Challenges of reuse of (W)EEE under the aegis of circular economy in Hungary – Development towards sustainability

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Abstract

Reuse centers have been existing for years or even decades in several Western-European countries. Household objects such as electrical appliances which are old or have become waste are typically cleaned, repaired and sold in these centers by disadvantaged employees.

These organizations have come to exist in response to certain social-economic demands. They tend to function for a social purpose in terms of the employees and the targeted customer group alike, but at the same time also on economic and commercial bases. This means that they finance a portion/the majority of their costs from the sale of the refurbished appliances.

These classical, Western-European reuse centers typically came to exist to meet socio-economic rather than environmental needs, and environmental impacts have gained emphasis only recently, mainly under the aegis of circular economy.

We could think that if reuse centers were established in Western Europe to meet socio-economic needs, than the need for such an activity and such a channel for selling appliances must be even greater in Hungary where living standards and financial-economic opportunities are still lagging behind Western Europe…

The major challenge: determining which appliances could be suitable for being prepared for reuse

Just as in Western Europe, reuse is realized in Hungary through several channels (such as Vatera and similar portals, donation, second-hand stores the number of which depends on the type of product sold, etc.) without any legal regulation as well. However, as for preparation for reuse, i.e. the activity of the classical, Western-European reuse centers, there is only one company in Hungary which is licensed to pursue this activity and pursues it on an economic basis.

Examining the operation of this center, we can see that the number of appliances available for this activity, i.e. the preparation for reuse, is insufficient, for whatever reason, to ensure the economical operation of the reuse center. Actually, this is one of the reasons why this activity has not become well established in Hungary, despite the fact that, for social reasons, such reuse centers would probably be much more relevant and necessary in Hungary than in Western Europe. However, not even the single company experimenting with this activity (now under the aegis of environmental regulations) has really managed to be successful and perform preparation for reuse economically, despite its monopoly on the market.

The next logical question arising is: why isn't there a sufficient number of appliances available for this activity?

The answer to this question lies in consumer habits.

The surveys jointly prepared by CECED Hungary and GFK Hungary[i], as well as the statistics of the programs aimed at the replacement of household appliances with state support[ii] have revealed that household appliances typically tend to become waste well beyond the age of 10 years, but often beyond 15 or 20 years in Hungary. It is not worth preparing these machines for reuse with regard to either economic or environmental protection aspects. The very purpose of the household appliances replacement programs running in Hungary since 2014 is to promote an earlier replacement of old machines and to attain energy efficiency objectives.

Therefore, in light of consumer habits and opportunities, competing with energy efficiency as another environmental objective is the first and maybe most significant challenge present in Hungary and faced by preparation for reuse.

CECED Hungary acts as the professional partner of the ministry and the tender management company in the household appliances replacement programs supported by the state. The professional grounds of the programs were laid by the 2013 and 2015 CO_2 study of CECED Hungary, which presented the age of large household appliances in Hungarian households and the amount of CO_2 which could be saved by the replacement of machines older than 8 years. The energy calculators to calculate household savings were developed and made available to the tender management company by CECED Magyarország. There was a separate website created for communicating with and informing consumers (www.csereprogram.hu).

Additional challenges

Two further challenges are related to the questions of who should perform preparation for reuse and who could be the beneficiaries of the refurbished machines.

Our household and other electric appliances underwent immense changes at the end of the 20th and the beginning of the 21st century. Innovation and technological development have accelerated to such an extent that now nearly as many new solutions are crammed into only a few years during the life of today's generations as people used to face in decades. Most of the household appliances which used to function mechanically at the end of the previous century are now controlled by sophisticated electronics and software. The long and short of it is that appliances today differ from the older ones, so they require different types of repair works and mechanics with somewhat different skills and knowledge.

As for the human resources needed, there is actually no difference between repair and preparation for reuse, either in respect of the specifics of the appliances or the work processes. We can conclude from this fact that not even preparation for reuse can be performed today without the appropriate expertise and partnership with manufacturers. It is definitely important to support the employment of disadvantaged people in the fields of work not requiring expert knowledge (such as loading, cleaning or packaging), however, for quality assurance purposes, the higher level tasks of the technological supervision, repair and test operation of the appliances must be performed by skilled technicians. That is, properly qualified employees are indispensable for both repair works and preparation for reuse.

One of the fundamental priorities of CECED Hungary is the elaboration, launching and operation of the hitherto missing program to train technicians with a modern approach, which

may be a guarantee for successfully coping with the growing need for skilled workers in the future.

According to the leading experts of CECED Hungary, technicians must be at home not only in mechanics, but electronics as well to be able to service an appliance today. It is no longer sufficient to be a master of the screw driver and able to quick disassemble and assemble an appliance mechanically: one must also know how to use defect detection software, the WIFI and various computer applications. The "Columbos" of the profession are retiring, but now we need "James Bonds". Therefore mechanics or, more specifically, mechatronics and electronics are the two fields providing the basis for the new training program, skills of a good mechanic elaborated for future household appliances mechanics by CECED Magyarország.

