

The Econo-Environmental Return (EER)

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Due to an increase in environmental consideration from many stakeholders, it is difficult for business managers to ignore the environmental consequences of the goods produced or services provided by their companies. Nevertheless, economic performance is still at the base of the economic system. How, in such a context, can one provide managers and decision-makers with useful data without overloading them with incomparable values? How to combine environmental impact, provided by a life cycle assessment study, with economic costs or benefits resulting from a life cycle cost study or through the use of accounting tools? How to choose among several goods or actions the one representing the best compromise between environmental impact and economic aspects?

Even if tools or concepts have already been published on this subject, these questions have not been fully answered. The reasons for this lie in the fact that the tools are too specific regarding a product or an impact category and that concepts based on assumptions may not always represent reality. Considering the selling price as a good indicator of the production cost is one of these assumptions. In a non-free market (when a single producer is able to influence the entire market), the selling price is affected by competition among producers and as such the information provided to the decision-maker may be wrong. In this circumstance, there is a need for a tool sufficiently flexible to be adapted to the available data of a study, but strong enough to clearly point out the best compromise between environmental impact and economic aspects.

The concept of the Econo-Environmental Return (EER) has been developed based on the idea of the ratio between benefits and costs (the present worth annuity) in the economic notion of the Return On the Investment (ROI). In contrast with the ROI, the assumption made in the EER is that economic aspects and environmental impact all occur at the same time. This return is to the ROI what the product of two ratios (benefits/cost and positive/negative environmental impact) is to the present worth annuity.

Knowing the EER of a product or a service may be useful. However, in contrast with the ROI, which has the interest rate as a comparison basis, there is no reference value for a single EER. This tool's real strength is its capacity for comparing similar goods. Knowing a product's negative environmental impact and total costs can be somewhat easy; on the other hand the two other values required in the EER can be more difficult to assess. In such cases, taking advantage of the EER concept is still possible by considering one of the products to compare as the reference and using the relative EER. This consists in attributing to the unknown environmental impact of each product the value of the known environmental impact of the reference (as for the economic aspect). Relative EER of the reference product therefore becomes null. All others having a positive relative EER value are better compromises between economic and environmental aspects than the reference product.

This notion of relative EER is applied in two different case studies. In the first one, the relative EER is used to select between two different types of carpet. In the second one, two different site remediation technologies are compared on both economic and environmental aspects.