

Tailoring LCA results in monetary terms for decision support

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INTRODUCTION & OBJECTIVES

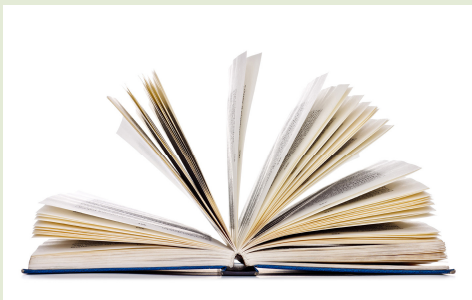
Swedish Life Cycle Center developed a list of monetized environmental impact values for emissions and use of resources: the EPS 2015. We used these in industrial case studies to evaluate the use of monetary values of emissions and resources in three companies:

- AkzoNobel: sustainability assessment of a book
- Essity: assessment of innovative hygiene products
- Volvo: assessment of, e.g., sand recycling

VALIDITY OF CRITICISM

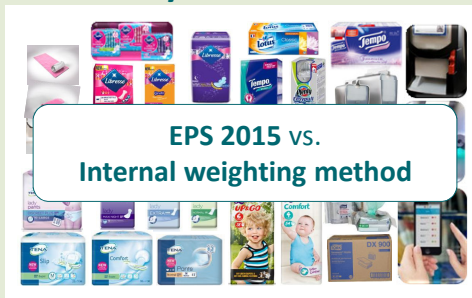
Objections to monetization	Policy-making	Product development
High uncertainty	Valid	Valid
Short-cuts decision processes	Valid	Not valid
Assumes quantifiability	Valid	Valid
Disregards distribution effects	Valid	Less valid
Focusses on efficiency	Valid	Less valid

AkzoNobel: 4D P&L



- EPS 2015 useful for estimating the impacts on natural capital
- The increase in financial and human capital is more than 10 times greater than the loss of natural capital
- Few social risks were identified
- Impacts on natural capital can be further reduced through, e.g., value-chain cooperation

Essity: innovations

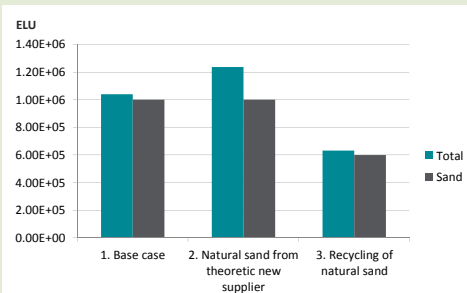
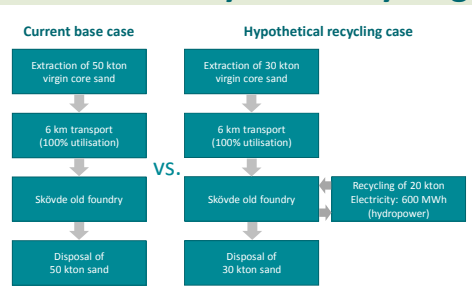


Examples of results

Comparison between reference product and new product	Difference in % between products	
	Result from internal weighting	Result from compared EPS values
A. Difference in product solution	-12	-10
B. Different material option	-2	-2
C. Different product design	-5	-6
D. Different material option	0	-1
E. Different material option	-1	-1

- Similar ranking between products
- Similar weight on resources, different on some specific emissions
- EPS 2015 emphasize global and regional impacts
- The internal method, like environmental permits, emphasize local impacts
- LCA with EPS 2015 can complement but not replace environmental permits

Volvo: foundry sand recycling



- EPS results in this case dominated by the sand resource
- This reflects risks for future costs
- LCA with EPS 2015 can assist in the management of future risks

FURTHER READING

Hallén Jorquera R, Lindblad M. eds. 2016. Integration of environment and economy in product development gives opportunity for innovations. Report 2016:6. Gothenburg, Sweden: Swedish Life Cycle Center.

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