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RREUSE Comments on JRC work on integrating Resource Efficiency aspects into Ecodesign

RREUSE agrees with the contribution provided by the EEB but would like to highlight some extra points, in particular relating to **reusability and durability.**

The members of RREUSE work in the field of reuse, repair and recycling of a number of waste streams including WEEE and are very well placed to offer insights into how product design can affect lifespans of products.

1. Reusability

Reuse centres often store parts recovered from second hand appliances, including washing machines, in order to be able to fix those appliances which have a high reuse potential. Reusability in this context is important, not for removing components of an appliance in order to use in the manufacture of a *new* machine**, but in order to replace faulty components in another machine in order to prolong its lifespan as spare parts are expensive and often hard to come by.** In the case of washing machines components that are often saved by reuse/repair centres for further use include motors, mechanical and electronic electronic steering mechanisms and pressure switches (See Fig.1 – 3)

Figure 1: A typical repair centre storage room full of reusable components from old appliances

Figure 2: Recovered drums and motors from washing machines

Figure 3: an array of pressure switches

As questioned during the stakeholder meeting, components do have economic value as they become crucial when refurbishing a machine which has a faulty component where a replacement spare part does not exist anymore or is simply too expensive to make repair economically viable. Thus this should be considered within the methodology relating to reusability.

RREUSE also agrees with the EEB that reusability should more reflect reparability and the potential for whole appliance reuse or remanufacturing rather than just the components in order to substitute those destined for new machine production.

2. Typical issues encountered with washing machines

Typical faults with washing machines related to product design which often leads to a shortening of its lifespan have been presented in the following video featuring R.U.S.Z, a member of the Austrian Reuse and Repair Network, Repanet (See minute 14:16)

http://www.youtube.com/watch?v=vbMhbWEibxM&feature=plcp

Currently, the large amount of increasingly cheaper mass produced washing machines available on the EU market are posing the following problems to consumers and reuse/repair centres:

- Lower quality shock absorbers cannot withstand 1600 rpm for a long time. In addition the ball bearings get pressed into plastic outer casing of the washing machines which wears out the bearing carrier/bearing seat quickly dramatically reducing its lifespan. In order to replace the ball bearings, not only these have to be replaced but also at least part of the casing. In many cases one has to purchase the complete casing including the drum which is very expensive, often leading to it being cheaper to buy a new appliance. Metal outer casings and better quality shock absorbers would improve durability.

- Problems with the pump fittings/sealants/washers which are made out of rubber degrade quite often or can easily become blocked

- Electronic steering components linked to the timer can fail, which is a problem as increasingly it is difficult to identify the problem with increased numbers of electrical components. Moving towards a more mechanical design would drastically improve reusability/durability.

- The membrane of pressure switches (pressostat) can degrade overtime which leads the washing machine over time to take on more water than it should and is designed to take on. Repair workshops often register degraded membranes which lead to more water and electricity consumption.

- Heaters can stop working prematurely, especially in regions with hard water (high lime content). Washing machines should be serviced at least once a year to prevent limescale which seriously reduce energy efficiency.

3. Data gaps regarding reusability

The JRC observed the activities from 5 recycling plants in order to create the case studies to test the 3R methodologies. None of these plants extracted any components for reuse. The lack of data regarding reusability is alarming and is reflected by the **reusability rate being 0% (reuse of post-consumer waste parts not detected)** in both the washing machine and LCD screen case studies. **This clearly needs to be addressed.**

As members of the RREUSE network are involved in preparation for reuse (repair/refurbishment) of WEEE **we strongly recommend the JRC to visit some of our reuse and repair centres in order to be able to have a true picture of reusability and durability issues in practice and fill in data gaps within their case studies.**

4. Comments on durability

Whilst RREUSE understands that this work is in progress, without document 1 and the related case studies we cannot see the full application of the methodology in order to make a good evaluation.

Regarding lifecycle assumptions of a product e.g. 11.1 years for a washing as quoted in the presentation, it is important that we start moving away simply from looking at the Carbon footprint of products when determining the lifespan of a product.

For example a life cycle assessment relating to fridges commissioned by "Schweizerische Agentur für Energieeffizienz" and "Bundesamt für Energie" 2008[1] comes to the conclusion that although the use-phase requires 80% of the primary energy consumption compared to 20% for the production - and distribution phase, by closer examination **the production phase gains more importance due to severe environmental impacts during extraction and therefore has to be taken more into consideration**. More indicators related to resource efficiency must thus be used to assess the replacement time of an appliance from an environmental perspective.

In order to be able to efficiently repair/refurbish an appliance it should be designed for ease of disassembly without destroying the integrity of the casing which significantly affects reuse potential. As an aside, the website I-Fixit, often gives scores for electronics regarding their reparability and includes factors affecting this such as:

** Are components glued, fused, or screwed?*
** How difficult is it to open the device?*
** Are proprietary screws used? Etc.*

Having a list of criteria like this could help at the design stage.

Lastly, the Commission itself 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."[2] We ask that the Commission can apply this thinking strongly within its work on reusability and durability.

We await the JRC's report on durability in report number 1 with anticipation and we do hope the information provided will help with your work. We thank you for your efforts.

[1] http://www.esu-services.ch/fileadmin/download/steiner-2005-Kuehlschrank_Graue_Energie_1.0.pdf
[2] Commission, E. (2012). "Exploiting the employment potential of green growth." from http://ec.europa.eu/social/BlobServlet?docId=7621&langId=en

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About RREUSE

The Reuse and Recycling EU Social Enterprises network (RREUSE) is a European umbrella organisation for national and regional networks of social enterprises with re-use, repair and recycling activities. Approximately 42,000 Full Time Equivalent (FTE) employees and over 200,000 volunteers work throughout our 22 member organisations across 12 EU Member States. Although structures and national contexts are diverse, RREUSE members share common elements such as the protection of the environment, the fight against poverty and, especially, the progress of disadvantaged people back into the labour market. RREUSE's main goal is to put sustainable development into practice by encouraging job creation and social inclusion in the field of waste prevention and sustainable waste management activities.