

Towards a new National Waste Policy

Discussion Document August 2011

This submission is made by those involved in the “Re-Evaluate – Reuse of EEE – Evaluation and Mainstreaming” project, an EPA Strive research award.

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Reviewed sections: 7.1 & 7.2 questions are reviewed from the consideration of waste electrical and electronic equipment (WEEE)

Also Attached: A paper currently undergoing peer-review at Environmental Science & Technology “*Evaluating the Sustainability Potential of a White Goods Refurbishment Program in Ireland*”

Discussion of prevention questions

1. How can communities, individuals, businesses and the public sector be better encouraged to focus on waste prevention?

Green procurement: Ireland's public sector is a very large consumer of EEE and can increase their focus on waste prevention through the implementation of sustainable procurement policies. By using their purchasing power to choose environmentally friendly goods and services they can make a significant contribution to sustainable consumption and production.

An example would be the use of cloud computing in the delivery of IT services. Services such as Infrastructure-as-a-Service, virtualisation and Software-as-a-Service all have the potential to use computing resources more efficiently and thereby reduce the amount of e-waste generated per service delivered [1].

Another example would be the use of thin client systems which reduces the generation of e-waste due to less hardware required, longer useful lifetimes with the added benefit of having much lower energy consumption [2].

Purchasing refurbished EEE would provide a major incentive for the diversion of used EEE from the waste stream and into re-use. Public authorities should be encouraged to buy accredited reused electronic and other products, as a way of reducing and reusing waste.

Public authorities should also be encouraged to purchase goods that are eco-designed to reuse parts and components to such standards as the EU Eco-Label, again minimising waste and avoiding depletion of rare metals and the disposal of hazardous materials [3][4].

2. Are the current Producer Responsibility schemes the best vehicle to deliver on our EU waste prevention obligations in the current challenging economic circumstances? What alternative approaches might be considered?

In the EEE domain Producer Responsibility Schemes do not have a major bearing on waste prevention. Producer responsibility has a much larger role in re-use.

Alternatives

Lease based and service based systems: Shifting the business focus from designing and selling physical products only, to selling a system of products and services which are jointly capable of fulfilling specific consumer demands can play a role in waste prevention.

An example in IT services would be the Google Chromebook educational offering. This service has no upfront cost but charges €14 per month which includes the hardware and operating system, updates, cloud-based management, and complete support, all supplied directly from Google [5]. The nature of this service delivery places an incentive on the manufacturer to keep the hardware in full working order for the longest possible time and reverses the incentive for a

high turnover of equipment. The most recent Census in ICT in education taken in 2005 shows that 24% of computers in Irish schools were either in need or repair or beyond repair so this has the potential to prevent a lot of waste generation [6]. Further research is needed in this area but it shows good prospects as a waste prevention strategy.

Discussion of reuse questions

1. Which waste streams are best suited to reuse?

Consumer attitudes and acceptability towards different reused products vary. A survey conducted by Flash Eurobarometer gauged EU citizen's perceptions, attitudes and practices concerning resource efficiency, waste management and recycling [7]. A thousand sources were used for each country within the EU 27. The results show Irish peoples willingness to buy second-hand electronics is 42% (figure 1) compared to 28% (figure 2) for second-hand textiles and 57% for second hand furniture (figure 3). Currently there are over 400 textile reuse shops actively selling within Ireland. This suggests a large market for second hand electronics, which is currently under-served.

