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How Do the Revisions of the Nordic and EU Ecolabel Criteria Reflect Circular Economy?

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Keywords: Circular Economy; Product-service-time Extension; Type 1 Eco-label Criteria; Durability; Reparability.

Abstract: In a Circular Economy, products maintain their potential to create value for as long as possible (EC 2019:3). The focus of this paper is on Type 1 eco-label as an existing policy instrument, in creating a pull towards product qualities that enhance Circular Economy. Durability, reparability, upgradability and multi-functionality contribute to extending product service times. Material circulation factors are also essential. The aim of this research was to assess the extent to which the ecolabel criteria that have been published during the period 2017-2019 reflect Circular Economy, with a focus on product service time extension and whether a strengthening of the relevant requirements can be observed. This research builds on previous research carried out in 2016: “Do ecolabels promote longer life times: a comparison of the Nordic Swan and EU ecolabel” (Suikkanen, J. and Nissinen A. (2017), PLATE Conference proceedings). The data for this analysis is new criteria and revisions of criteria of the Nordic Ecolabel and the EU Ecolabel dating from 2017, 2018 and 2019. We analysed the criteria and compared them to the results from the previous paper. We noted that the new criteria documents mention Circular Economy. However, in practice the requirements mainly reflect Circular Economy in packaging requirements. This is concluded to be in line with the EU Plastics strategy and identified priority sectors. However, there is a need for more coherently and broadly include requirements that enhance in particular life time extending factors, such as reparability and upgradability to further address Circular Economy through ecolabelling.

Introduction

In recent years the Circular Economy (C.E) concept has gained momentum among policymakers, academia and industry (Geissdoerfer *et al.*: 2017) to meet the goals of sustainable development (Saidani, M. *et al.*: 2019). It has been viewed as a way to operationalize the concept of sustainable development for business (Ghisellini *et al.*, 2016 and Murray *et al.*, 2017 in Kirchherr *et al.* 2017: 127).

In a Circular Economy, products maintain their potential to create value for as long as possible (EC 2019:3-4). Literature points to longevity as an important factor in a circular economy (Franklin-Johnson *et al.* 2016: 132 and Beek *et al.* 2016:8). To extend the time during which a product is in use, the products can be designed to simply have a longer physical or use life time (Asif *et al.* 2016:1266).

The consumer role in a Circular Economy has been pointed out by some authors (Kirschherr

et al., 2017: 228, Ghisellini *et al.* 2016: 19, Lieder and Rashid 2016:45). Ecolabels are a means of guiding consumer choices towards products that have better environmental performance compared to other products in the product group. Kirschherr *et al.* (2017: 228) refer to Repo and Anttonen (2017) and Gallaud and Laperche 2016 in saying that consumer demand is needed for viable circular economy business models and that it is the consumer that is the “most central enabler” of them.

A recent European Commission document highlights the role of existing product policy instruments in pursuing the objectives of Circular Economy. Even when the instruments are pre-dating the Circular Economy Action Plan, they are seen to act towards the C.E. goals (EC 2019: 3-4).

The EU Ecolabel (Flower) and the Nordic Swan Ecolabel are ISO14024 Type 1 ecolabels. They are thus multi-criteria and

based on scientific evidence and a life-cycle based approach, and are third party certified and revised regularly (EC 2019:10). Type I ecolabels, such as the Nordic Swan, or the EU Flower set a standard for environmentally preferable products, which are identified by considering the environmental impacts throughout the product life cycle (ISO14024:2018).

The EU Ecolabel targets the best 10-20% of products within a specific product group on the market and criteria have been established for 25 good and service groups (EC 2019:10,12). The Nordic Ecolabel targets the best 30% of the products within a particular product group and criteria have been developed for over 60 product and service groups.

For this paper we use the framework developed in Suikkanen & Nissinen (2017) “*Do ecolabels promote longer life times: a comparison of the Nordic Swan and EU ecolabel*” (Suikkanen, J. and Nissinen A. (2017), PLATE Conference proceedings). This framework considers that actions to maintain value could be divided into product service time extension (PSTE) and material circulation. Product service time is extendable by designing products are durable, repairable, and upgradable. We consider that multi-functionality of products intensify their use time and hence service time is extended. Material circulation considers the recyclability and secondary raw material and component use in the product as well as recycling in production and end-of-life.

In this article we focus on the factors that have the potential to extend product service: durability, reparability, upgradability, and multi-functionality. We also undertake a screening regarding material circulation. The analysis includes consumable products (e.g. detergents), which EC (2019) considers important to produce with the minimum impact on resources and consumed so as to leave as little waste as possible (EC, 2019: 3).

The aim of this research was to assess the extent to which the criteria that have been published in the reference period 2017-2019 reflect Circular Economy and whether there is an in the stringency compared to the older criteria. The comparison is done to our previous research. The former paper consisted

of a review of the Nordic and EU ecolabel product group specific criteria documents for products that were valid at the time.

