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COMMISSION STAFF WORKING DOCUMENT

EXECUTIVE SUMMARY OF THE IMPACT ASSESSMENT

Accompanying the document

Commission Regulation

**implementing Directive 2009/125/EC of the European Parliament and of the Council
with regard to ecodesign requirements for domestic ovens, hobs and range hoods**

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implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for domestic ovens, hobs and range hoods

Lead DG: DG ENER

Associated DG: DG ENTR

Other involved services: SG, LS, DG ENV, DG CLIMA, DG COMP, DG ECFIN, DG CNECT, DG MARKT, DG EMPL, DG SANCO, DG TRADE, DG RTD, JRC.

Domestic cooking appliances (range hoods and electric and gas hobs and ovens) are mass market energy related products, covered by the scope of both the Ecodesign Directive 2009/125/EC and the Energy Labelling Directive 2010/30/EC.

This document and the IA report consider whether implementing measures under those Directives should be adopted to reduce their environmental impact, in particular their energy consumption. The Directives lay down a framework for the Commission (for Ecodesign assisted by a Regulatory Committee) to set eco-design and energy labelling requirements for energy-related products. These measures are an important instrument for the policy objectives under the ‘Resource-efficient Europe - Flagship Initiative’¹ and the ‘Energy 2020’² strategy paper. In the Commission’s ‘Energy Efficiency Plan 2011’³ Ecodesign measures and energy labelling play an important role. Domestic appliances, including cooking appliances, are listed as priority products in Directive 2009/125/EC. The product scope would address the most important categories in terms of sales and environmental impact.

1. PROBLEM DEFINITION

The products in scope (hereafter ‘DCA’ or ‘domestic cooking appliances’) are range hoods and electric and gas hobs and ovens for household use. Appliances that use other energy sources than electricity or gas, commercial appliances, microwave ovens, small cavity ovens, portable ovens, gas hobs with covered burners, grills and range hoods without motor represent segments with limited environmental impact and saving potential and are excluded.

The main Ecodesign problem related to cooking appliances is the lack of consumer information on energy use; even for electric ovens, which are since 10 years regulated with a mandatory energy label and of which almost 80% already have an A-label. For electric hobs, the valid standard is not suitable for measuring energy efficiency.

¹ A resource-efficient Europe – Flagship initiative under the Europe 2020 strategy, EC, 26.1.2011, COM (2011)21.

² Energy 2020, A strategy for competitive, sustainable and secure energy, EC, 10.11.2010, COM(2010) 639 final

³ Energy Efficiency Plan 2011, EC, 8.3.2011, COM (2011) 109 final.

As a result, consumers do not take energy efficiency into account in their choice for an appliance.

Over the past decades the energy performance of cooking appliances has not significantly improved, except for electric ovens, which have been regulated and have improved in energy efficiency with about 30% since 2002.

Since energy consumption of cooking appliances is not important in consumers purchase decision and as the number of households in the EU is growing, the total energy consumption of cooking appliances keeps increasing.

In figures: The total annual power consumption of all domestic hobs, ovens and range hoods in the EU has been rising from 671 PJ in 1990 to 755 PJ in 2010 and is expected to reach 779 PJ in 2020 and 816 PJ in 2030 without measures.

2. OBJECTIVES

Relevant generic objectives are given by the legal basis of the Ecodesign and Energy Labelling, i.e. Article 114 of the TFEU ('internal market') and Article 194 ('security of energy supply', 'promoting energy efficiency and energy saving') of the Treaty on the Functioning of the European Union. Operational objectives are amongst others given by the Commission's aims to reach 20% energy saving and greenhouse gas abatement in 2020.

3. CRITERIA FOR ECODESIGN (AND ENERGY LABELLING) MEASURES

The approach to decide whether and how the above objectives can be met with Ecodesign and Energy Labelling measures for cooking appliances and assessing their impact assessment has been structured in four steps.