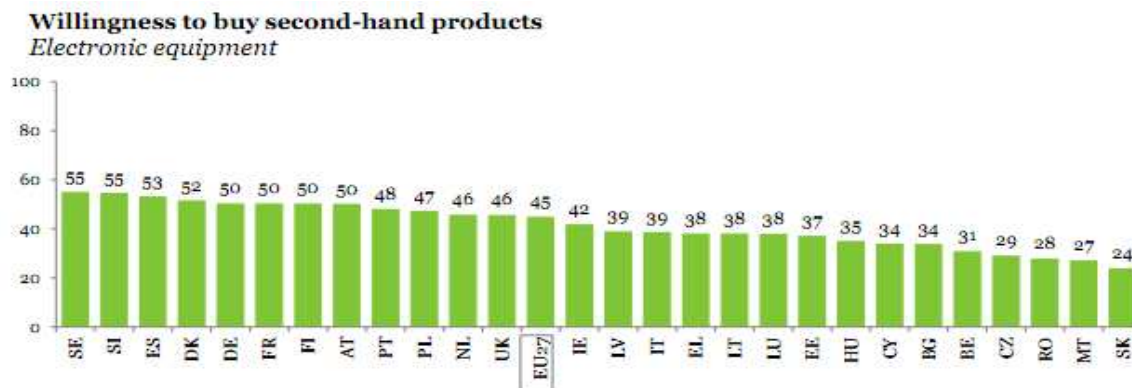


Figure 1: Consumer willingness to buy second-hand electronic equipment

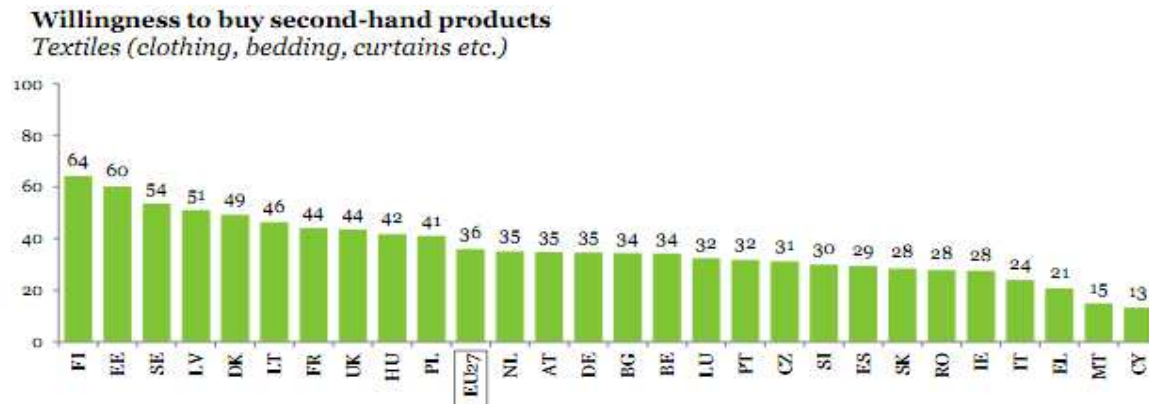


Figure 2: Consumer willingness to buy second hand textiles

Willingness to buy second-hand products
Furniture

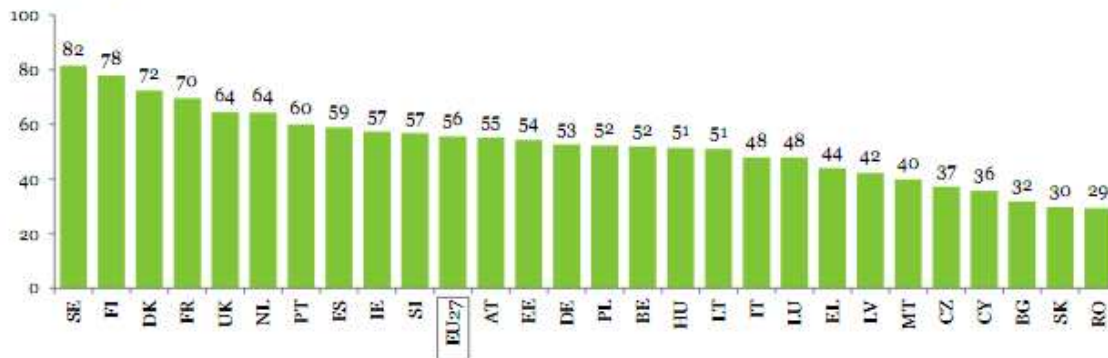


Figure 3: Consumer willingness to buy second-hand furniture

WEEE is a waste stream with many successful reuse enterprises across the EU [8]. Large household appliance (washing machines, dryers, dishwasher's refrigerators and freezers), mobile phones and microwaves have all been demonstrated to have a strong potential for reuse based on other countries in the EU.

For example, Bryson in Northern Ireland processed 6395 machines of which 4605 (3333 CA, 1272 retailer) appliances were refurbished from April 2010 to March 2011. This accounted for just under 1% of total WEEE in Northern Ireland by weight.