In our previous paper we observed that the Nordic and EU ecolabel criteria documents published before 2017 include durability requirements for a broad range of product groups but there was only one Nordic ecolabel product group (computers) and three EU ecolabel product groups (computers, televisions and mattresses) with requirements on upgradability and only one Nordic ecolabel product group with a requirement on multi-functionality (rechargeable batteries) (Nissinen and Suikkanen: 2017)

Results

EU Ecolabel

Of the EU Ecolabel criteria, those product groups belonging to the category “cleaning up” have been updated in 2017. These product groups include the following criteria: Hard Surface Cleaning Products, Detergents for Dishwashers, Industrial and Institutional Automatic Dishwasher Detergents, Hand Dishwashing Detergents, Laundry Detergents, Industrial and Institutional Detergents. For these product groups extending the service time of the product itself through durability requirements, reparability, upgradability and multi-functionality is not relevant, with the exception of durability in the sense of effectiveness.

However, in comparison with the former criteria versions, the “cleaning up” product groups include a requirement for design for recycling for packaging, which aims to improve separation and reprocessing of the material. The product groups continue to have an exemption within the Weight to Utility (WUR) calculation for those materials that are made of over 80% of recycled materials. According to the Technical Background report, it had been suggested to remove the exemption on the grounds of Circular Economy so as to ensure that there is no overuse of any kind of packaging (Boyano, and Wolf, 2016:93 & 277).

The new EC ecolabel product group “*Wood,-cork and bamboo- based floor coverings*” which dates from January 2017 has been designed so as to promote Circular Economy and to extend product life time (Boyano and

Wolf: 13, 52). Extended guarantee, design for repair and disassembly and consumer information on maintenance repairing have been introduced (Boyano and Wolf: 15, Criteria document C9). The lubricants criteria document (2018) states that the criteria should facilitate the transition to a more Circular Economy, and includes a 25% requirement of post-consumer plastic packaging (Lubricants, Criterion 5).

Nordic Ecolabel

For this analysis all the 44 product group specific criteria for the Nord Ecolabel were analysed. Of these, new generation criteria have been published in the reference period only for the product groups “Baby products with textile 1.0” (June 2017), “Cleaning products 6.0” (November 2018), “Primary batteries 5.0” (November 2018), “Rechargeable batteries and portable chargers 5.0” (June 2018) and “Disposables for food 4.0” (June 2017). For most of the other product groups the updated document concerned most often about extending the validity and minor adjustments that are considered non-relevant for the purpose of this study.

It is less easy to detect and to generalize a common unifying approach to Circular Economy within the criteria documents for these product groups, in comparison to the ones for the EU Ecolabel revised documents. The background document for the “Disposables for Food” product group states as one of the main points of the revision “*seeing what waste requirements can be set with regard to the circular economy and better use of resources*” (Nordic Ecolabel, 2017:4), and the criteria correspondingly state that disposables for food contain a high proportion of bio-based materials or recycled plastic and are designed to promote recycling. The scope of the “Cleaning Products” criteria document states that “*packaging requirements contribute to circular economy by addressing packaging design and material choices*”. The scope of the “Rechargeable batteries and portable chargers” criteria document refers to the possibility of dismantling. For the new product group “Baby products with textile”, there is an explanation under New Criteria that the focus has been on chemical requirements, but a generation 2 of the criteria, expected 2023, will assess how product design can support the

circular economy (Nordic Ecolabelling, 2017: 100).

We did not note requirements addressing reparability or upgradability for any of these new generation criteria. We consider that the “Rechargeable batteries and portable chargers”- product group specific criteria continues be the only product group to address multi-functionality through the requirement O4 “*Battery charger must suit a minimum of two battery sizes*”.

Durability requirements continue to be present in most Nordic Swan Ecolabel criteria, including the revisions. The new criteria for “Baby products with textile” includes a number of quality and function requirements for textiles, similar to the “Textiles, hides, skins and leather” criteria. The quality requirements include for example colour fastness to light, to washing and to rubbing (O69-O72), pilling requirements (O73), dimension changes during washing and drying (O74) and wearing strengths (O75). Both of the battery groups have requirements on the operation time of the batteries. The new generation (generation 5) of “Primary batteries” criteria has changed requirements regarding minimum average duration and a new requirement for test of battery shelf life (Background document O9 and O10). The new generation criteria (generation 5) of the “Rechargeable batteries and portable chargers” criteria document includes a revised requirement O9 on adjusted endurance cycles. Both of the battery product groups refer to quality in the scope description.

Some product groups have requirements on refills. For example the adjusted candles product group includes a new requirement on candle containers: “*Containers that are designed to be used multiple times for the same purpose should have two refills*” (O9).

