



## Ecological footprint: a screening for environmental performance?

**Non-renewable energy** dominates the ecological footprint of most products and services, according to new research. The study examined 2630 products and services from the energy, materials, transport, waste treatment and infrastructure sectors and suggests that ecological footprint measurements can be used to help assess the sustainability of products.

**A large number of environmental** assessment methods are now available to help assess the sustainability of products, processes and ultimately lifestyle, but few studies have been undertaken to compare the findings of these different tools. New research from The Netherlands and Switzerland suggests that the ecological footprint, which is increasingly used to assess the sustainability of lifestyles at individual, regional and national levels, can also be applied to reliably assess the impact of a range of products and services.

Life-cycle assessment methods are used to measure environmental performance and identify where improvements can be made. These tools focus on impacts from 'cradle to grave', looking at both direct and indirect resource inputs and/or emissions, and fall into two broad types:

- Impact assessments which aim to analyse all potential environmental impacts, such as the Eco-indicator 99<sup>1</sup>, which quantifies the impacts on human health, ecosystem quality and resources.
- Resource-related indicators, such as ecological footprints, which focus on cumulative use of land, energy and materials.

In this study, the researchers calculated the ecological footprint of a range of sectors, measured using three input types: direct land occupation, atmospheric CO<sub>2</sub> emissions, largely from fossil fuel combustion, and nuclear energy demand. They compared these results with an impact assessment, calculated using Eco-indicator 99, and found that, for most sectors, the two indicators produced a similar ranking of products and services. This suggests that land and fossil fuel use, which form the core of the ecological footprint assessment, are important drivers of overall environmental impact and that the ecological footprint measure could serve as a screening indicator for environmental performance. However, it should be noted that the ecological footprint proved to be less reliable for product life-cycles with relatively high mineral consumption and process-specific metal and dust emissions.

The research shows that land occupation is particularly significant when measuring the environmental performance of renewable energy products as well as for agriculture and the paper/cardboard industry. For most other categories, the ecological footprint is dominated by CO<sub>2</sub> emissions from fossil fuels use.

<sup>1</sup> The Eco-indicator 99 is a life-cycle impact assessment method developed by a Dutch environmental consultancy. See <http://www.pre.nl/eco-indicator99/default.htm> for more information.

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