This demonstrates how successful white goods refurbishment can be if it is fully utilised. Referring again to Figure 1, Irish consumer acceptance and willingness to buy second-hand electronics (42%) is only marginally lower than the UK (46%) and quite a bit higher than Belgium (31%) which highlights the potential for a viable refurbishment market in Ireland

The research conducted during the Re-Evaluate project has identified the following as having potential (technical, economic, environmental, social & legal) for reuse in Ireland under existing conditions.

- IT equipment
- Telecommunications equipment
- Large household appliances

This equipment should be the focus of initial efforts in re-use but this list could be expanded under different conditions and other equipment should not be precluded from re-use initiatives.

2. What are the essential supportive ingredients necessary to support the success of a more ambitious reuse policy?

Inclusion of Reuse in Recycling targets: Once products have entered the market, reuse is the best form of waste prevention. For reuse to be integrated into the system, changes in regulations are required, specifically for the case of WEEE. Currently there is no incentive for

producer lead compliance schemes to conduct reuse within Ireland, as reuse does not count towards their recycling targets. Within the UK and Belgium, reuse of WEEE counts towards their individual countries EU recycling targets as part of the WEEE directive, which reuse organisations have identified as a contributing factor to their success. Irish legislation needs to be amended in order to create incentives and obligations for compliance schemes to conduct reuse where there is potential for it to be sustainable from a social, economic and environmental perspective. The transposition of the recast of the WEEE directive into national legislation would be one opportunity to do this but should also be considered in advance of this.

An aggressive means of supporting re-use would be to give it extra weighting *vis á vis* recycling. The Illinois Electronic Products Recycling and Reuse Act (Public Act 095-0959) is a good example of such an aggressive pursuit of reuse where the weighting factor for conducting reuse is doubled when undertaken for profit and is tripled if they are donated for reuse to a public education institution or to a not-for-profit entity whose principal mission is to assist low-income children or families or to assist the disabled [9].

With regard to the recast of the WEEE directive, The European Councils current position foresees that previously established objectives for recovery and recycling are increased by 5%, with re-use of whole appliances counting towards them. The European Parliament's position for the second reading stage of the recast process, backs the immediate introduction of an 85% collection target from 2016, introducing a separate 5% reuse target for all WEEE. Both of these positions provide a clear signal that re-use will become a part of the landscape in the coming years.

Separation of equipment: Separation of WEEE with potential for reuse at the earliest stage in the reverse supply chain maximises the potential for reuse. For example Bryson (Belfast) attributes one of its key success factors to the means by which it sources and segregates white goods with potential for reuse. Bryson sources white goods predominantly from civic amenity (CA) sites but also from retailers within Belfast in cooperation with the compliance scheme European Recycling Platform (ERP). They have developed a highly successful three tier cherry picking system, for white goods evaluation and refurbishment. The steps include:

1. Initially white goods are segregated from other WEEE at the CA sites by CA staff.
2. Bryson employees inspect white goods on site recovering machines with possible potential for reuse
3. Machines are assessed technically at the Bryson facility, where refurbishment is conducted when it is technically feasible.

Bryson works closely with the CA sites from which they have arranged collections. On-site staff are educated and informed of the storage requirement for white goods with possible potential for reuse.

3. . *What level of compulsion, if any, should apply to drive the reuse of goods and materials?*

Availability of Equipment: StEP have conducted a study evaluating Best Practices in Re-Use focusing on the specific success factors and barriers for re-use experienced by refurbishers around the world. The scope of the study was limited to information and communication technologies (ICT) and large household appliances as these were the areas of EEE where most refurbished is conducted. Twenty-three refurbishment enterprises from across the world were interviewed during the course of the study. A list of success factors and barriers were derived from the case study interviews (Figures 5 & 6). The survey results confirm that the sourcing of sufficient volumes of good quality used equipment is a key challenge for every organisation, who engages in re-use of EEE. Ensuring availability of the right type of equipment to certified refurbishers is the key difference between it becoming a success factor or a barrier to reuse.

