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ADDRESSING RESOURCE EFFICIENCY THROUGH THE ECODESIGN DIRECTIVE: A REVIEW OF OPPORTUNITIES AND BARRIERS

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ABSTRACT

The European Union has initiated a number of initiatives to improve resource efficiency in Europe. The Ecodesign Directive is one of the policy instruments that could aid the transition towards a more resource efficient economy. This paper examines the potential benefits and disadvantages in applying the Directive for this purpose, and reflects on the potential to apply certain types of standards. The research builds on literature studies and interviews. A main conclusion is that some types of legal requirements are more feasible than others, and that the type of product and user patterns are of high importance when legal requirements are assessed.

INTRODUCTION

Resource use considerations have come to the forefront of the sustainability agenda in the last couple of years. Both the European Union (EU) and various nations are currently developing strategies to identify critical resources, promote resource efficiency and address resource security. Apart from developing new policies, better enforcement of existing rules related to recycling is considered a key element in a strategy for resource efficiency.

While an effective response to the resource related concerns would involve a number of strategies at the international, European and national levels, most of the proposed policies – such as resource taxes – are difficult to implement due to political and legal reasons. The policy options are therefore limited. The Ecodesign Directive (Directive 2009/125/EC establishing a framework for the setting of ecodesign requirements for energy-related products) offers one of the few feasible ways to move forward. The Directive is already in place, and significant institutional learning is taking place on how to regulate the ecodesign characteristics of products, due to developments both under the Ecodesign Directive and other EU regulations; these include the WEEE Directive (Directive 2012/19/EU), the RoHS Directive (Directive 2002/95/EC), and the REACH Regulation (Regulation (EC) No 1907/2006).

At the time of its implementation, the Ecodesign Directive was considered to allow for the regulation of a wide range of life cycle aspects, but to-date most implementing measures set under the Directive so far primarily regulate energy efficiency during the use phase. This state of affairs has been criticized (van Rossem et al., 2009). Several current trends provide reasonable and interesting arguments for addressing resource related issues in the future. For instance, as the energy efficiency of products improves, the environmental impacts associated

with other environmental life cycle impacts will become relatively more important. We also see shorter and shorter life spans of many product groups such as mobile phones and laptops (Öko-Institut/Fraunhofer, 2012). This means that the importance of energy in the use phase will lose some importance as compared to other aspects.

Recent reports and case studies have outlined different types of legal standards related to resource efficiency that may be set under the Ecodesign Directive in the future (DEFRA; Ardente and Mathieux, 2012). These include: durability requirements to increase life span; removing certain substances to aid future recycling practices; undertaking cost effective design measures to improve future recycling (e.g. by avoiding certain coatings or material mixes); providing information about certain critical materials and where they are placed in the product; other types of bill of material (BOM) requirements providing information about materials and substances; longer guarantee periods provided to consumers; maximum disassembly times; requirements to provide evidence that ecodesign was considered during the design process, and requirements on percentages of recycled content in the product.

OBJECTIVE AND METHODS

This paper provides the main findings from a research project. The main objectives of the research has been to a) examine the potential benefits and disadvantages of addressing resource use through the Ecodesign Directive, and b) to identify barriers that must be overcome in order to do so. The main methods used in the project are: vast literature review of relevant reports and other materials; semi-structured interviews with policymakers and industry representatives, and a case study on a product group (permanent magnet motors).

RESULTS

Addressing resource use issues through the Directive has a number of potential benefits:

- The Directive offers a way forward to address resources, whereas other policy options – such as an increased use of taxes – are less likely to be politically acceptable.
- Standards set through the Ecodesign Directive will – unlike taxes and charges – not necessarily put EU manufacturers at a competitive disadvantage because they apply equally to all products put on the EU market.
- There are even some expectations among stakeholders that the Ecodesign Directive could be "the pioneer instrument" for driving supply chain measures, paving the way for other instruments, e.g. by requiring material declarations or recycled content.
- More generally, the Ecodesign Directive can strengthen life cycle thinking and ecodesign practices, and potentially promote individual producer responsibility (IPR).
- Many actors view stringent energy efficiency standards as source of competitive advantage for EU industries; as they can trigger resource savings, and innovation.

