

Challenges to boosting reuse rates in Europe

Introduction

Decoupling waste generation from economic growth is proving a mammoth task. EU politicians and policy makers firmly believe that addressing the poor implementation of the current waste acquis will help move towards a Resource Efficient Europe¹. Globally, 20-50 million metric tonnes of WEEE is still disposed of each year whilst in the UK alone 2 million functioning PCs are dumped into landfill². It is a similar story for used textiles and furniture.

The role of reuse, however, is all too often overshadowed in the political arena by recycling, and this is clearly reflected in current legislation. Whilst recycling is indeed key to sustainable resource management, it is a risk to neglect improving the conditions for reuse activities to flourish.

A number of reuse paths exist such online auction and exchange platforms, where products avoid the waste stream altogether. However, the aim of this article is to focus on the potential for reuse of products once they enter the waste stream in order to highlight some key obstacles and possible solutions to boosting reuse rates.

The Benefits of reuse today

Environment

Put simply, the reuse of appliances offsets the need to produce a new appliance, thus saving its embodied energy, materials and chemicals. For example UK research body WRAP estimated that current reuse of T-Shirts³ and sofas⁴ in the UK save 450,000 tonnes CO₂-equivalent and 52,000 tonnes CO₂ equivalent per year.

Regarding electronic equipment, the market penetration of many products rated 'A' or A+ has been significant since the turn of the millennium (Fig.1)⁵ and since 2005, the annual energy efficiency gains through better product design is decreasing in comparison to the advances made between 2000-2005⁶ (Fig.2)

¹ http://www.europarl.europa.eu/meetdocs/2009_2014/documents/envi/dv/899/899789/899789en.pdf

² UNEP (2006) Basel Conference Addresses Electronic Wastes Challenge.

³ WRAP (2011) Benefits of Reuse Case Study: Clothing Project.

⁴ WRAP (2011) Benefits of Reuse Case Study: Domestic Furniture.

⁵ Attali, S., E. Bush, et al. (2009) Factors influencing the penetration of energy efficient electrical appliances into national markets in Europe.

⁶ Maurice.W.OConnell, Stewart.W.Hickey, et al. (2011). Evaluating the Sustainability Potential of a White Goods Refurbishment Program in Ireland. Limerick, Ireland, Department of Electronic and Computer Engineering, University of Limerick, Limerick, Ireland.

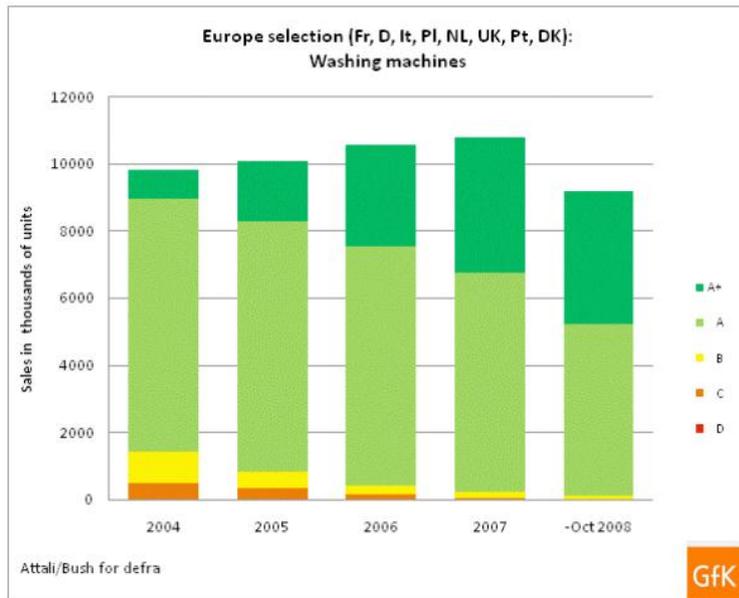


Figure 1: Market penetration of A+ washing machines since 2004 (Attali, Bush et al. 2009)

