

Life Cycle Assessment of PVC and Alternative Materials Client - DEFRA

Entec was successful in winning a contract to carry out a life cycle assessment (LCA) of polyvinyl chloride (PVC) and alternative materials for DEFRA. The study incorporated exploratory economic analyses of internal and external costs and a macro qualitative risk assessment of the life cycles. The approach integrated environmental, human health and economic aspects and can help policy makers to understand the sustainable development implications of issues.

PVC is a versatile material used in diverse applications. It is fairly inert and stable during use. There are however, a number of concerns over possible environmental and health impacts related to PVC and additives through their life cycles. While environmental and health effects of PVC and its manufacture and disposal have been well studied, the comparative effects of alternative materials had not received a similar level of attention.

Entec carried out the LCAs working with PricewaterhouseCoopers for a range of product groups (windows, flooring, pipes, and packaging) and considered alternative materials such as wood, linoleum, aluminium and polystyrene. The LCAs compared key environmental impacts (e.g. greenhouse effect and air acidification) of the life cycles which incorporate extraction of raw materials, manufacture of products and intermediaries, use and maintenance of the products, right through to final disposal. The results of the LCAs were augmented through the risk assessment work and environmental economics, which looked at the external costs of the products not included in the product prices.

Throughout the project, stakeholders were consulted on assumptions and an independent peer review group reviewed the work. The consultation culminated in a seminar attended by 100 stakeholders from industry, local authorities and NGOs.



Helping policy makers understand the sustainability issues associated with PVC