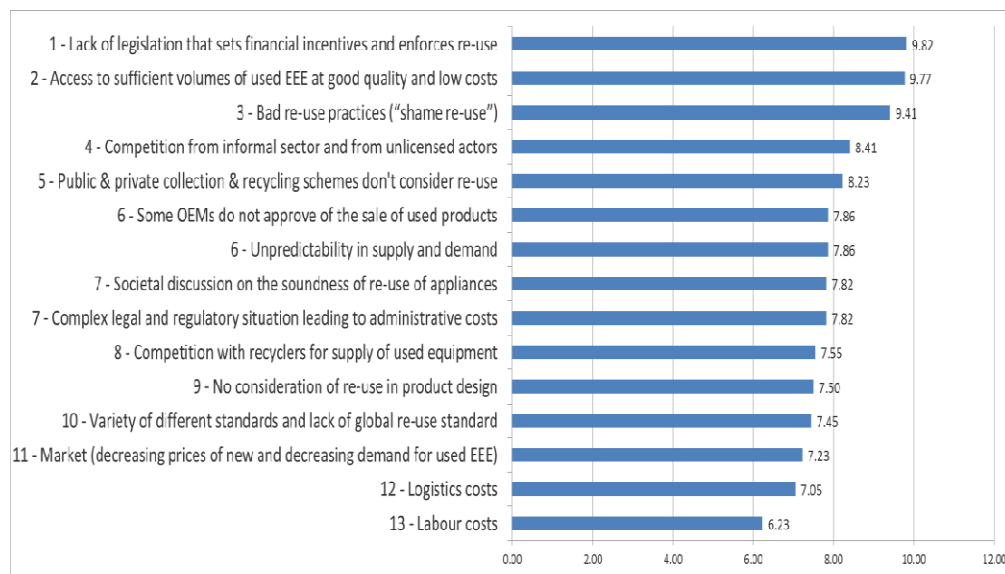


Figure 4: Generic barriers in order of importance

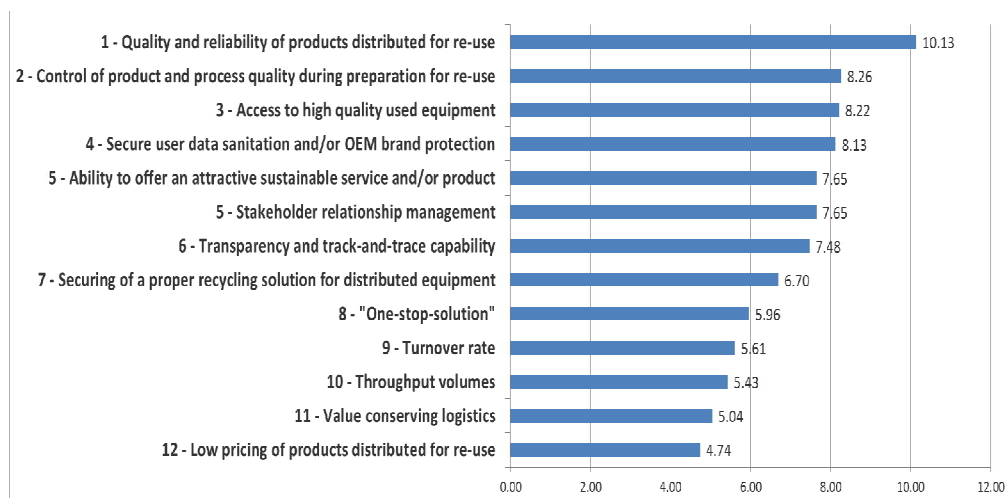


Figure 5: Generic success factors in order of importance

The key finding here is that a successful reuse system will be significantly enhanced by a compulsion to make suitable equipment available to the organisations willing to undertake refurbishment. This complete study will be published shortly as a StEP White Paper and is available on request.

Standardisation of processes and reporting: Reuse should be regulated. Reuse organisations must operate on a level playing field to recycling operators in terms of reporting, accountability, traceability, etc. Unregulated reuse of (W)EEE opens the potential for leakage of waste from properly controlled recycling, also known as sham reuse, including uncontrolled treatment and illegal shipment to developing countries. Only organisations operating to sufficiently high standards should be considered eligible to undertake refurbishment and reuse activities.

A recently published standard (31st March 2011) for reuse of WEEE has been developed by the British Standards Institution (BSi) called PAS 141 “Reuse of used and waste electrical and electronic equipment (UEEE and WEEE). Process management. Specification” [10]. PAS 141 differentiates between untested WEEE/ Used WEEE and Reuse EEE (REEE) assuring and protecting customers of the quality and electrical safety of the REEE.