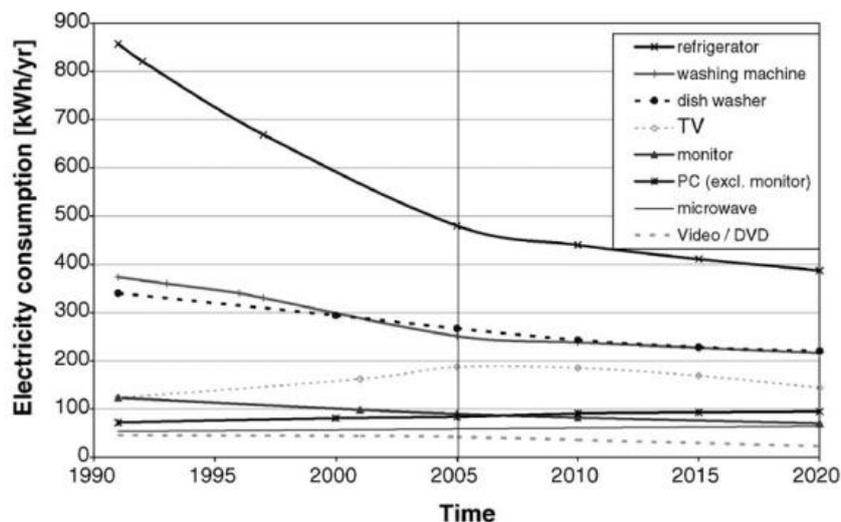


Figure 2: Lower rate of energy efficiency gains through better future product design predicted (Truttmann and Rechberger 2006)

In addition we are in the midst of a throwaway culture with diminishing lifespans of products as well as high repair costs. One study found that the average lifespan of a personal computer fell from about 8 years in 1990 and estimated to be just under 2 years in 2010⁷

Thus there is an increasing proportion of energy efficient appliances which are discarded at collection points often still in functioning order. Directly recycling these appliances exacerbates any benefits from energy savings (in the use phase) as new energy and materials are required to manufacture a new product.

⁷ Babbitt, C. W., R. Kahhat, et al. (2009). "Evolution of Product Lifespan and Implications for Environmental Assessment and Management: A Case Study of Personal Computers in Higher Education." *Environmental Science & Technology* 43(13): 5106-5112.

Socio – economic benefits of reuse

Reuse is labour intensive as it involves collection, sorting, testing, refurbishment and reselling which is important considering the EU is experiencing an average unemployment rate of nearly 11%. Social enterprises working in the field of reuse provide opportunities for those distanced from the labour market to gain key skills such as driving commercial vehicles, carpentry, electrical engineering or marketing. Some even embark on intricate trash design or eco-fashion activities⁸.

Regarding economic benefits, it costs France 20,000 EUR to support an unemployed person. By funding integration contracts in the field of textile collection, reuse and recycling, the state only pays half this and ends up saving 2 Euros for every Euro spent. At the same time it improves the skill set of its workers and boosts green jobs⁹. In the UK, WRAP estimated that reuse of a selection of waste streams brings benefits of £720 Million of savings to the economy.

Concerning job potential, UNIDO and Microsoft¹⁰ found that computer reuse creates 296 jobs for every 10,000 tons of material disposed of each year. In addition, Irish enterprise Rehab Recycle, calculated that between 2010, business to business IT reuse generated 10 times more jobs than the equivalent tonne of recycled materials¹¹. The Illinois Department of Commerce and Economic Opportunity estimate also that for every 1,000 tonnes of electronics, 15 jobs can be made in recycling whilst up to 200 jobs exist if refurbished and repaired¹².

Key obstacles for reuse

Despite the above-mentioned benefits, a number of key obstacles are hampering reuse rates, including access to the waste stream for accredited and trusted reuse actors, the costs of labour and more product design.

Access to the waste stream for accredited reuse actors

Producer responsibility schemes attempt to internalise the products end of life costs on the environment¹³. The scheme for WEEE is well known, where a fee is added to the price of a new product to cover such costs. However, these schemes are managed by producer and retailer

⁸ examples: <http://www.trashdesign.at/>, <http://www.rediscoverycentre.ie/>,

⁹ Relais, L. (2012) Dossier de Presse.

¹⁰ Unido, M. a. (2009). "Reuse and Recycle: Growing Green Business." from http://www.unido.org/fileadmin/user_media/Services/PSD/ICT/O_Green_busines.PDF.

