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## **ECODESIGN of Consumer Electronics**

*(on behalf of G. Podhradsky,  
Philips Speech Processing)*

# **PHILIPS**

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Spin-off: **ECODESIGN company engineering & management consultancy GmbH**



**Vienna**  
Seoul  
Ottawa

*We help our clients develop and market eco-products successfully.*

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## ECODESIGN in 12 steps

*Wimmer, Züst, Lee:*  
„*ECODESIGN Implementation –  
A systematic guidance on integrating  
environmental considerations into  
product development*“

Explains in twelve steps how  
to improve products

[www.ecodesign.at/12steps](http://www.ecodesign.at/12steps)

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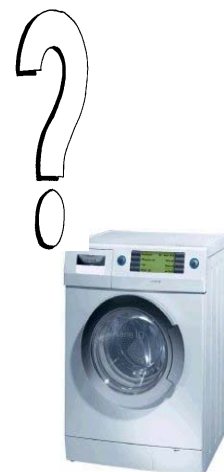


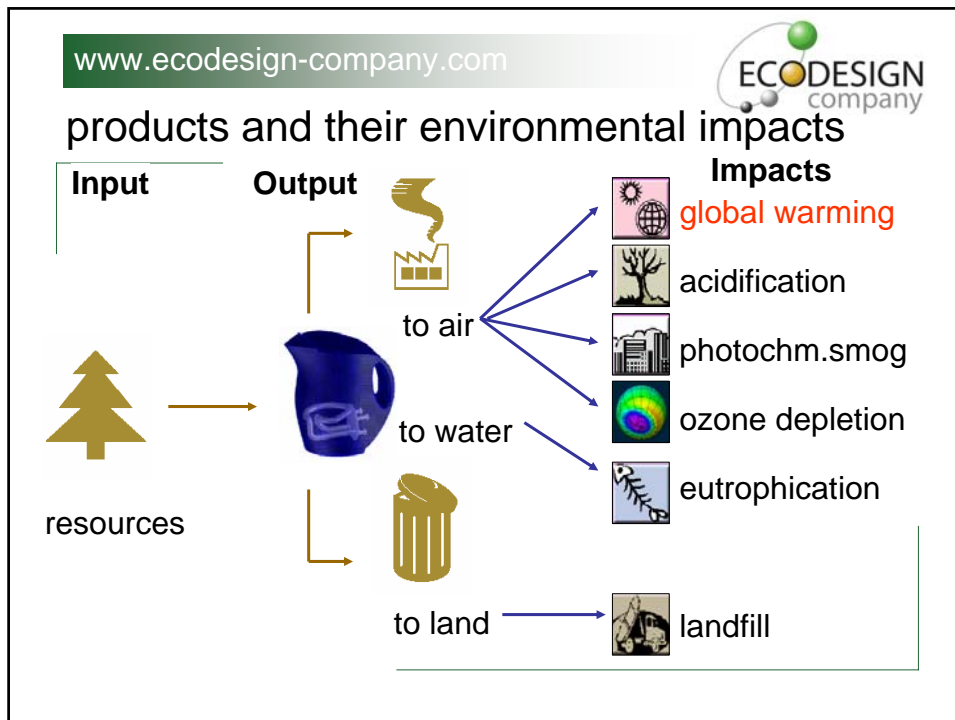
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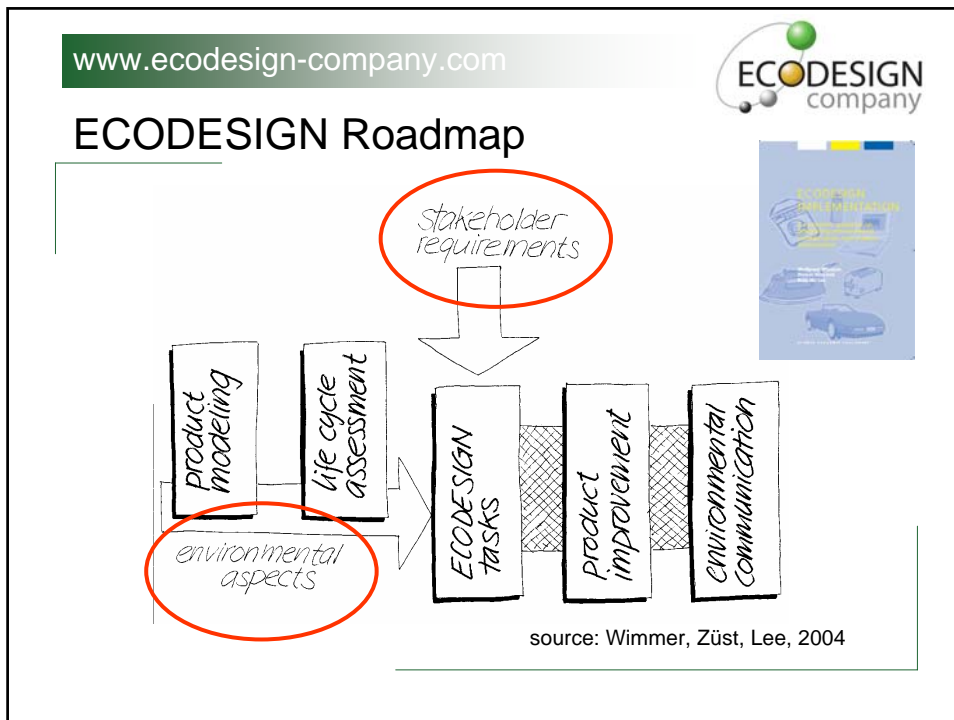
## main questions in ECODESIGN