While not the focus of this paper, we present some observations regarding material circulation. In the new generation criteria documents, strengthened requirements regarding recyclability were noted. Separability requirements for the product are included in the product groups “Baby products with textile” (O62), “Rechargeable batteries and portable chargers” (O15) and “Disposables for food” (O27) as well as for the packaging of the “Cleaning products” and “Primary batteries”

product groups (O4). The “Cleaning products” criteria document (p.4) states that *“requirements have been set on packaging to increase possibility to recycle plastic so as to contribute to circular economy”*. The WUR formula of this requirement exempts from the calculation products that are supplied in packaging that are taken back, washed and refilled.

In most product-group-specific criteria there continue to be numerous requirements that may contribute to recyclability through non-toxic cycles that are addressed through chemical requirements. A different study should assess the extent to which the chemical requirements enhance recyclability. In particular many product groups have requirements that enhance the separability of materials and disassembly of products to facilitate recycling. In the “Office and Hobby Supplies” adjusted criteria there is a new requirement O5 on design for single packaging, which puts a 80% requirement on pre- or post-consumer recycled material and states *“when using single packaging the packaging must be designed in such a way that dismantling is possible for all individual parts for waste sorting without using any tools”*.

The section of the product-group-specific criteria called “New Criteria” or “Future Criteria” identifies topics that will be evaluated in the next criteria revision. The review of the text in these sections showed that in the future many evaluations of the criteria will assess the recycled content and the recyclability of materials.

Discussion

As many of the EU Ecolabel product-group-specific criteria that had been updated are fast moving consumer goods (paper products, cleaning liquids etc.) requirements relevant to product service time extension are not relevant. Therefore, for many product groups, contribution to the Circular Economy is reflected mainly in the packaging requirements where recyclability, recycled content and information on correct end-of-life recycling are included. Packaging is one of the priority sectors that have been identified by the EC and thus its systematic addressing can be considered relevant (EC 2019). On the other hand, recently some of the product groups that

could have been interesting from a Circular Economy perspective have been discontinued due to low uptake. These include the product group “imaging equipment” and “computers” as well as some building related product groups (sanitary tapware, flushing toilets and urinals). Construction has been pointed as one of the priority sectors, but recently water based heaters and sanitary tapware have been discontinued. In addition to construction, other priority product categories that are currently covered by the eco-labelling schemes are EEE and batteries, furniture, textiles, buildings and construction products and chemical products (EC 2019:1)

While almost all of the products-group-specific criteria for Nordic Swan ecolabelled product groups have been adjusted in the reference period, there were only five product groups that had gone through full revision, resulting in a new generation of criteria. In these product groups the aim of the ecolabel to contribute to circular economy is reflected in the wording and in requirements that reflect material choices and their end-of-life recyclability, including in packaging choices. The Cleaning Products criteria exempts refill packaging from the WUR calculation, perhaps implicitly encouraging refill systems. Based on this research, the role of design for packaging can be expected to strengthen in the future. It is also in line with the EC strategies and priority sectors (EC, 2019).

Of the revised criteria documents, there were only two product groups that are durable products (Rechargeable batteries and portable chargers and Baby products with textile). For these product groups reparability, upgradability and multi-functionality would be relevant to assess further in the future. Considering the entire set of product-group-specific criteria documents, there are requirements regarding warranties, guarantees and spare parts, but these requirements appeared not to be coherently applied across all product groups for which they could be seen as relevant.

If comparing the two Type 1 ecolabelling schemes, a movement towards integrating circular economy considerations is noted. From the perspective of longevity, proposed by Franklin-Johnson *et al.* and Figge *et al.* (2018:300), it is important to consider the initial use, product refurbishment and recycling.

While ensuring appropriate end-of-life considerations is important, more ambitious and coherent PSTE requirements in Type 1 ecolabels across product groups could create a pull for products that have a refurbished life.

Finally, as there is an important role for the ecolabels in creating consumer demand in general for sustainable products, the role of ecolabels in activating consumers for the circular economy should be more broadly exploited through setting the criteria accordingly.

Conclusions

The current European priorities point to the strengthening of the current policy instruments to more clearly support the Circular Economy. Ecolabels have a role in informing consumers about the environmental performance of products, but also encourage producers to meet a standard of environmental performance. Ecolabel requirements are a way to influence the design of products to be of excellent durability and to enhance product service time extension through reparability and upgradability.

Given that the validity period of the EU ecolabel criteria is long, in the considered period there have only been a few product groups which have undergone revisions that would allow contribution to Circular Economy. At the moment it is mainly reflected in the packaging requirements. The new EC ecolabel product group for “Wood-, cork-, and bamboo-based floorings” is an example that indicates a benchmark of a future ecolabel criteria that integrates requirements that help extend the product life time.

The Nordic Swan Ecolabel has been integrating requirements that support the Circular Economy, especially as it concerns material choices and separability. There is a need to continue to assess the potential to place requirements that extend product service times, in particular through repairable and upgradable product design, information to consumers, and availability of spare parts as well as long warranties.

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