¹¹ Fitzpatrick, C., M. O'Connell, et al. (2011). "Towards a new National Waste Policy - Discussion Document August 2011." from http://www.reevaluate.ie/wp-content/uploads/Towards_a_new_national_waste_policy_30_Sept.pdf.

¹² DECO (2009). "ELECTRONICS RECYCLING Economic Opportunities and Environmental Impacts." from <http://www.illinoisbiz.biz/NR/ronlyres/8DD41FE3-A7ED-4447-87C0-DD05815F2747/0/EwasteFactSheet.pdf>.

¹³ OECD (2006) EPR Policies and Product Design: Economic Theory and Selected Case Studies.

consortia, often in absence of clear regulation who dictate what happens to the goods once at the collection points. In practice, once a product finds its way to a collection point, be it retail or municipal, its most likely destination is direct recycling or recovery, irrespective of whether it is still functioning or simply needing minor repair. Around 40% of discarded large kitchen appliances that enter the waste stream are still in working order¹⁴. Restricting access to reuse entities to at least check for reusability at collection points is thus a socio-economic waste and a missed environmental opportunity.

A lack of trust of reuse organisations on behalf of the producers has been highlighted as an issue. Sometimes this is understandable considering cases of illegal exports of WEEE which are branded as destined for reuse without any documentation of repair or traceability of appliances (Sham reuse). Without adequate monitoring and reporting mechanisms of all items by actors involved in preparation for reuse we face the risk that informal actors slip under the radar and illegally export WEEE.

Nevertheless this cannot be an excuse to prevent preparation for reuse altogether, especially in countries where well established and professional entities can guarantee proper treatment of the appliances suitable for reuse. If accredited reuse organisations are restricted from accessing collection points, we can question the way producer responsibility schemes reflect the waste hierarchy, especially regarding preparation for reuse.

Product design

In general, Europe is experiencing a flood of cheaper and poorly designed products on the market, rendering their reuse potential increasingly low (textiles are a good example). A RREUSE study showed that the proportion of clothes collected that can be reused declined from 60% to 40% in Belgium and the Netherlands between the period 2000 and 2005¹⁵

In the case of electronics, one of the main complaints from reuse actors is not being able to disassemble a product easily to repair it. In addition a lack of available spare parts increases the price of repair dramatically. Manufacturing standardised parts by third parties for different producers is thus very rare leading to an often expensive reuse and repair sector industry which is also hit by high labour taxes.¹⁶

Lastly, as mentioned previously, the lifespan of appliances is being decreased not only by poor design but also through fashion trends and advertising affecting consumer choices, cleverly pushing

¹⁴ Evans, S. and T. Cooper (2011). Consumer Influences on Product Life-Spans. Longer Lasting Products: Alternatives to a Throwaway Society T. Cooper. Farnham, Gower Publishing Ltd. : 319-350.

¹⁵ ACR+ (2009). Description & comparative analysis of selected “Extended Producer Responsibility” schemes for textiles in the EU. Brussels, ACR+.

¹⁶ Stahel, W. (2011). Durability, Function and Performance. Longer Lasting Products: Alternatives to a Throwaway Society. T. Cooper. Surrey, Gower Publishing Ltd. : 158-177.

them into upgrading appliances in the name of energy efficiency. There are few manufacturers producing longer lasting durable products that use these qualities to their advantage in advertising¹⁷

Some key solutions

Increase networks of accredited reuse centres

Social enterprises active in the field of reuse and repair house some of the very best practice in repair and reuse activities. These entities have a professional approach in that they have adequate monitoring and reporting systems on collected, prepared for re-use, recovered and exported goods. They provide guarantees in terms of environmental and health and safety compliance, standardised treatment procedures, reused products' liability, reporting and traceability, insurance, technical expertise, training and license requirements, after sales service.

Such examples can be found throughout Europe including the Furniture Re-use Network in the UK which have devised the first UK Reuse Quality Management System, 'Approved Re-use Centre' (ARC) network¹⁸, plus standardised WEEE reuse guidance in the FRN publication 'Fit for Reuse'¹⁹. There also exist a number of quality guarantee labels including Revisie (Flanders) and ElectroREV (Brussels and Wallonia). ENVIE, who collect and treat 25% of all WEEE in France also have dedicated systems for traceability for what goes for reuse and what for recycling.