- ➔ What are the key **environmental aspects** to improve a product?
- ➔ What are the environmental **stakeholder requirements** (existing and new regulations, demands, laws, ...)?






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- ### EU - directives
- ⇒ RoHS-directive: Restriction of certain Hazardous Substances  
forbids lead, mercury, cadmium – 2006
  - ⇒ WEEE-directive: Waste Electric and Electronic Equipment Requires reuse and recycling – 2005
  - ⇒ ELV-directive: End of Life Vehicles Directive  
Requires reuse and recycling – 2002
  - ⇒ ELD-directive: Energy Label Directive  
Requires information about energy consumption
  - ⇒ **Energy using Product (EUP/ECODESIGN)  
Framework for eco-design requirements**
- 




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### Development task

- ➔ A new model shall be designed.
- ➔ How can „environment be considered? How to improve the environmental performance?
- ➔ Collecting life cycle data.
- ➔ Applying ECODESIGN Toolbox.

**Digital Pocket Memo**




**Product re-design**

**New Digital Pocket Memo**

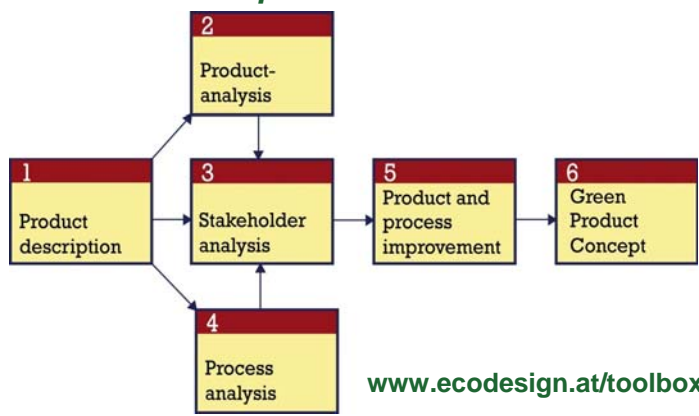


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### ECODESIGN Toolbox

*Integrated approach in six steps for developing Green Product Concepts*



```
graph LR; 1[1 Product description] --> 2[2 Product-analysis]; 1 --> 3[3 Stakeholder analysis]; 1 --> 4[4 Process analysis]; 2 --> 3; 3 --> 5[5 Product and process improvement]; 4 --> 3; 5 --> 6[6 Green Product Concept];
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[www.ecodesign.at/toolbox](http://www.ecodesign.at/toolbox)


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### Life Cycle Data from the reference product

➔ Each part was modelled with:


- Material
- Process
- Surface
- Transport

BG-Teil-Nr	Baugruppe-Teil	Material-Prozessname	Menge	Einheit
101-01		ABS	14.53	g
101-02		Spritzgießen	14.53	g
101-03		Lackieren und Bedrucken	19060	mm²
101-04		Transport, LKW < 3,5 t	590	km
102-01		ABS		
102-02		Spritzgießen		
102-03		Lackieren		
