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EXECUTIVE SUMMARY OF THE IMPACT ASSESSMENT

Accompanying the document

**Proposal for a Regulation of the European Parliament and of the Council setting a
framework for energy efficiency labelling and repealing Directive 2010/30/EU**

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EXECUTIVE SUMMARY OF IMPACT ASSESSMENT

1. Policy context

1. The Energy Labelling Directive requires the Commission to review the effectiveness of the Directive and its delegated acts by 2014.
2. The Ecodesign Directive required the Commission to review the effectiveness of the Directive and its implementing measures by 2012. That review¹ concluded that no immediate revision was necessary, but that the Directive could be reviewed again along with the review of the Energy Labelling Directive, since the effects of ecodesign implementing regulations and energy labelling delegated regulations applicable to the same energy-related products are often linked and complementary.

2. Evaluation and problem definition

3. The Energy Labelling and Ecodesign Directives were created to address the basic problem that products can have a negative impact on the environment depending on how they are made, used and disposed.
4. The Ecodesign Directive pushes the market by banning the least efficient products. The Energy Labelling Directive encourages consumers to buy more energy efficient products by informing them about the energy use of products through an energy label. The requirements for specific energy-related products (such as washing machines or electric motors) are set through delegated acts (for energy labelling) and implementing acts (for ecodesign).
5. The scope of the evaluation does not go into the question of whether energy savings are more or less cost-effectively achieved in other sectors. In order to achieve decarbonisation and energy targets, measures in all sectors are necessary for delivering energy savings and the costs to achieve the energy savings through ecodesign and energy labelling are equal to or less than zero.
6. The focus is on the framework Directives and not on the individual implementing measures, which are subject to their own impact assessment process. Any new products that may in future be addressed under ecodesign and/or energy labelling will be identified in the 2015-2017 Working Plan, which the Commission plans to adopt as part of the Circular Economy package later in 2015.
7. There are potentially other policy measures that could increase the efficiency of energy-related products, such as fiscal measures, incentive schemes, etc. However, this impact assessment addresses the specific problems that have arisen in the implementation of the two Directives. In wider context, energy labelling and ecodesign policies have shown to work well across the world. 59 non-EU countries have adopted energy labels, half of them with designs similar to the EU label. At least 45 countries outside the EU have adopted minimum energy efficiency requirements for products.
8. To date 24 ecodesign implementing regulations have been put in place. Products covered range from household appliances, such as fridges, lamps and boilers, to professional and

¹ COM(2012) 765 final

industrial equipment, such as electric motors and fans. In addition, 12 delegated regulations on energy labelling now ensure that a range of mostly consumer products must be sold with an EU energy label attached.

9. In terms of energy savings, the ecodesign and energy labelling measures in place to date are estimated to save 175 Mtoe primary energy per year by 2020. For environmental aspects other than energy consumption there has been less measureable impact so far. The energy savings are estimated to represent 100 billion euro per year in 2020, equivalent to 465 euro per household.
10. Apart from environmental and monetary benefits, the setting of requirements at EU level also benefits industry. An EU harmonised regulatory framework brings down costs for manufacturers and drives innovation in energy efficiency.
11. However, evaluation carried out for this impact assessment² has shown that, in particular, the introduction of the A+ to A+++ classes has reduced the effectiveness of energy labels. The A+++, A++, A+ classes added during the 2010 recast of the Directive have reduced the effectiveness of the label in persuading consumers to purchase more efficient products. The new label scale is understandable for consumers, but it has reduced their willingness to pay more for more efficient products. They are less motivated by a difference between A+ and A+++ than by a difference between C and A. To address further technological advancement rescaling of the label classes is necessary when a large share of the market reaches class A+++. Rescaling has not yet been undertaken, as no agreed method exists. Another problem for energy labels is that there is an increased sale of larger models, which are efficient and thus achieve a high energy class, but nevertheless have a much higher absolute consumption than smaller appliances of the same type.
12. There are additional problems common to ecodesign and energy labelling. Firstly, non-compliance with ecodesign and labelling requirements, in part related to weak enforcement by national market surveillance authorities. Secondly, a number of product regulations have a low level of ambition and, thirdly, a long rulemaking process, leading to outdated technical and preparatory work at the time of policy decisions.
13. A final problem is related predominantly to ecodesign: environmental impacts other than use-phase energy consumption could receive more attention.

3. Subsidiarity

14. Measures on efficiency of products taken by Member States would create barriers to the free movement of goods in the EU and unnecessary burden for industry to comply with different sets of rules in each Member State. Acting at the EU level is the only way to ensure that requirements and labels for products placed on the market are the same in all Member States.