Step 1: assessment of the criteria for an ecodesign implementing measure as laid out in Article 15(2a)-15(2c) of the Ecodesign Directive, taking into account the ecodesign parameters identified in Annex I of the Ecodesign Directive and the method for setting specific requirements laid down in Annex II of the Ecodesign Directive;

Step 2: consideration of relevant EU initiatives, market forces and environmental performance disparities of the equipment on the market with equivalent functionality as laid out in Article 15(2) of the Ecodesign Directive;

Step 3: establishing policy objectives including the desirable level of ambition, the policy options to achieve them, and the key elements of the ecodesign implementing measure as required by Annex VII by the Ecodesign Directive;

Step 4: assessment of the impacts on environment, consumers and industry, with a view to the criteria on implementing measures set out in Article 15(5) of the Ecodesign Directive.

Step 1: Legal base for an implementing measure: compliance with the Ecodesign Framework Directive, Article 15

In accordance with Article 15(4a) and Annexes I and II of the Ecodesign Directive, the Commission has carried out technical, environmental and economic preparatory studies to assess criteria for Ecodesign implementing measures on ovens, including ovens (incorporated in cookers), hobs and grills and ventilation (amongst which range hoods). The studies have shown (see table 1) that these criteria are met as:

- cooking appliances are placed on the EU market in large quantities;
- the environmental impact related to the life cycle electricity consumption of the cooking appliances is significant;

- there is a considerable disparity in the environmental impacts of the currently available DCAs subject of this proposal. Technical cost-effective solutions for these products exist that could lead to significant improvements.

The proposed scope is domestic electric and gas ovens, also incorporated in cookers, domestic electric and gas hobs and domestic range hoods. Appliances that use other energy sources than electricity or gas, commercial appliances, microwave ovens, small cavity ovens, portable ovens, gas hobs with covered burners, grills and range hoods without motor are excluded. The studies and the stakeholder consultation showed that energy consumption is the dominant environmental parameter. They also suggested that, to avoid promotion of non-functional range hoods, there is a need for extra performance requirements (grease filtering, lighting efficiency and noise).

Table 1: Criteria of Article 15(2) of the Ecodesign Directive applied on cooking appliances

Article 15 (2a)	Annual EU sales volume	2010	36,1 million
		2020	38.6 million
		2030	40.8 million
Article 15 (2b)	Environmental impact: annual energy consumption of cooking appliances (BaU)	2010	755 PJ/a (35 Mt/a CO₂)
		2020	779 PJ/a (36 Mt/a CO₂)
		2025	816 PJ/a (36 Mt/a CO₂)*
Article 15 (2c)	Improvement potential (annual) (applying existing cost-effective technology, Sub-option B)	2020	27 PJ/a (1,2 Mt/a CO₂)
		2030	60 PJ/a (2,6 Mt/a CO₂)

*CO₂ = CO₂ equivalent; CO₂ emissions per kWh electric energy decreasing due to changing energy efficiency

Step 2: Existing initiatives and capacity of market forces to address the issue

Articles 15(2) and 15(4c) of the Ecodesign Directive require relevant Community and national environmental legislation to be considered. Only electric ovens have been subject to mandatory energy labelling (Commission Directive 2002/40/EC). The other cooking appliances in question have not been subject to mandatory energy efficiency measures. For instance, the mandatory Ecodesign Commission Regulation 327/2011 on fans explicitly exclude rangehoods with power up to 280W. Horizontal legislation, e.g. on waste (recycling), hazardous substances and packaging⁴ does not address this dominant Ecodesign issue.

An important reason behind the regulatory failure to provide consumer information on energy efficiency of the cooking appliances has been the lack of adequate European standards to measure energy performance. However, recently consensus on those test standards has been reached for gas ovens, electric hobs and range hoods. Test standards for gas hobs have still to be updated to be similar to those for electric hobs, but the existing gas hob standards can be used, provided that they are used for a self-standing test method and not directly combined with electric hobs.