The training plan encompasses not only the imparting of up-to-date expert knowledge, but also foreign language training, the developing of business, legal and environmental protection studies related to the profession, and the supporting of customer knowledge and customer communication skills. The program is planned to be launched in 2017/2018.

As far as the beneficiaries are concerned, 53% of Hungarian households at the moment would not be ready to buy refurbished appliances, even if refurbishing was carried out by a specialist service station and the appliance was sold with a guarantee (joint survey of CECED Hungary – GFK Hungary, 2015). The chances for selling refurbished appliances are further weakened by the fact that they cannot be considerably cheaper than new appliances. The question of whether refurbished machines are too expensive or new appliances are too cheap is influenced by several factors, the analysis of which is beyond the scope of this summary. For the time being, we can do nothing but accept it as a fact, based on the experience of the single reuse center in Hungary, that preparation for reuse cannot really be performed as a profitable business activity in Hungary today.

It is to be highlighted that household appliances replacement programs are also creating significant competition for the market of refurbished machines, as they allow customers to purchase new and energy efficient appliances at a discount up to 50% (with state support).

However, many families in need cannot enjoy the considerable benefits offered by the replacement programs, because they cannot even afford to pay their own contribution to the purchase price. Institutions (e.g. children's homes, hospitals, schools) also tend to use very old appliances without any chance to replace them.

The manufacturers of CECED Hungary were thinking of those facing such difficulties at the time of the announcement of all of the three household appliances replacement programs: They donated 20 energy efficient refrigerators in 2014 and 15 modern washing machines in 2015 to homes helping families and people in need and in 2016, they replaced the 14 oldest refrigerators of Szent Margit Hospital with new, energy efficient appliances, responding to the call for support announced by the hospital under the title "Adopt a room!"

This means that there would be a need for good quality, refurbished appliances as well and we could help many people in need by donating them.

The question is how we could get good quality, relatively young, used appliances for donation purposes. Actually, by means of the major "competitor" of the preparation for reuse, i.e. with the help of the household appliances replacement programs. Although the average age of the old machines replaced in the programs is above 15 years, from the washing machines handed over during the washing machine replacement program in 2015, more than 900 were between 0-5 years and more than 1500 between 6-8 years. These numbers are much lower in the 2016 refrigerator replacement program (97% of the replaced machines were older than 11 years): somewhat more than 160 of the machines replaced were between 0-5 and somewhat more than 410 of them were between 6-8 years[iii]. Many of these machines would have been perfectly suitable for being donated to families in need or homes or hospitals after proper preparation for reuse to replace methuselahs often older than 15-20 years.

Preparation for reuse could in this way be well incorporated in the replacement programs and reuse could ensure the most efficient and complex environmental protection solution in Hungary, serving the attaining of energy efficiency objectives and the development of the circular economy of electrical products.

Reuse in the circular economy

The report prepared by Eunomia Research & Consulting for the European Commission was published on July 22, 2016, which helps legislators with reviewing waste regulations. The topic of reuse is covered by a separate chapter (Chapter 6).

The study clearly reveals that, with regard to the fact that reuse had not been in the focus of regulations until very recently and that data collection is quite difficult to realize in this field, it is difficult to compare the data presenting practices in the EU and typically available in very low numbers. We would need more information to be able to find a good solution. At the same time, the collection of the necessary data must be harmonized to a certain extent in the interest of their comparability.

The report outlines the following two possibilities, even though it makes no suggestion to the legislator, right for the reasons named above:

- Three different ratios for recycling, reuse and preparation for reuse;
- Determining two ratios:
    - recycling and preparation for reuse together and reuse or
    - recycling, reuse and preparation for reuse together;
- One ratio encompassing each of the three elements.

In light of the foregoing, we can actually ask the question whether the legislator would support environmental protection, if there was a separate ratio for reuse and/or preparation for reuse established for Hungary? The answer is no. This would make a sense only and exclusively, if households replaced their machines so much earlier by which they would find themselves at the other extreme: they would replace their appliances too early as opposed to the current situation of doing so too late. Because preparation for reuse can only have a sense where and when (i) a much higher number of the households replace their appliances early, as a result of which they appliances become waste much earlier than their actual lifecycle would make it

necessary and/or (ii) this channel offers an alternative, by means of direct offering by the households, for channels like donation or selling on the internet. If this wasn't the case, reuse centers could not be operated economically in Western Europe, either.

Analyzing the habits of Hungarian consumers, we can see that preparation for reuse in Western Europe in many cases corresponds to the maintenance-repair of the appliance during the first (and/or second) use in Hungarian households. That is, we could also say that both reuse and preparation for reuse are realized in Hungarian households during the first (and/or second) use in the majority of the cases.