102-04		Transport, LKW < 3,5 t	270	km
103-01		ABS		
103-02		Spritzgießen		
103-03		Lackieren		
103-04		Transport, LKW < 3,5 t	270	km
104-01		ABS	0.077	g
104-02		Spritzgießen	0.077	g
104-03		Lackieren	303	mm²
104-04		Transport, LKW < 3,5 t	270	km





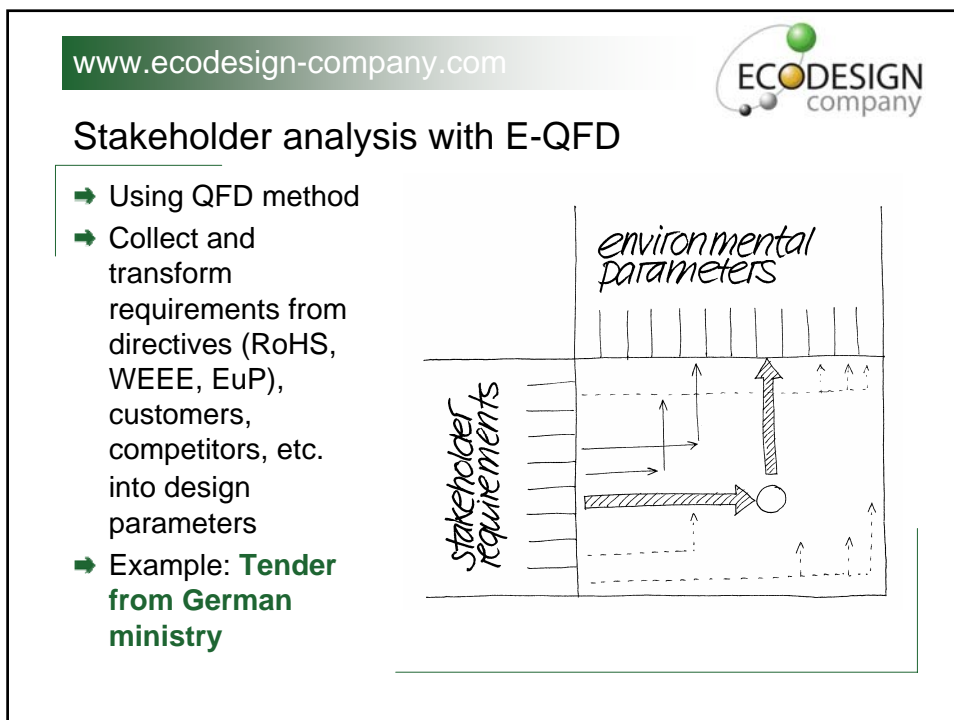
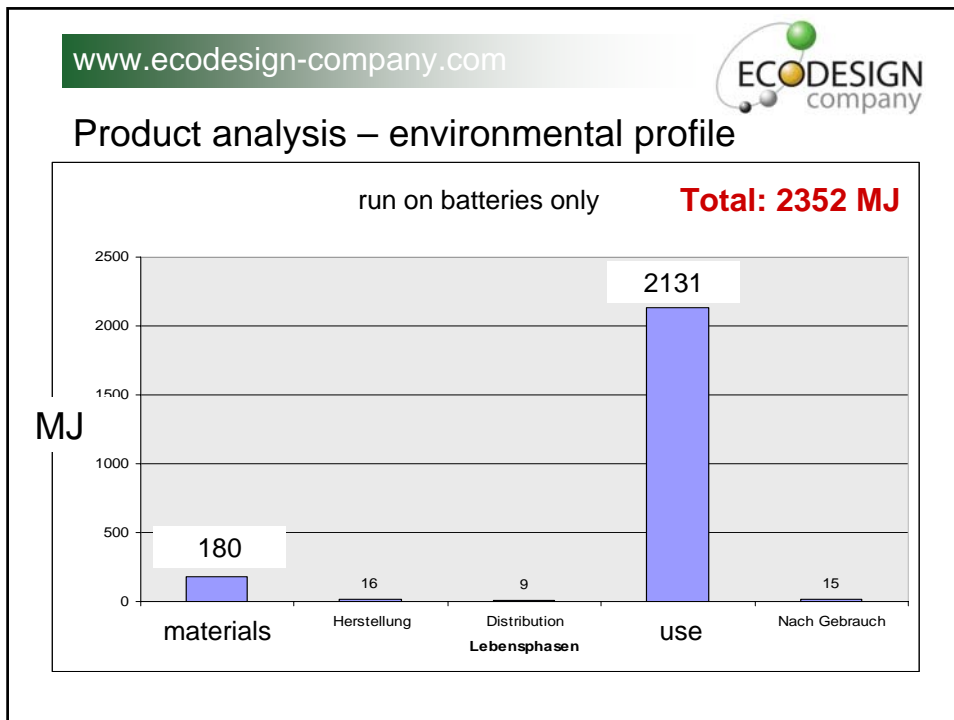
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### Life Cycle Data



- Clients run device on batteries only (4 years lifetime)
- Clients buy **additional external charger** and run device on rechargeable batteries only



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## Product improvements – Digital Pocket Memo

- ➔ Focus on the use phase – reduce energy consumption (e.g. find new display light)
- ➔ Find smart energy management system for the device
- ➔ Identify possible reduction on energy consumption
- ➔ Improve product functionality
- ➔ Apply concept of function integration
- ➔ Reduce number of parts and components
- ➔ Apply lead free concept (RoHS compliance)



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## Green Product Concept – Digital Pocket Memo

- ➔ Now 17 hours of dictation on one set of batteries
- ➔ Deliver with rechargeable batteries, table stand and external charger as well as USB charging function
- ➔ Up to 30% less parts and components in the device
- ➔ Smart charger, less stand-by consumption, one instead of four power cables
- ➔ Design for recycling (DfR) is realized



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## Next steps: Environmental communication - EPD

- How does the market know the environmental benefits?
- Communicate performance using **Key Environmental Performance Indicators** e.g. within an EPD

### Environmental Product Declaration—EPD



#### Philips Digital Pocket Memo

This Environmental Product Declaration provides quantified environmental data using predetermined parameters and additional environmental information. The predetermined parameters are based on the ISO 14040 series of standards and the values of the parameters are from the critically reviewed Life Cycle Assessment results.