It is concluded from the first two steps that the criteria for Ecodesign implementing measures are met, and the cooking appliances in question should be covered by an Ecodesign implementing measure complemented by an Energy label for electric and gas ovens and range hoods.

⁴ DCAs are subject to recycling objectives under WEEE and stipulations of the Packaging Directive. RoHS and REACH apply to e.g. certain flame retardants

Step 3: Policy objectives and levels of ambition

The general objective is to realize energy saving and abatement of carbon emissions by addressing the market and regulatory failures through setting Ecodesign minimum requirements and providing relevant information through energy labels.

The options considered are self-regulation, energy labelling only, Ecodesign requirements only and a combination of an Ecodesign and energy labelling measure. Self-regulation is not initiated by industry. The combination of Ecodesign and an energy labelling measure is judged by stakeholders as most effective. However, for electric and gas hobs, the disparity in energy efficiency is limited and makes it technically/legally almost impossible to implement Energy Labelling measures with seven energy efficiency classes as intended under the 2010/30/EU Directive. Furthermore, as mentioned above, the test results between electric and gas hobs are not comparable.

Stakeholders, including the industry and consumer organisations, are predominantly in favour of a combined introduction of Ecodesign requirements and a labelling scheme for range hoods as well as electric and gas ovens.

Thus minimum requirements for hobs and the combination of minimum requirements and energy labelling for ovens and range hoods are the selected options. The Ecodesign Regulation is intended to remove the least efficient products from the market. The minimum efficiency requirements as well as the energy labelling should promote market take-up of more energy efficient appliances and provide incentives for manufacturers to invest in appliances with higher energy efficiency.

As regards the type and severity of these measures there were different views amongst interested parties and thus scenarios for three Sub-options were considered. Considerations that played a role were the Ecodesign Directive Annex II, which indicates that targets should be set at minimum life cycle costs, and on the other hand the article 15(5) of the same directive stipulating that there should be no negative impact on functionality.

Sub-option A is a medium-ambitious combination of setting mild minimum requirements on energy efficiency and energy labelling for range hoods and electric and gas ovens. The measures of this sub-option aim at the ‘low hanging fruit’ to slow down the growing trend in energy consumption of cooking appliances.

Sub-option B is the combination of minimum requirements and energy labelling of cooking appliances, aiming at the least life cycle costs (LLCC) of the appliances. With this combination of measures, the growing trend of energy consumption of cooking appliances can be halted and lowest consumer expenditure will be achieved.

Sub-option C sets minimum requirements on energy efficiency of ovens and hobs which aim at the level of the Best Available Technology (BAT) currently on the market. This ambitious sub-option would require a substantial change in technology for the majority of appliances on the market and implies important consumer expenditure higher than LLCC.

Step 4: Environmental, economic and social impact assessment

The analysis of Sub-options leads to savings versus the Business-as-Usual (BaU) as shown in Tables 2 and 3.

Table 2 Annual impacts EU-27 for Sub-options A, B and C versus BaU in 2020

	BaU absolute	Sub-opt A impact	Sub-opt B impact	Sub-opt C impact
Energy primary PJ/a	778.9	-15.8	-26.9	-31.4
GWP MtCO ₂ /a	35.5	-0.7	-1.2	-1.4
Acquisition € bn/a	13.9	0.4	1.4	3.2
Revenue industry € bn/a	4.6	0.1	0.5	1.1
Revenue trade € bn/a	7.1	0.2	0.7	1.6
Employment industry '000 jobs	37.1	1.1	3.6	8.5
Employment trade '000 jobs	61.4	1.8	6.0	14.0
Energy costs € bn/a	21.1	-0.4	-0.8	-0.9
Consumer expenditure € bn/a	35.0	0.0	0.6	2.3

