Global Action for Sustainable Consumption and Production

10YFP Consumer Information PROGRAMME

UN environment

The Long View

Exploring Product Lifetime Extension



Summary : The Long View
Exploring Product Lifetime Extension

The aim of this study is to provide recommendations on the opportunities available to consumers, the private sector and governments, of developed and developing economies, to address product lifetime extension. The primary focus of the report is on policy-making.

Through product lifetime extension, the rate at which we use up (natural) resources and produce waste can be radically reduced, while the economic value embedded in our products is preserved as much as possible. This is, in theory, a win-win situation for both the environment and the economy (businesses save on costs and consumers get better value for money). The report investigates several ways to extend the useful lives of products: (1) by simply using products for a long(er) time, (2) by extending their use through design, maintenance and upgrades, and/or (3) by recovering broken products through repair, refurbishment or remanufacturing.

A state-of-the-art review in the first chapters concludes that product lifetime extension is not a widespread practice in developed economies. Here, rapid replacement cycles have become the norm and consumers express feeling “locked-in” to wasteful consumption patterns. In developing and lower-income economies, the situation is different as informal repair markets are common and there seems to be a culture of keeping products in use for longer.

Replace or Repair? Literature review

A review of Life Cycle Assessment (LCA) studies was conducted on the optimal replacement moment of seven use-intensive product categories (washing machines, refrigerators, TVs, mobile phones, laptops, clothing and vacuum cleaners). The results show that washing machines and refrigerators should be used for at least 10 years before they should be replaced with a more energy-efficient model. Vacuum cleaners, clothing, mobile phones and laptops are usually replaced ‘before their time’ and should be (re)used for longer (although pinpointing an exact replacement moment is very difficult). In the case of TVs, it makes sense to keep older LED models in use, instead of replacing them with newer, less energy efficient 4K models. It follows that each product category requires a specific approach and set of policy measures as illustrated in the table on the next page.

In general, policy makers should bear in mind that: 1) Successive generations of electronic products are not always more energy efficient, 2) Replaced products are not always taken out of circulation, and 3) LCA scenarios must be modelled as close to the ‘real, messy world’ as possible to do justice to the highly diverse user contexts and cultures. This requires large amounts of data, both technical (i.e. energy efficiency developments) and sociological (i.e. diverse use patterns).

	Main findings from the literature	Recommendations
	Washing machines should be at least 10 years old before replacement becomes worthwhile (from an environmental perspective). There is a bias towards European data. Data from developing economies is missing. Consumer use scenarios and use contexts vary greatly across cultures, which impact the optimal replacement moment.	• Develop more Life Cycle Assessment studies that include a range of use patterns in order to arrive at more reliable conclusions. • Promote sustainable use practices to help decrease the environmental impact of clothes washing (for instance cold water washing, or completely filling the machine before washing).
	Based on data of developed economies, refrigerators of over 10 years old should be replaced with more energy efficient models. Old refrigerators are however not always taken out of circulation, but often exported to developing economies, where they continue to be used.	• Raise awareness and build capacity on energy-efficient repair in developing economies.
	Energy consumption of the latest generations of TVs (UHD, smart) is increasing compared to previous generations of LED TVs. Product replacement could thus undo energy savings which were made in the past. With such rapid technology cycles in the television industry, LCA studies on optimal replacement moments quickly become irrelevant.	• Ensure that the energy consumption of novel generations of TVs does not trend upward again, through appropriate measures in policies, such as the European Ecodesign Directive.
	The extraction and manufacturing phases are still the biggest contributors to the environmental impact. The impacts of the use phase are increasing, however, due to the increasing use of network infrastructure.	• Incentivise the extension of the useful life of mobile phones beyond the current 3-4 years, for instance through stimulating refurbishment or modular/repairable designs. • Consider regulating the energy consumption of the network infrastructure, to ensure it keeps functioning energy efficiently.
	Product lifetime extension leads to environmental benefits. The optimal replacement moment was calculated to be (at least) 7 years. In practice, laptops are used for 4 years on average. Even though laptops are becoming more lightweight, this does not necessarily change their environmental impact.	• Ensure that the lifetime of laptops is extended, for instance through minimum durability criteria, and stimulating modular/repairable designs.
	Vacuum cleaners are often replaced before they are 5 years old. This is less than the expected lifespan. Product lifetime extension is recommendable in most cases. In spite of the minimum durability criteria in the EU Ecodesign Directive, there may be factors that stimulate rapid replacement of vacuum cleaners. One of these factors is a seeming reluctance (in developed economies) to engage in maintenance and repair activities, instead preferring to buy a new (cheap) vacuum cleaner.	• Pay attention to consumer education. • Stimulate better product design (easier to clean and repair).
	Extending the useful life of clothes (including greater re-use) and more sustainable laundry practices have the potential to create considerable resource and cost savings.	• Create durability indicators on clothing. • Stimulate new business models (such as leasing or hiring of clothes). • Educate consumers regarding sustainable laundry practices.