#### Information about Manufacturer

PHILIPS Speech Processing has more than 50 years of experience in the professional market for Dictation devices. The headquarter as well as the development and the production is located in the High Tech Campus Vienna. The production in Vienna is meeting the ISO 9001 and ISO 14001 standard. Dedicated sales clusters located in every continent ensure that the customer base get the best commercial and technical support.

PHILIPS is also the leader in the IVA ( International Voice Association ) who defined the well established Digital Speech Standard (DSS), which is an important element for the interoperability in modern, professional and digital dictation



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## Proving the environmental achievements

- Key Environmental Performance Indicators

e.g. GWP, ...



**159 kg CO<sub>2</sub>-eq      22 kg CO<sub>2</sub>-eq**

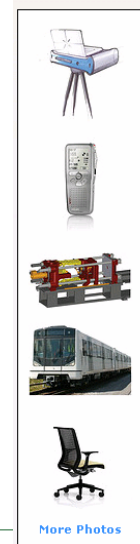
**Total: 38.000 ton CO<sub>2</sub>-eq in 4 years!**

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### Characteristic of eco-products

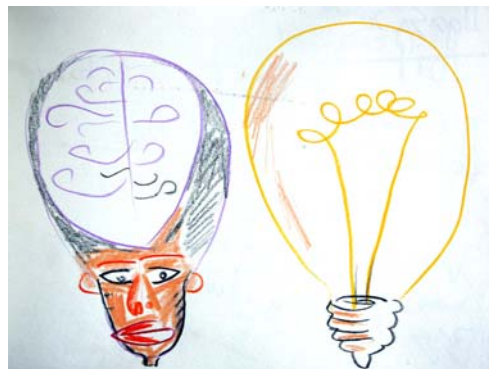
- ➔ Life Cycle Thinking is applied in the early stage of product design and development
- ➔ **KEPI** and the environmental profile are known
- ➔ Design changes aim at improving environmental weak points
- ➔ Significant environmental improvements can be shown
- ➔ A shift of environmental impacts from one life cycle stage to another is avoided
- ➔ Environmental improvements are communicated to the market



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Thank you for your attention!



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## Discussion: Future technologies, R&D chances

- ➔ Green ICT – where are chances in a new (developing) market?
- ➔ Where do we see need for technology development and R&D?
- ➔ How can the administration support new chances through Green ICT?
- ➔ Where do you see the role of SMEs?  
Do they have a role?

