

# Science for Environment Policy

## Waste prevention through eco-innovation in production and consumption

**Eco-innovations** which help prevent the production of waste are explored in a recent German study. It considers the drivers and barriers to the uptake of material efficiency measures in businesses, green procurement and product leasing schemes.

**The revised European Waste Framework Directive<sup>1</sup>** requires all EU Member States to establish waste prevention programmes by 12 December 2013, with the aim of decoupling economic growth from the environmental impacts of waste generation and reducing the amount of waste produced in each country.

This study draws mainly on German research to explore measures to reduce the amount of waste generated in an economy, as well as the drivers and barriers to [waste](#) prevention. It focuses on eco-innovations in production and consumption to prevent waste in the first place. The researchers explored three examples of waste prevention measures to identify key factors which encourage or hinder the adoption of these measures.

The first measure was [material efficiency](#) in [companies](#). In Germany, for example, research suggests automotive manufacturers could save 7% of their production material costs without adopting any new technical measures. To promote resource efficiency and raise awareness of reducing waste in production processes, one possible measure would be for consultants that provide efficiency advice to help companies identify and implement eco-innovative measures as part of a full waste-cost-control strategy. Drivers of this material efficiency would be the economic and environmental benefits realised by the companies, the study says. Barriers would include businesses being unaware of either waste prevention technologies or the costs associated with excessive waste generation.

Green procurement was the second measure considered. By adopting a 'green' approach, procurement can play a leading role in reducing waste. Green public procurement contracts can require, for example, that manufacturers produce goods in an eco-friendly way that minimises waste generation. This could include redesigning products to be more resource efficient and better suited for reuse and recycling after use.

One measure that would help both buyers and suppliers with the technical aspects of tenders would be the provision of publicly-available specifications and guidelines (e.g. criteria catalogues) containing ecologically-oriented alternatives with waste prevention potential. Some barriers preventing green procurement include legal uncertainties related to the innovative nature of some products and services, and a lack of relevant technical experience in the purchasing organisation. To overcome these barriers, a framework that includes waste prevention as key requirement of green public procurement would be useful.

The third measure considered was the promotion of product service systems. Instead of buying new goods, such as garden tools and office equipment, consumers can rent, lease or share them. Car-sharing schemes already operate in many cities, for example.

Measures to promote the benefits of such schemes include information campaigns and research into how modern communication and information technologies can drive this concept forward. Despite the advantages of 'consumption without ownership', a major barrier is changing consumer attitudes towards ownership of products, particularly with fast-changing fashions and newer versions of products regularly appearing on the market. The researchers suggest building on existing schemes by developing specific information for different parties, as well as providing opportunities for the exchange of ideas and practices among all stakeholders. Coordination between the relevant stakeholders at federal, state and municipal levels could be achieved within the framework of a national waste prevention programme.

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