² Ecofys, Evaluation of the Energy Labelling Directive and specific aspects of the Ecodesign Directive, June 2014; London Economics, study on the impact of the energy label – and of potential changes to it – on consumer understanding and on purchase decisions, October 2014.

4. Objectives

15. The specific objective is to reduce energy consumption and other significant environmental impacts of products by ensuring consumers are informed in a relevant and easy-to-understand way and allowing industry to transform environmental challenges into economic opportunities.

5. Description of policy options and methodology

16. The following policy options to improve the energy labelling and ecodesign framework are considered, listed in order of increasing degree of ambition to address the problems:
 1. New non-legislative action
 - 1+. New non-legislative action plus legislative improvements for energy labelling
 2. Significant legislative reform of both ecodesign and energy labelling
 3. Comprehensive reform of ecodesign and energy labelling extending the scope to non-energy-related products and centralising market surveillance at EU level.
17. Each of the policy options consists of a number of measures to address the different problems identified, with a different degree of ambition.
18. The policy options allowing legislative changes to energy labelling are the only ones that can address the problem of the energy label layout. Three sub-options, in addition to the current A+++ to D label, for the label scale layout are considered:
 - a. A-G label, of which the classes need rescaling every 5-10 years
 - b. Numeric label (e.g. 40-100, with room to add classes 0-30 on top)
 - c. Reverse numeric label (e.g. 7-1, with room to add classes 8, 9 etc. on top)
19. The problem related to larger models is addressed by the alternative measures of more emphasis on the absolute energy consumption on the label (option 1) and requiring for larger appliances a higher efficiency to reach a certain label class (options 1+, 2 and 3). In addition, providing monetary information in addition to the energy label is a measure that would further address this problem for product groups with high energy consumption (options 1+, 2 and 3).
20. The three problems common to ecodesign and energy labelling are addressed by a mandatory product registration database (in option 1+ only for labelling, in options 2 and 3 for both labelling and ecodesign), providing the information needed to improve enforcement and the rule making process, and to some extent addressing the problem of low levels of ambition. The alternative measure of a study collecting data (option 1; and in option 1+ for products covered by ecodesign but not by labelling) addresses the same problems although to lesser extent and not for enforcement.
21. Additional measures to address the problem of low levels of ambition are i) using learning curves to determine the least life cycle cost at which requirements are set (options 1, 1+ and 2) and ii) changing the least life cycle cost requirement to a significantly more ambitious 'break-even point' requirement (option 3).
22. Additional measures to address non-compliance and weak enforcement are supporting joint surveillance actions through EU-funded projects (options 1, 1+ and 2), legal

alignment with the Commission's proposal for a new market surveillance regulation³ (options 1+ and 2), streamlining legal provisions of the Energy Labelling Directive (options 1+, 2 and 3), requiring third party certification for all product groups (options 2 and 3) and centralising market surveillance at EU level (option 3).

23. The problem concerning other environmental impacts is addressed by extending the scope to non-energy-related products for which such impacts dominate over energy use (option 3) or, alternatively, by reviewing and updating the ecodesign analysis methodology ('MEErP') to better address material efficiency impacts of energy-related products (options 1, 1+ and 2).
24. The analysis of impacts was supported by the use of a model that incorporates the data from all preparatory studies and impact assessments done for products covered by ecodesign and energy labelling. The model addresses only energy-related products and therefore the extension of the scope to other products in option 3 was assessed qualitatively. A specific study tested consumers' understanding, and the effect on their purchase decisions, of the different label layouts. All options are compared to a baseline in which implementation of ecodesign and energy labelling would continue, but without being able to address the problems identified.

6. Analysis of impacts

25. All options further reduce the energy use of products to a significant extent, as shown in the overview tables at the end of this document. The higher the degree of ambition of the measures in the options to address the problems, the higher the additional energy savings.
26. In terms of consumer understanding, alphabetic label scales (i.e. A+++ to D and A to G) are clearly better understood by consumers than numeric labels. In terms of their effect on consumer purchase decisions, the A-G label scored best in persuading consumers to buy more efficient products, with the reverse numeric label second best, while the numeric label scored lower than the current A+++ to D label.
27. All options reduce other environmental impacts such as greenhouse gas emissions, nitrogen oxide emissions and water use. However, apart from the reduction of greenhouse gas emissions, which is closely linked to the energy savings, the reduction of other environmental impacts is modest compared to the energy savings. Only the option that extends the scope of the Directives from energy-related products to other products has the potential to address other environmental impacts more rigorously. However, a range of environmental impacts of products other than energy-related products are already addressed through other legislation.
28. The main economic impact is on consumer expenditure (sum of purchase cost and energy cost during usage), which is sensitive to energy prices. At an energy price increase of 4% per year up to 2030, consumer expenditure is lower for all options than in absence of new actions and this benefit is higher for options with a higher level of ambition. At an energy price increase that falls to 0.5% per year after 2020, consumer expenditure is also lower

³ COM(2013) 75 final

for all options than in absence of new actions, although to a lesser extent, and the monetary savings are similar for all options.

