling.

Significant savings can be achieved in raw materials, pre-products, operating resources and additives, as well as in water and energy use.

➤ www.resourceefficient.eu/en/measure/ecodesign-durable-goods

BABY CLOTHES SUBSCRIPTION MODEL IN DENMARK



Image source: © Alina G, Fotolia.com

Circular economy thinking is the cornerstone of the Danish baby clothes brand Vigga. Baby clothes like romper suits that end up in the attic after only a few wears waste money and valuable resources. Vigga came up with a sustainable solution: a subscription service for baby clothes.

Subscribers to the service receive a package of selected clothes items in the baby's size. As the child grows, these items are replaced with new Vigga packages. The smaller sizes are typically for shorter periods before being returned; the older the child becomes, the longer the time between packages. It all depends on the specific needs of each customer, and it only takes a click on the screen and a visit to the mailbox to receive the next size!

A further benefit of the system is that each piece is designed with reuse in mind, and the clothing has been tested to last for the circular business model. The clothing is therefore long-lasting and made for multiple users. Once the clothes are worn out, they are then reused to produce new products, so nothing is wasted.

➤ www.resourceefficient.eu/en/good-practice/baby-clothes-subscription-model-denmark

Check out our EREK database for other good practices, measures and technologies that allow SMEs to cut resources and energy through digital solutions.

You are new to ecodesign, and you don't know where to start?

Below you can find some examples of European and national programmes offering support (funding, contacts, expertise, information) to SMEs interested in introducing ecodesign for better environmental performance.

EREK network members can also advise customers/local companies looking for experts in ecodesign and relevant support measures.

UCM ECODESIGN



UCM is the main French-speaking employers' organisation in Belgium, involved in defending the self-employed and business leaders. UCM offers a diverse range of services to SMEs, from business development to HR management and social services. Ten years ago, they created an ecodesign unit, which

accompanies businesses in incorporating ecodesign in their processes. They are mainly active in Brussels, and in Wallonia. They offer three types of support:

- “Pre-diagnostic” with existing companies: a one-off consultancy service to help companies find solutions to save resources and improve their offer;
- Nine-month programme to convert to Product Service System (functional sales): entrepreneurs are helped to completely redesign and set up their business model;
- Development of support programmes at sectorial level, working with trade associations.

➤ www.resourceefficient.eu/en/support-programme/ucm-cellule-eco-conception

CD2E – CREATION DEVELOPMENT OF ECO-ENTERPRISE IN HAUT-DE-FRANCE



The **Creation Development of Eco-Enterprise** is one of the largest clusters in France and Europe to work on eco-technologies, bringing together around 250 members (companies, research centers, entrepreneurs, public institutions, etc.) in the Haut-de-France region. It has developed tools and actions to support companies in the domains of energy and material efficiency. On its website, companies can directly access a number of resources.

CD2E also fosters innovation in eco-technologies by promoting the results of regional environmental research, stimulating collaboration between companies and laboratories, and encouraging technology transfer and awareness of new eco-innovation developments.

➤ www.resourceefficient.eu/en/support-programme/cd2e-creation-development-eco-enterprise-haut-de-france

ESPI – TOOL FOR ENVIRONMENTALLY SOUND PRODUCT INNOVATION



Deutsch
Ελληνικά¹
English
Español
Italiano

Tool for Environmentally Sound Product Innovation

TESPI is a free web-based tool aimed at supporting environmentally conscious design, taking into account the product life cycle, the customers' needs and competitors' products. It has been developed to support the first steps of product design, as well as redesigning existing products - in particular, modular manufactured articles that can be disassembled and each component analysed.

The tool is made up of two parts:

- Quality analysis - the user identifies the customers' needs and requirements, assesses their relevance and compares their own product with the competitors' one
- Environmental check - the user assesses the environmental performance of their product against a checklist (e.g. use of recycled materials, use of harmful materials, energy consumption, emissions, etc.)

The results are given in several graphs and identify the following:

- Which needs are the most relevant and how the product is good at satisfying each need, in comparison with the reference competitor
- Which ecodesign strategies are the most relevant for the product
- Which element is the most critical for quality (customer needs analysis) and the environment
- Which needs and environmental aspects need to be improved for each element

➤ www.resourceefficient.eu/en/support-programme/tespi-tool-environmentally-sound-product-innovation

Further reading & resources

If you want to learn more about Ecodesign and the role it plays in better resource efficiency and shifting to circular production and operations, please check the following links and resources.

REPORTS, STUDIES:

- DESIGNING FOR THE CIRCULAR ECONOMY (2018) edited by Martin Charter, Routledge, ISBN 1351623907
- GRAY, C. AND M. CHARTER. 2007. Remanufacturing and product design: Designing for the 7th generation. [pdf]. Farnham, UK: The Center for Sustainable Design University College for the Creative Arts. [see here](#)
- ECO-INNOVATION OBSERVATORY (2018) Eco-innovation of products: Case studies and policy lessons from EU Member States for a product policy framework that contributes to a circular economy, bi-annual report. [see here](#)
- HOLLANDER D.M., BAKKER, C., HULTINK, E.J. (2017) Product Design in a Circular Economy: Development of a Typology of Key Concepts and Terms. [see here](#)
- HESSEN UMWELTTECH (2015) Mit Ecodesign zu einer ressourcenschonenden Wirtschaft [see here](#)
- VDI CENTRE FOR RE (2017) Resource efficiency through remanufacturing. [see here](#)

ARTICLES, BLOGS:

- CLOSE THE LOOP, Circular Design for Textile industry, [see here](#)
- GERMAN FEDERAL ECODESIGN AWARD 2018 WINNERS: [see here](#)
- INFORMATION ON EU ECODESIGN POLICY: [see here](#)

EREK NETWORK INTERVIEWS:

- Interview with ECOINNOVAZIONE : The new face of ecoinnovation in Italy: [see here](#)
- Interview with IHOBE: Ecodesign, the long-distance race that has to be won. [see here](#)

PROJECTS:

- ECODESIGN CIRCLE. [see here](#)
- THE CIRCULAR DESIGN GUIDE. [see here](#)

TOOLS

- ECODESIGN-KIT (German): [see here](#)
- ECODESIGN-PILOT (German /Austria): [see here](#)
- ECODESIGN MATURITY MODEL (English): [see here](#)
- ECODESIGN SIS TOOLKIT FROM OVAM, Flanders (English): [see here](#)

VIDEOS:

- MATERIAL EFFICIENT LED production based on principles of ecodesign: [see here](#) (by VDI ZRE)
- ELLEN MACARTHUR FOUNDATION Disruptive Innovation Festival online discussions and seminars on Material Matters, including: [see here](#)
- Interview with WILLIAM McDONOUGH, on Cradle2Cradle Design: [see here](#)
- Video interview on case studies of companies introducing Cradle2Cradle products: [see here](#)

EREK - YOUR REFERENCE POINT ON BUSINESS COMPETITIVENESS THROUGH RESOURCE EFFICIENCY





The European Resource Efficiency Knowledge Centre (EREK) is here to help European companies, especially SMEs, save energy, material and water costs. We provide tools, information and business opportunities that show you new and better ways to be resource efficient and benefit from circular economy business models which turn waste into an asset.

EREK also supports national, regional and local organisations across Europe that work with SMEs to improve their environmental performance, helping them to become more resource efficient.

www.ResourceEfficient.eu



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