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EUROPEAN COMMISSION

Brussels, xxx
SEC(2010) yyy

COMMISSION STAFF WORKING DOCUMENT

SUMMARY OF THE IMPACT ASSESSMENT

Accompanying document to the

Draft Commission Regulation implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for household washing machines

{C(2010) yyy final}
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Draft Commission Regulation implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for household washing machines

Lead DG: TREN

Associated DG: ENTR

Other involved services: COMP, ECFIN, ENV, INFSO, LS, MARKT, RTD, SANCO, SG, TRADE

Agenda planning or WP reference: 2009/TREN/023

EXECUTIVE SUMMARY

Household washing machines are currently addressed in Commission Directive 95/12/EC implementing Council Directive 92/75/EC with regard to energy labelling of household washing machines. Unlike, for instance, refrigerating appliances, household washing machines are not subject to requirements regarding minimum energy efficiency or other performance aspects.

Directive 2009/125/EC of the European Parliament and of the Council (the Ecodesign Directive) lays down a framework for the Commission, assisted by a Regulatory Committee, to set ecodesign requirements for energy-related products. It is one of the priorities of the European Economic Recovery Plan — COM(2008) 800.

The approach to developing the proposed ecodesign implementing measure for household washing machines and its impact assessment is structured in four steps:

Step 1: assessment of the criteria for an ecodesign implementing measure as set out in Article 15(2)(a)–(c) of the Ecodesign Directive, taking into account the ecodesign parameters listed in Annex I 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 disparities in the environmental performance of equipment on the market with equivalent functionality, as set 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 of the Ecodesign Directive;

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

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

In order to assess the criteria for ecodesign implementing measures as set out in Article 15(2) of the Ecodesign Directive, the Commission carried out a technical, environmental and economic analysis ('preparatory study') of household washing machines¹ in accordance with Article 15(4)(a) and Annexes I and II of the Ecodesign Directive.

The study has shown, as illustrated in Table A, that (1) household washing machines are placed on the EU market in large quantities, (2) the environmental impact of household washing machines is to a large extent related to the consumption of electricity and water during use, and remains significant despite ongoing improvements, and (3) regarding water consumption, there is a wide disparity in the performance of appliances currently on the market, and technical cost-effective solutions exist that could lead to significant improvements. The existing disparity in electricity consumption is limited, since the majority of appliances are in the same energy efficiency class. However, the preparatory study identified a substantial potential for improvement (10% cost-effective energy savings in the short term, 14% in the medium term, using the standard 60°C cycle, and up to 20% using 'benchmark' technologies).

The economic value and the environmental impacts in 2020 were calculated on the basis of a business-as-usual scenario.

Table A: Total household washing machines in the EU-27 in 2005 and 2020

Article 15(2)(a):	Annual sales volume in the EU	2005: 14 million units per year, representing an economic value of EUR 6.1 billion
Article 15(2)(b):	Environmental impact: electricity and water consumption of appliances (business-as-usual — BaU — scenario)	Electricity: – 2005: 35 TWh/yr or 18 million t/yr CO ₂ equivalent ² – 2020: 37.7 TWh/yr or 19.6 million t/yr CO ₂ equivalent Water: – 2005: 2213 million m ³ /yr – 2020: 2051 million m ³ /yr
Article 15(2)(c):	Improvement potential for household washing	Relative potential: – 10% cost-effective energy savings in the short term

¹ Preparatory study for ecodesign requirements of EuPs, Lot 14: 'Domestic Dishwashers and Washing Machines'. Available on: www.ecowet-domestic.org.

² This represents 1% of the total EU electricity consumption of about 2760 TWh in 2005.

	machines (applying existing cost-effective technology)	<p>– 14% in the medium term (using the standard 60°C cycle) and up to 20% using ‘benchmark’ technologies</p> <p>Potential in absolute term:</p> <p>Between 1.2 and 1.5 TWh/yr, depending on the sub-options, in 2020 compared with the BaU scenario (in 2025, the energy-savings potential increases to 2.2-2.7 TWh/yr compared to the BaU scenario).</p> <p>Between 64 to 83 million m³/yr water saved in 2020 (use phase).</p>
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Step 2: Existing initiatives and capacity of market forces to address the issue

Further to Articles 15(2) and 15(4)(c) of the Ecodesign Directive, relevant EU and national environmental legislation was considered. Related (voluntary) initiatives at both EU and Member State level were taken into account, and barriers leading to market failures and preventing market take-up of technologies with improved environmental performance were analysed.