Recommendations for developed economies

For developed economies, the report describes two policy perspectives related to product lifetime extension. The open source perspective is based on the idea that if consumers have better information, they can make better buying decisions. The success of the open source policy perspective will depend on consumers taking action, supported by relevant policy measures, non-governmental organizations (NGOs) and industry initiatives. The report recommends the following short/medium-term policy measures:



Open Source perspective: enable and support consumers to extend the lifetime of their products	
Law against planned obsolescence	Planned obsolescence was recently made punishable by law in France (through articles L441-2 and L454-6 of the Code de la Consommation). It is recommended to evaluate the implementation of the French law and, if effective, to consider EU-wide adoption and adoption in other countries/regions.
Minimum durability criteria	The European Ecodesign Directive already has minimum durability criteria for light bulbs and vacuum cleaners, and more measures are planned. The criteria in the European Ecodesign Directive could be extended and measurement standards, test standards and verification methods for durability and resource efficiency could be developed for a range of products.
Product lifetime labelling	A comprehensive study by the European Economic and Social Committee (2016) indicates that consumers respond positively to product lifetime labelling. More research and testing needs to be done to study the effectiveness of lifetime labels, and to develop standardized measurement procedures. If product lifetime standards are based on manufacturers' data, they have to be willing to participate, thus incentives need to be introduced.
Extended product warranty	France and Portugal have extended the period for the reversal of the burden of proof from 6 months to two years. It is recommended to evaluate the French and Portuguese measures and, if successful, to consider making this an EU-wide measure and introducing it in other countries/regions.
Right to Repair legislation	Repair needs to be affordable and accessible for consumers (for instance through publicly available repair manuals). A reduction of Value Added Tax on repair can further incentivize actions in this area. In France, manufacturers and retailers are obliged to inform consumers on spare part availability. It is recommended to evaluate the 2016 law (decree nr. 2014-1482) and, if effective, to consider adoption at EU level and introduction of similar legislation in other countries/regions.
Monitoring of trends in product lifetimes	Monitoring the trends in product lifetimes of a range of energy-use-intensive products consistently, over a number of years, can track the impact from different generations of products and provide up-to-date suggestions for lifetime extension.
Consumer education and information	The promotion of the development of (for instance) product buying/use guides, or consumer awareness/marketplace campaigns, can increase the understanding of product durability, induce a positive consumer attitude towards product maintenance and repair, and encourage consumers to hold companies to account.

The second policy perspective is called closed loop. It is based on the idea that product lifetime extension is a strategic business decision. To 'close the loop' is for companies to (be able to) maintain economic control over their resources and products over the product's entire lifetime, including the consumer use stage, through alternative business models (like lease or pay-per-use). This incentivizes the development of durable and reusable products. The success of this perspective will depend on the extent to which these alternative business models are accepted and embraced by both consumers and industry. The report recommends the following short/medium-term policy measures:



Closed Loop perspective: enable manufacturers to retain full responsibility over their products in order to extend product lifetime	
Individual Producer Responsibility	Individual Producer Responsibility (IPR) can be considered for selected product categories. It is recommended to evaluate the Japanese IPR regulation for air conditioners, TVs, refrigerators and washing machines, and to explore if a translation to other countries' contexts is feasible.
Removal of legal barriers for refurbishment and remanufacturing	The development of international standards for remanufacturing and the introduction of warranties and a tax reduction on remanufactured products can provide incentives. There is also a need to address trade barriers that prohibit the import of product parts that are to be remanufactured.
Alternative business models	Stimulating the acceptance of alternative business models (the shift from ' owning' to 'using' products) in the Business-to-Consumer market, includes addressing privacy and other liability issues pro-actively.

Recommendations for developing economies

For developing economies in which the informal second-hand and repair market is highly developed, the report recommends the following policy measures:



Product lifetime extension in developing economies	
Improvement of waste treatment infrastructure	In many economies a formal, environmentally sound and safe waste management system is needed. In order to make such a system function properly, public education on how and where to dispose products is required.
Recognition of the full potential of the informal sector	Informal economic sectors that revolve around trading, repairing and regaining materials from redundant products currently lack access to investment capital and information to make repairs energy efficient, safe and environmentally sound. It is recommended to recognize these professions and offer them social rights, official status, and training.
Stimulation of energy efficient repair and refurbishment of old appliances	Addressing the often prevailing lack of an institutional infrastructure to implement energy efficiency regulations, appliance efficiency in the used and rehabilitated appliance market can for instance be promoted and increased through training and the provision of energy efficiency repair manuals.
Consumer education and information	The introduction of energy efficiency labelling, other eco-labels and awareness campaigns can stimulate the more affluent households to invest in high-quality, longer lasting and/or energy efficient products.
Monitoring, verification and enforcement (MVE) measures	Developing monitoring, verification and enforcement (MVE) measures can help ensure that energy efficiency and product lifetime standards are met.

Recommendations for the 10YFP Consumer Information Programme

Specific recommendations for the Consumer Information Programme of the 10 Year Framework of Programmes for Sustainable Consumption and Production (10YFP) to pursue include to:

- Work with consumer organizations to develop product buying and use guides in different economies, and/or include lifetime extension criteria in product testing and reviews.
- Create/promote awareness raising campaigns about 'buying for life'.
- Collect and promote innovative business practices (e.g. showcasing the shift to service models) through interactive formats, such as videos or social media. An emphasis should be put on sharing such practices between countries, and to feature leading cases from developing economies.
- Cooperate with knowledge institutes and universities to collect data on the real-life use of products in both developed and developing economies.
- Integrate consumer information components focusing on product lifetimes in existing e-learning courses.

The 10YFP Consumer Information Programme

The Consumer Information Programme of the 10 Year Framework of Programmes on Sustainable Consumption and Production acts as a global platform supporting the provision of quality information on goods and services, to engage and assist consumers in sustainable consumption. To do so, it implements and supports projects; undertakes research; identifies and encourages policies; and provides collaboration opportunities.

More information can be found at http://www.scpclearinghouse.org/consumer-information-scp.



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