It is precisely such organisations which are trusted and accountable for the products which they collect, repair, reuse and recycle that should be granted access to all waste collection points in order to be able to assess the reuse potential of collected goods. Article 6(2) in the WEEE Recast is at least a step towards addressing this issue²⁰. This trust can be seen in the field of textile reuse and recycling where social enterprises have access to collected materials and are a key player in a textiles producer responsibility scheme in France, the only national scheme in the EU.

There are already cases, mainly in Western Europe, of cooperation between social reuse actors, private waste management companies and municipalities allowing such access but this is far from the norm. A focus on formalising such activities is now gathering significant attention in Central and Eastern Europe²¹

The Commission is currently working on best practice guidance for creating and managing producer responsibility schemes²².

Set separate prepare for reuse targets

Legally binding separate preparation for reuse targets are needed in order to make separation of potentially reusable equipment and products obligatory. The recent WEEE Recast was a missed

¹⁷ Mackenzie, D., T. Cooper, et al. (2010). Can Durability Provide a Strong Marketing Platform? . Longer Lasting Products: Alternatives to a Throwaway Society. T. Cooper. Surrey, Gower Publishing Ltd. : 298-315.

¹⁸ http://www.frn.org.uk/index.php?option=com_content&view=article&id=117&Itemid=117

¹⁹ http://www.frn.org.uk/index.php?option=com_content&view=article&id=101&Itemid=100

²⁰ <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P7-TA-2012-0009+0+DOC+XML+V0//EN>

²¹ <http://www.eko-tce.eu/>, <http://cerrec.eu/>, <http://www.transwaste.eu/>

²² <http://ec.europa.eu/environment/waste/use.htm>

opportunity to set the first 5% prepare for reuse target on a waste stream which could have set a precedent for other waste streams. However, a separate target is not off the table as a feasibility study by the Commission and possible legislative proposal must be made by 2016.

Targets would help open up producer responsibility schemes to help achieve them and generate national investments into setting up networks of accredited reuse centres. They would also provide incentives for adequate handling of equipment to and at collection points, which is another major cause in diminishing reuse rates.

Improving the dataset concerning preparation for reuse is a must. Some countries have started to report 'reused' tonnages for different product groups to Eurostat but the data is fragmented²³.

Designing products that last

The Commission is devising possible durability, reusability and reparability criteria for products covered by the Ecodesign Directive and the EU Ecolabel Regulation. Such criteria would be a step towards thinking about not just the energy efficiency or use phase of a product, but also forcing designers to think about ease of product disassembly. 80% of the environmental impacts of products are at the design stage²⁴. Such tools could prove effective in prolonging the lifespan of a product, however, with stretched resources in the Commission, the amount of time given to this area is unfortunately too little for the time being.

Economic Incentives

Reducing taxes like VAT on repair-work may boost the visibility of repair work and make repairs and refurbishment cheaper²⁵. One could shift some of these taxes onto certain natural resources.

Regarding economic incentives, differentiated visible disposal fee for the purchase of new equipment or products that are more easily repaired and disassembled could be an interesting way to incentivise the design of products that last.

Indeed there exist other ways to boost reuse and recycling markets for example through establishing cooperation between reusers, retailers and purchasers to re-introduce reused items onto the market via traditional shops or through special provisions in public procurement.

Lastly education on the benefits of waste prevention and reuse is essential, Continuation of existing education programmes such as the Waste Watchers Campaign will form a key part in moving towards a more sustainable mode of consumption.

Conclusions

²³ Eurostat: <http://epp.eurostat.ec.europa.eu/portal/page/portal/waste/data/wastestreams/weee>

²⁴ DEFRA (2005). "Securing the future: delivering UK sustainable development strategy." from http://archive.defra.gov.uk/sustainable/government/publications/uk-strategy/documents/SecFut_complete.pdf.

²⁵ Cooper, T. (2011). Policies for Longevity. Longer Lasting Products: Alternatives to a Throwaway Society. T. Cooper. Surrey, Gower Publishing Ltd. : 216-240.