Accordingly, if we consider the three options outlined by the Eunomia report, we could conclude that the most ideal solution would be to include these three channels (reuse, preparation for reuse, recycling) in one objective, for which a single ratio should be determined. This would ensure the creation of the most efficient mix of practices from an environmental, economic and social aspect alike. In this way, although there could be differences in the proportions between the individual Member States, but the uniform ratio would enable sufficient flexibility. Moreover, as long as the sufficient data concerning the numbers of appliances which may be realistically expected to be reused or prepared for reuse are not available to the legislator, it remains impossible to determine the ratio for these activities which could facilitate the attaining of the objectives. In addition, determining separate ratios would not necessarily be beneficial in light of the differences between the consumer habits and waste management practices in the individual regions and Members States of Europe, as we could see it in the case of Hungary as well.

Actually, what we need to realize is that reuse and preparation for reuse should not at all be regarded as a goal, but rather as possible means. Means to attain the real goal, namely the reduction of our environmental footprint related to our electrical appliances. And as such, both of them should be seen only as one means among many others. It is important to apply them wherever they can effectively contribute to reaching our goal, but if this is not the case or where there is no need for them, because the objective is realized by other means or practices not requiring legal regulation, we shouldn't insist on or push them, as this might have a contrary effect.

It is a uniform ratio which could best enable the WEEE Directive renewed under the aegis of circular economy to offer Members States the most flexible solution. The Members States should then elaborate the supporting of solutions best promoting the achievement of the objective, i.e. the reduction of our environmental footprint related to electronical appliances with consideration to the local specifics.

The major participants of the circular economy…

But we need one more participant to realize the goals of circular economy, and this is the consumer. It is the consumer who makes the choice between the new and the refurbished or between the energy efficient and less energy efficient machine; decides whether to replace an appliance or have it repaired; whether or not he/she reads the user's instructions and uses the

appliance accordingly; whether or not he/she has his/her machines maintained on a regular basis. It is the consumer who can contribute to attaining the goals of circular economy by means of his/her responsible behavior as consumer or to the contrary: hinder reaching these goals by not acting consciously. Therefore, however strict the requirements determined by the legislator for either manufacturers or the representatives of the waste profession may be, a major part of the energy invested will be lost, if the consumer fails to learn and progress in line with the other participants. Changing consumer attitudes and informing consumers must be therefore a priority objective of circular economy.

CECED Hungary launched its attitude changing campaign titled Cycle Michael (Forgó Morgó in Hungarian) in 2006. Children and families have had the opportunity to learn about environmental problems and environmentally conscious behavior at numerous events, school and family programs or tenders in the ten years since then. The central figure of the campaign called Cycle Michael (Forgó Morgó), the electricity meter grumbling about our wasting energy has become a major symbol of energy-saving and environmental consciousness for children and young people. In the story book published with the title "Cycle Michael on the sea" in 2016 to celebrate the 10th anniversary of the program, Cycle Michael is no longer concerned about the electricity bill only, but about issues affecting the future of the Earth and mankind as a whole as well: how could we use less energy, what will happen to the lots of waste, how will climate change affect our future? The book is illustrated with 55 of the best works submitted at the children's drawing contest of 2015.

There was also a Cycle Michael activity book prepared from the stories in 2016 including creative activities facilitating the development of children and helping them become more environmentally conscious.

In the academic year 2016/17, after the announcement of the objectives of circular economy, the Cycle Michael campaign gained new impetus and the brother of Cycle Michael called Recycle Michael appeared on the scene, who strives to realize the circular economy. In the drawing contest of 2016, children were asked to draw the world of Recycle Michael and the circular economy based on a new story titled "The New Friend", which continued to plot of the previous story book "Cycle Michael on the sea". A 130 pieces puzzle of Recycle Michael was created from the drawing which was awarded the first prize. The new story book to be published in 2017 will be illustrated with the best works submitted.

Conclusion

The action plan published by the European Commission on December 2, 2015 on the circular economy offers us a great opportunity to step forward together on a new road. Everyone has their own role, task, right and obligation in realizing the circular economy, let it be manufacturer, waste processor, legislator, market player or consumer, whether child or adult. Nobody can be left out, everyone must accept the responsibility for their own duties. Background regulations must lay equal emphasize and reinforce these responsibilities for each party and there is a need for dialogues enabling the mutual understanding of motives and opportunities, because this is the only way to develop a solution model best promoting the attaining of the objectives.

We have talked about sustainable development so far, however, it is high time admitting that the kind of development we believed to be sustainable is not sustainable at all. The most we can do and have to do is to take steps in the direction of sustainable development. This is not a small challenge and, though it may sound bad news, we can only do it together. However, being an optimistic person, I would rather put it in this way: the good news is that together we can do it!

For further information (connecting charts, statistics and tables) please visit www.cecedhu.hu/ierc2017

Details about the awareness raising activity of CECED Hungary can also be viewed, furthermore the stories of Cycle Michael and Recycle Michael can be read in English at www.cecedhu.hu/ierc2017.

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[i] 2009, 2013, 2015

[ii] 2015, 2016 (Source: Ministry for National Development and NFSI)

[iii] Source: Ministry for National Development and NFSI