29. The trend for commercial revenues follows the trend of the energy savings for all options: the higher the level of ambition of the measures, the more commercial revenues. This is because, except for electronic products, more efficient products are relatively more expensive in terms of purchasing costs. The revenues affect larger businesses and small and medium sized enterprises in the same way. Approximately 80-85% of the revenues contribute to EU GDP. For the lighting sector revenues decrease because of a further shift in sales to lamp types that have longer lifetimes and consequently need less frequent substitution. The space heating sector accounts for a large share of the increase in revenues, linked to a shift to geo-thermal heat pumps. If prices for geothermal heat pumps were to decrease further than assumed, additional revenues for all options would be less.
30. The additional administrative burden (on top of that for complying with the existing legal framework) for business is considerable in the case of significant legislative reform (option 2) and high in the case of comprehensive reform (option 3). In addition, there is a recurring administrative burden of 50 million euro for manufacturers and 10 million euro for dealers every 5-10 years from the rescaling of the sub-option introducing the A-G label. The administrative costs for registering products in option 1+ are estimated at 1.5 million euro per year for the entire industry. However, given that compliance is mandatory, manufacturers and dealers can pass these costs for rescaling and registering (combined approximately 2 to 5 eurocent per labeled product) on to consumers for whom these costs are offset many-fold by the monetary benefits resulting from the A-G label's superior performance as a basis for consumers to identify and buy more efficient products.

7. Conclusions

31. The option of only non-legislative action (option 1) can bring significant further energy savings and addresses several of the problems. However, it cannot address the crucial problem of the energy label scale layout, for which the analysis shows that there are better solutions compared to the current A+++ to D label.
32. The options of significant (option 2) and of comprehensive (option 3) legislative reform of both ecodesign and energy labelling would achieve the highest energy savings. However, these options could create disproportionate obstacles with regard to international trade, because they include third party certification for all products. Furthermore, for the extension of the scope beyond energy-related products in option 3 it is not obvious that the principle of proportionality is respected: ecodesign and energy labelling may not be the right instrument for such products and for a number of product groups this measure would overlap with other environmental policies. It thus appears to go beyond what is necessary to achieve the identified objectives.
33. The option of non-legislative action plus legislative improvements for energy labelling (option 1+) appears to be the optimal one from the perspective of all impacts combined. It addresses all identified problems to a full or significant extent and has limited administrative burden. It would include the sub-option of the A-G label, which is superior to the other options for the label layout. Option 1+ including the A-G label is estimated to save an additional 47 Mtoe primary energy per year in 2030.

Overview tables with key results of the modelling for 2030

<i>Results excluding any impact from change in label layout</i>	Option 1 New non-legislative action	Option 1+ New non-legislative action + legislative for energy labelling	Option 2 Significant legislative reform ecodesign + energy labelling	Option 3 Extending the scope and to centralise market surveillance
<i>Environmental impacts</i>				
Energy use (TWh primary/year)	-310	-490	-580	better than option 2
(Mtoe primary/year)	-27	-42	-50	
GHG (Mt CO ₂ -eq./year)	-45	-75	-87	better than option 2
<i>Economic impacts</i>				
Consumer expenditure at 4% energy price escalation rate (billion € per year)	-20	-27	-32	at best similar to option 2
Consumer expenditure at 0.5% energy price escalation rate from 2020 (billion € per year)	-8	-9	-10	at best similar to the other options
Commercial revenues (billion € per year)	+16	+30	+35	not available
<i>Administrative burden</i>				
Total administrative burden (million € per year)	+3	+6	+145	+500-1000

<i>Additional impacts of change in label layout</i>	A-G label	numeric label	reverse numeric label
<i>Environmental impacts</i>			
Energy use (TWh primary/year)	-62	+17	-36
(Mtoe primary/year)	-5	+1	-3
GHG (Mt CO ₂ -eq./year)	-9.6	+2.6	-5.5
<i>Economic impacts</i>			
Consumer expenditure at 4% energy price escalation rate (billion € per year)	-3.7	+1.0	-2.2
Consumer expenditure at 0.5% energy price escalation rate from 2020 (billion € per year)	-1.2	+0.3	-0.8
Commercial revenues (billion € per year)	+3.7	-1.0	+2.1
<i>Administrative burden</i>			
Administrative burden for business (million €)	60 (every 5-10 years)	60 (only once)	60 (only once)