It is clear that there are significant socio-economic and environmental benefits in reuse activities. Trust between producers and accredited reuse actors is essential for good cooperation. In particular the transparency of reuse operations must be improved in some areas although as explored above, there are plenty of best in practice examples where this is already occurring. Together with separate prepare for reuse targets and access for trusted accredited reuse actors to collection points, producer responsibility schemes will start addressing the top of the waste treatment hierarchy.

As the Commission recently stated, "we must move away from a wasteful economy towards one based on durability and reparability of products which is likely to create job opportunities throughout the product lifecycle in terms of, maintenance, repair, upgrade, and reuse."²⁶

References

ACR+ (2009). Description & comparative analysis of selected "Extended Producer Responsibility" schemes for textiles in the EU. Brussels, ACR+.

Attali, S., E. Bush, et al. (2009) Factors influencing the penetration of energy efficient electrical appliances into national markets in Europe.

Babbitt, C. W., R. Kahhat, et al. (2009). "Evolution of Product Lifespan and Implications for Environmental Assessment and Management: A Case Study of Personal Computers in Higher Education." *Environmental Science & Technology* **43**(13): 5106-5112.

Commission, E. (2012). "Exploiting the employment potential of green growth." from <http://ec.europa.eu/social/BlobServlet?docId=7621&langId=en>.

Cooper, T. (2011). Policies for Longevity. *Longer Lasting Products: Alternatives to a Throwaway Society*. T. Cooper. Surrey, Gower Publishing Ltd. : 216-240.

DECO (2009). "ELECTRONICS RECYCLING Economic Opportunities and Environmental Impacts." from <http://www.illinoisbiz.biz/NR/rdonlyres/8DD41FE3-A7ED-4447-87C0-DD05815F2747/0/EwasteFactSheet.pdf>.

DEFRA (2005). "Securing the future: delivering UK sustainable development strategy." from http://archive.defra.gov.uk/sustainable/government/publications/uk-strategy/documents/SecFut_complete.pdf.

Evans, S. and T. Cooper (2011). Consumer Influences on Product Life-Spans. *Longer Lasting Products: Alternatives to a Throwaway Society* T. Cooper. Farnham, Gower Publishing Ltd. : 319-350.

²⁶ Commission, E. (2012). "Exploiting the employment potential of green growth." from <http://ec.europa.eu/social/BlobServlet?docId=7621&langId=en>.



Fitzpatrick, C., M. O'Connell, et al. (2011). "Towards a new National Waste Policy - Discussion Document August 2011." from http://www.reevaluate.ie/wp-content/uploads/Towards_a_new_national_waste_policy_30_Sept.pdf.

Mackenzie, D., T. Cooper, et al. (2010). Can Durability Provide a Strong Marketing Platform? . Longer Lasting Products: Alternatives to a Throwaway Society. T. Cooper. Surrey, Gower Publishing Ltd. : 298-315.

Maurice.W.OConnell, Stewart.W.Hickey, et al. (2011). Evaluating the Sustainability Potential of a White Goods Refurbishment Program in Ireland. Limerick, Ireland, Department of Electronic and Computer Engineering, University of Limerick, Limerick, Ireland.

OECD (2006) EPR Policies and Product Design: Economic Theory and Selected Case Studies.

Relais, L. (2012) Dossier de Presse.

Stahel, W. (2011). Durability, Function and Performance. Longer Lasting Products: Alternatives to a Throwaway Society. T. Cooper. Surrey, Gower Publishing Ltd. : 158-177.

Truttmann, N. and H. Rechberger (2006). "Contribution to resource conservation by reuse of electrical and electronic household appliances." Resources, Conservation and Recycling **48**(3): 249-262.

UNEP (2006) Basel Conference Addresses Electronic Wastes Challenge.

Unido, M. a. (2009). "Reuse and Recycle: Growing Green Business." from http://www.unido.org/fileadmin/user_media/Services/PSD/ICT/0_Green_busines.PDF.

WRAP (2011) Benefits of Reuse Case Study: Clothing Project.

WRAP (2011) Benefits of Reuse Case Study: Domestic Furniture.