Potential disadvantages associated with addressing resources under the Directive are:

- There are significant delays in the setting of standards for several product groups. More focus on non-energy related requirements could stall the process even further.
- By setting standards related to resources and materials, there is a risk of standards that limits innovation and/or increase costs. However, recent research seems to indicate that product and service regulation seems to be positively correlated with domestic industry

competitiveness (Blind 2012). Further, it is likely that barriers to innovation mainly occur if standards are poorly designed.

- The potential clash between different environmental aspects is a concern. It is likely that there are some inherent conflicts between different environmental objectives. Sometimes conflicts are possible to be solved technically, which reiterates the importance of involving experts in the policy process.

The main barriers towards a greater focus on resource efficiency and recycling under the Ecodesign Directive are likely to be:

- There is a need for better data, and measurement methods in relation to recycling and resources. Many actors are reluctant to set legal standards before these components are in place.
- The interpretation of legal rules can be an issue, most notably the interpretation of Article 15 in the Directive. It states that aspects should only be regulated if they represent a "*significant environmental impact within the Community*" and "*significant potential for improvement without entailing excessive costs*". It is not entirely clear how this wording should be interpreted, especially in relation to resource use issues. *One genuine problem concerns standards set now that could boost recycling in the future*. It is likely that some materials can be cost-efficiently recycled in the future as there are ongoing pilot projects to elaborate and test new recycling methods for commercialization, and prices of some resources are expected to rise. The costs of recycling practices however, will be influenced by the current design, when products are put on the market. However, *even if producers can make design alterations at a very low cost today to allow more cost-efficient recycling in the future, it is not clear if this is allowed under Article 15*.
- Chemicals in products are seen as barriers to recycling standards and requirements on recycled content; many actors do not want to spread toxics and therefore hesitate to promote more recycling until better control over chemicals is exercised.

Regarding the types of legal standards which are possible to be set under the Directive, input was provided by reports and interviews with representatives from industries. The main conclusions are:

- The types of requirements that can be put on products vary depending on product group, as characteristics such as technical solutions, use patterns, and type of business (e.g. B2B or C2C) are of importance.
- Among the potential requirements that was considered possible to apply by several of the interviewees were: durability requirements; removing certain substances from some product groups (to improve recycling); undertake cost effective design measures to improve future recycling (this could include the banning of certain types of design – such as plastic coating – if there is evidence that it is not necessary, and other designs do not lead to high additional costs); provide information about certain critical materials (e.g. individual rare earth element) and where they are placed in the product.
- Requirements in REACH/RoHS/US laws on conflict minerals have meant that there are formats that provide the foundation for more BOM type of requirements. However, keeping track of recycled material, or providing information about material composition is much more complex than providing information about chemicals.
- Among requirements not considered highly feasible and/or desirable are: longer guarantees provided to consumers; maximum disassembly times; requirements to provide

evidence that ecodesign was considered during the design process (since it is hard to monitor and show compliance for such requirements); requirements on percentages of recycled content in the product.

DISCUSSION

The research has provided a better understanding of several issues. For instance, user behavior and estimated life spans of products strongly influence whether durability requirements are feasible. If consumers switch products before there life span expires for reasons of seeking novelty and better functions, durability requirements will lead no over-engineering and thus to wasted resources. Further, methodological problems were discovered. One example concerns recycled content: if virgin material and recycled material are mixed among suppliers, it will be difficult to establish levels of recycled content in a product.

CONCLUSIONS

The overall conclusion is that there are convincing reasons to start working more coherently with resource efficiency requirements under the Ecodesign Directive, but that there is a need to develop further methodologies and extend existing ones to better handle such issues, and to better monitor the interaction between the Ecodesign Directive and other laws. Addressing resources is a "chicken-and-egg" situation: we can hardly expect perfect indicator systems and means of compliance until we have started to set requirements in the policy process. It is therefore worthwile to focus efforts on putting clear rules in place, as for instance, few companies will otherwise devote resources to set up costly supply chain initiatives.

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