Table 3 Annual impacts EU-27 for Sub-options A, B and C versus BaU in 2030

	BaU absolute	Sub-opt A impact	Sub-opt B impact	Sub-opt C impact
Energy primary PJ/a	816.0	-37.7	-60.0	-80.3
GWP MtCO ₂ /a	36.1	-1.6	-2.6	-3.5
Acquisition € bn/a	13.5	0.7	0.8	2.4
Revenue industry € bn/a	4.5	0.2	0.3	0.8
Revenues trade € bn/a	6.8	0.3	0.4	1.2
Employment industry '000 jobs	35.9	1.8	2.1	6.5
Employment trade '000 jobs	59.5	2.9	3.4	10.7
Energy costs € bn/a	33.0	-1.5	-2.5	-3.3
Consumer expenditure ⁵ € bn/a	46.5	-0.8	-1.7	-0.9

The evaluation of policy options in terms of their impacts is summarised in Table 4.

Table 4. Evaluation policy options in terms of their impacts

	base line BaU	Sub-option A	Sub-option B	Sub-option C
reduce energy consumption and related CO ₂ and pollutant emissions	0	0*	+	++
promote energy efficiency hence contribute to security of supply	0	0	+	++
no significant negative impacts on the functionality of the product. from the perspective of the user	0	+	+	-
health, safety and the environment shall not be adversely affected	0	+	+	+
no significant negative impact on consumers in particular as regards affordability and life-cycle costs	0	+	+	- **
no significant negative impacts on industry's competitiveness	0	+	+	-
setting of an ecodesign requirement shall not have the consequence of imposing proprietary technology on manufacturers	0	+	+	+

⁵ Note that the consumer expenditure in 2030, i.e. after complete stock change, roughly represents the monetary lifecycle costs.

impose no excessive administrative burden on manufacturers	0	+	+	+
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* Saving potential relatively low, as shown in the figure below.

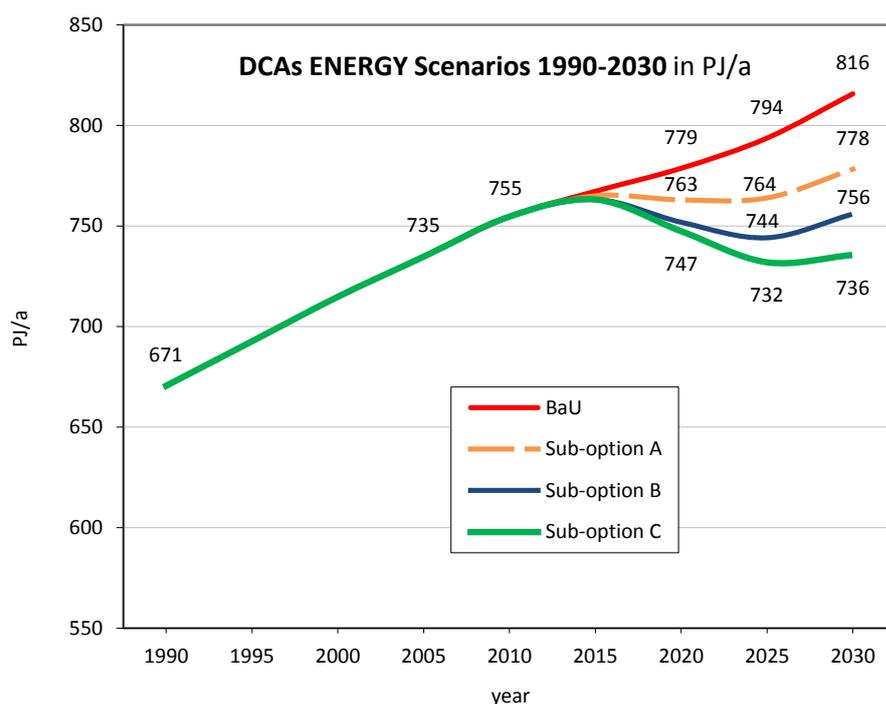
** With current technology only induction would remain as an option.

Territorial impacts are not applicable as the measures are product-oriented and do not differentiate, nor in content nor in effect, between regions.