According to PAS 141 Reuse operations should at least have the following documented processes and should be open to being audited.

- Visual inspection test
- Segregation and storage
- Electrical safety test
- Functionality test
- Data eradication (where applicable)
- Disassembly
- Software removal/uploading (where applicable)
- Cleaning

On receipt of the equipment by the reuse organisation, each piece of equipment should be uniquely identified and tracked through the reuse process and records maintained to demonstrate completed and outstanding reuse processing. Every piece of equipment that has been processed should be labelled and traceable to the reuse organisation.

In Belgium, an initiative called ‘Revisie’, a quality label for electronic appliances has been credited by Kingerwingel as one of their key success factors.

The Flash Eurobarometer survey also queried consumers reasoning for not buying second hand products (figure 4). From the survey 58% of interviewees mentioned quality and usability as a reason for not buying second-hand products. This provides further economic justification for the importance of standards for assuring consumers of quality and the usability of the product

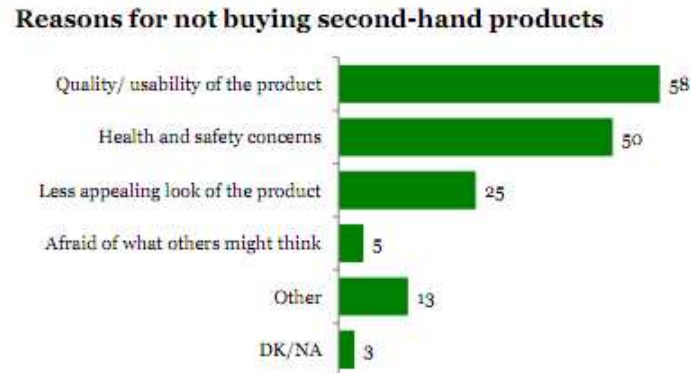


Figure 6: Consumer reasoning for not buying second-hand products

4. Should specific targets be included for specified waste streams at national or local level?

Right Conditions: The right conditions are more important than targets. Enabling reuse to be counted towards targets (and possibly with a higher weighting) rather than setting a specific target, implementing standards for quality control and ensuring access to the right equipment are the fundamental building blocks for a sustainable reuse industry. The success of reuse should be regularly reviewed to see how it could be further assisted and any obstacles should be overcome by compulsion.

5. Should responsibility for improved reuse rest with Government or with the producers of goods which are suitable for reuse?

The Government should put the conditions in place and producers should be enabled (or compelled if necessary) to make sure that it takes place.

The ability of social economy enterprises throughout Europe to viably undertake reuse should be noted and a special role for the social economy in reuse policies should be considered [8]. The encouragement of such enterprises also brings added social benefits such as social employment and equipment and appliances being made available to low-income households that cannot afford market purchase, all of which are valuable in the light of the economic downturn. Options here could include accepting re-use undertaken by suitably qualified organisations to count towards compliance and national re-use targets.

Due to the potential for conflict of interest for producer organised compliance schemes in promoting reuse, a dedicated reuse oriented compliance scheme should be considered to run in parallel with producer run schemes. Combining this with the previous point, this should possibly be a compliance scheme for social economy enterprises.

There are other social reasons for the government to consider prioritising re-use. Figures published by the Central Statistics Office (CSO) on the income and living conditions in Ireland for 2009 showed 0.6 % of individuals were unable to afford a washing machine, 6.5% of individuals were unable to afford a clothes dryer and 8.6% of individuals were unable to afford a dish washer [11]. Providing low cost white goods could potentially lessen the strain on low income families.

The job creation potential of re-use should also be considered. UNIDO and Microsoft estimates that computer reuse creates 296 jobs for every 10,000 tons of material processed [12] and the Illinois Department of Commerce and Economic Opportunity estimates that 1,000 tonnes of electronics creates 15 jobs if recycled and 200 jobs if repaired [13]. For the case of Rehab, from June '09 until May '10 preparing a tonne of equipment for reuse employed 11 times more people than the recycling dimension of their business for an equivalent amount of material. Reuse also generated 15 times more revenue than their recycling activities for the equivalent quantity in the same period.

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