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The ‘carbon footprint’ – an unreliable indicator of environmental sustainability

In recent years, the ‘carbon footprint’ has become a popular way of comparing the relative environmental impact of goods, services or industrial activities. Companies have seized on it as a way of building a competitive advantage (‘our product has a smaller footprint than yours’), or measuring improvement (‘a smaller footprint means a better product’), while environmentally conscious procurers and consumers use it to decide between competing offers. And yet, in practice, simply comparing carbon footprints is rarely fair or scientific. Indeed, as a measure of environmental impact or sustainability, it can be quite misleading. There are three main problems.

Misunderstood

The first problem is that many people have only a vague idea of what a carbon footprint is, or means. A carbon footprint measures the amount (expressed in units of CO₂ equivalents) of greenhouse gases that enter the atmosphere as the result of a given activity or product. As such, there is nothing wrong with it, and sound environmental accounting methodologies are available for calculating it (ISO 14040, 14044 and 14064). But the carbon footprint tells us only about carbon emissions; it says nothing about total environmental impact. To get an all-round picture, many other factors – acidification, ozone depletion, energy consumption, soil and water pollution, and more – need to be considered.

Unfortunately, many people simplistically tend to equate carbon emissions with overall environmental impact, although there is no direct correlation between the two. As a result, if people are invited to compare products purely on the basis of their carbon footprints, those who want to ‘do the right thing’ for the environment may be led to make precisely the wrong choices.

Too narrow

The second problem is that the scope of the carbon footprint is usually too narrow. Any genuine measure of a product’s or an activity’s environmental impact needs to encompass its total impact over time, i.e. throughout its entire lifecycle. It also needs to consider the wider

context. All too often, however, the calculation of the carbon footprint is limited to the production phase, and takes little or no account of the subsequent use and disposal phases. It also neglects contextual effects. For example, many people believe fewer goods should be packaged, on the grounds that, by not using packaging, a certain 'footprint' is saved. But if, as a result of eliminating packaging, the goods perish, then all the environmental impact of producing and transporting them will have been for nothing – and the small environmental benefit gained by eliminating packaging will be more than outweighed by the loss of the goods.

Difficult to compare like with like

The third problem is that it is often impossible to compare like with like. In calculating a footprint, we need to make certain assumptions – predicting the conditions under which certain activities will take place, for instance, or how a product will be used. Obviously, the reliability of the resulting footprint will depend crucially on how accurate these assumptions are. If one footprint is calculated on the basis of realistic assumptions, while another is based on an overly optimistic or idealised scenario, then clearly any comparison between the two will be meaningless.

Towards a more comprehensive approach

For the above reasons, AEROBAL agrees with the European Commission's Joint Research Centre and other organisations that the carbon footprint should never be used as the sole basis for making purchasing decisions or improving goods or services. If we want to attain sustainable production and consumption, many other aspects need to be taken into account – including not only environmental, but also economic and social dimensions. And on the environmental front, the carbon footprint is only one of many factors that need to be considered. Decisions about packaging, for instance, mean finding a balance between the functional benefits of different materials, cost, end-of-life treatment, and a whole host of other factors.

Simply comparing footprints as presently calculated would be hardly better than flipping a coin. AEROBAL believes that, with relatively little extra effort and cost, and using much of the same data, a more complete Life Cycle Assessment method could be used, resulting in a measure of environmental impact that is fairer, more comprehensive and more transparent.

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