As a result of energy labelling³, combined with voluntary commitments by industry between 1997-2008 to phase out the least efficient household washing machines, household washing machines have improved their energy efficiency by some 24%⁴ in the last 10 years, with the EU Energy Label becoming one of the most important market drivers.

However, as a consequence of the success of the labelling scheme and the voluntary commitments, over 90% of household washing machines are now in the energy label’s highest efficiency class. In addition, the industry has decided not to make new voluntary commitments because market actors have become too scattered for proper and fair implementation.

This can be called a **regulatory failure**, as an outdated labelling scheme means that there are no market incentives to further improve the energy efficiency of household washing machines. Consumers are no longer able to differentiate between products on the basis of their energy efficiency (all models are in the same labelling class), retailers lose interest in drawing attention to the energy label, authorities have difficulties in promoting the most efficient models, and the industry is not motivated to invest in energy efficiency, but might instead invest in other features (possibly more energy-consuming) in order to differentiate their products from those of their competitors.

Furthermore, not all environmental costs are included in electricity and water prices. Consequently, consumer (and producer) choices are made on the basis of lower prices that do not reflect environmental costs for society (**negative externality**).

³ Commission Directive 95/12/EC implementing Directive 92/75/EEC with regard to energy labelling of household washing machines, amended by Commission Directive 96/89/EC and 2006/80/EC.

⁴ Based upon an average energy consumption per cycle of 0.245 kWh/kg in 1997 and 0.185 kWh/kg in 2005.

Although the total energy consumption of household washing machines has been slowly decreasing, since the market is largely saturated and many older, less efficient appliances are continuously replaced by new, more efficient appliances, the decrease in energy consumption could be greater if the stagnation in product innovation was overcome. Stakeholders, including industry and consumer organisations, have unanimously called for the combined introduction of ecodesign requirements and a revised labelling scheme for household washing machines⁵.

From the first two steps, it is concluded that the criteria for ecodesign implementing measures as set out in Article 15(2) of the Ecodesign Directive are met, and household washing machines should be covered by an ecodesign implementing measure in accordance with Article 15(1) of the Ecodesign Directive, complemented by an upgraded energy labelling scheme.

Step 3: Policy objectives and levels of ambition

Annex II of the Ecodesign Directive provides that the level of ambition for improving environmental performance and electricity consumption is to be determined by an analysis of the least life-cycle cost for the end-user. Furthermore, benchmarks for technologies yielding best performance, as developed in the preparatory study and the discussions with stakeholders during the meeting of the Ecodesign Consultation Forum⁶ on 4 December 2008, are considered. The minutes of this meeting are attached in Annex III of this Impact Assessment. The results are reflected in the objectives that the proposed Regulation aims to achieve.

The objective is to trigger a market transformation to realise the improvement potential. Several policy options were considered, including self-regulation, revision of just the energy labelling and introduction of minimum energy performance requirements alone. Considering the strong interrelationship between the energy labelling scheme and the ecodesign requirements, and given the request by Member States, the industry, consumer organisations and environmental NGOs for a coordinated revision of the existing legislation, this impact assessment considers, in sections 5 and 6, the combined impact of both measures.

Step 4: Environmental, economic and social impact assessment

An assessment of the proposed implementing measure is carried out. Considering that the most significant environmental impact of household washing machines is their energy consumption during use, sub-options for gradual ecodesign requirements together with revised energy efficiency classes are analysed in section 6. The sub-options considered (along with a business-as-usual scenario) are as follows:

- **BaU:** Business-as-Usual scenario, i.e. continuation of current policy measures at EU level (current labelling scheme only) and no further action at EU level;
- **Sub-option A:**

⁵ In the past, Member States have launched fiscal incentive programmes to foster the market take-up of energy-efficient appliances, but the uncertainty surrounding the future of the energy efficiency classes has prevented them from initiating new support programmes. Furthermore, the Ecodesign Directive implies that legislative action on domestic appliances cannot be taken at Member State level.

⁶ The Consultation Forum is a balanced grouping of Member State representatives and stakeholders such as industry, consumer bodies and environmental NGOs, called upon to express their views.