The total administrative burden for all operators amounts to 4 million euros (< 0.1% of annual revenue), which is not excessive in view of the savings

Note that subsidiarity in this context is not applicable, because the problem is trans-national and actions by Member States alone, apart from being less effective than actions at EU-scale, would restrict free circulation of goods.

The figure below shows that, without measures, energy consumption would grow, amongst others due to the growth of the number of households in Europe. This growth in energy consumption would be slowed down under Sub-option A, the least ambitious of the three Sub-options. With Sub-options B, equal to the least life cycle costs (LLCC), this trend can be reversed and through a saving of 60 PJ, the total energy use could maintain the 2020 level in 2030. With Sub-option C, aiming at the level of the best available technology (BAT), an extra 20 PJ saving could be achieved in 2030.



4. CONCLUSIONS

The comparison of options and Sub-options shows that the appropriate policy option for realizing the improvement potential of cooking appliances is a Commission Regulation setting Ecodesign requirements for all products in question, combined with an Energy Labelling delegated Regulation on range hoods and ovens, to guide customers towards the most efficient appliances.

The analysis showed that Sub-option A had resulted in the lowest energy saving and abatement of greenhouse gas emissions, and Sub-option C in the highest. However, Sub-option C has inadmissible negative impacts in terms of affordability, functionality and possibly industry competitiveness. Furthermore, the analysis showed that Sub-option B would enhance industry competitiveness and employment. It would have a very small impact on administrative burden for legislators and industry. The measures do not have any specific territorial impact and have the full support of all stakeholders. Thus **Sub-option B was selected**, showing no negative impacts on the issues mentioned in Directive 2009/125/EC and reaching a sufficient ambition level in energy saving and greenhouse gas emission abatement.

The Ecodesign requirements would be set in three tiers in 2014, 2016 and 2018. The labelling requirements on ovens and range hoods would be set in 2014, and new label classes would be introduced for the range hoods in 2015, 2017 and 2019. This choice ensures that:

- the least energy efficient cooking appliances will be removed from the market, increasing competition on energy efficiency instead of price and additional features;
- on-going energy improvements are fostered by setting a transparent legislative framework that will provide the industry with the long-term security needed to invest in innovative technology;
- information on product differentiation provides consumers with an effective and reliable tool to compare energy consumption of products in an economic setting demand for energy efficient appliances;
- cost-effective potentials to reduce the electricity consumption of cooking appliances are quickly realized leading to significant increase in average efficiency;
- by 2020, the annual energy consumption of cooking appliances will be reduced by 27 PJ in 2020 (60 PJ in 2030) and CO₂ emissions will be reduced by 2.6 Mt in 2030;
- the accumulative energy and CO₂ savings amount to 579 PJ and 26 Mt CO₂ equivalent respectively over the 2010-2030 period;
- this can be achieved at no extra consumer expense over product life and also no negative impact on other aspects (health, safety, competitiveness, etc.) is anticipated;
- there is a clear legal framework for product design which leaves flexibility for manufacturers to achieve the efficiency levels; and gives them a level playing field, ensuring fair competition and free circulation of products;
- requirements for cooking appliances are harmonized in the Community, leading to a minimization of administrative burdens and costs for the economic operators;
- market failures are corrected and the internal market is functioning properly;
- the specific mandate of the Legislator is respected;
- costs for re-design and re-assessment upon introduction of the regulation, which are limited in absolute terms, and not significant in relative terms (per product); disproportionate burdens for manufacturers are avoided due to transitional periods which duly take into account redesign cycles;
- there is no significant impact on the competitiveness of industry, and in particular SMEs;
- there is a positive impact on employment, in particular for SMEs.

The monitoring of the impacts will mainly be done by market surveillance carried out by Member State authorities ensuring that the requirements are met, whereas the appropriateness

of scope, definitions and concepts will be monitored by the on-going dialogue with stakeholders and Member States.