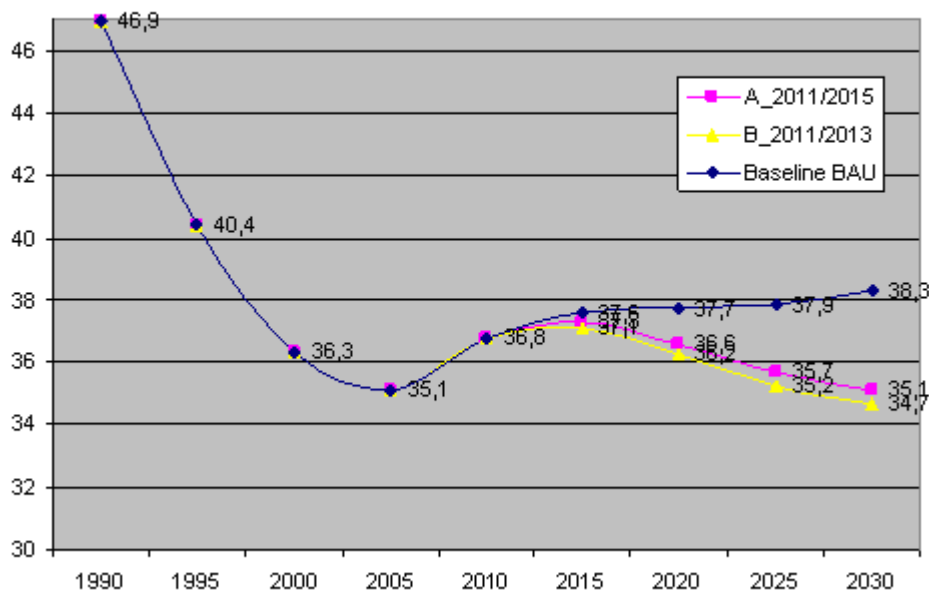
- Introduction of minimum energy efficiency requirements, i.e. $EEI < 68$ in 2011 and $EEI < 59$ in 2015,
- Introduction of a minimum washing performance requirement, i.e. $Wp > 1.03$ in 2011 ($Wp > 1.00$ for machines of max. 3 kg load capacity).
- Introduction of maximum water consumption requirements (litres/cycle, depending on rated load capacity) in 2011 and 2015 (based on part load);

– **Sub-option B:**

- Introduction of minimum energy efficiency requirements, i.e. $EEI < 68$ in 2011 and $EEI < 59$ in 2013,
- Introduction of a minimum washing performance requirement, i.e. $Wp > 1.03$ in 2011 ($Wp > 1.00$ for machines of max. 3 kg load capacity),
- Introduction of maximum water consumption requirements (litres/cycle, depending on rated load capacity) in 2011 and 2015 (based on part load).

The following graph illustrates the possible energy savings with each scenario.

Figure A: EU-27 total electricity consumption of household washing machines under sub-options A and B in TWh/year (EU-27 demand in 2005: 3106 TWh)



Source: Input to this Impact Assessment from VHK

The graph shows that from 1990 to 2005 energy consumption decreased, because the reduction in energy consumption of new appliances outweighed the increase of sales. After 2005 (approximate value) the reduction of energy consumption slowed down and eventually came to a standstill (situation 2010). The resulting energy consumption of the stock increased because of continuous increase of stock. From 2015 onwards the graph shows that the energy

consumption of household washing machines is expected to increase slightly in the business-as-usual scenario. To bring about a decrease in energy consumption, while ensuring that measures remain cost-effective, the existing legal framework needs to be upgraded.

Compared with 1990 — the reference year for climate change policy — the annual energy consumption and carbon emissions of household washing machines in 2020 will be 20% lower in the BaU scenario (1990: 47 TWh/yr; 2020: 37.7 TWh/yr). The estimated savings for sub-options A and B are 3.1 to 3.9% with respect to the baseline scenario in 2020. In 2025, savings are projected to be around 5.9 and 7.1% (compared to BaU 2025).

Sub-option B (EEI<68 in 2011 and EEI<59 in 2013) delivers the greatest savings without negative impact on other functionalities.

The analysis demonstrates that the appropriate policy option for realising the environmental improvement potential of household washing machines is the combined introduction of ecodesign requirements and revision of the labelling scheme in two stages (one year and four years after entry into force). This approach ensures that:

- no high energy-consuming household washing machines will be placed on the market and competition will continue to operate on energy efficiency and not only price;
- ongoing energy improvements are maintained and fostered by setting a transparent legislative framework that will provide the industry with the long-term security it needs to invest in innovative technology;
- fair competition and product differentiation continues to operate on energy improvements by providing consumers with an effective and reliable tool to compare the energy consumption of products in the context of strong market demand for energy-efficient appliances;
- by 2020, absolute energy savings of 3-4% (i.e. 1.2 to 1.5 TWh/yr) can be achieved compared with the Business-as-Usual scenario in 2020. Due to market inertia (i.e. the full replacement of old models by new ones takes about 15 years), the effects of the new measures up to 2020 will be very limited with respect to the baseline scenario, but in 2025 savings will increase to 6-7% (i.e. 2.2 to 2.7 TWh/yr);
- between 64 and 83 million m³/yr in water will be saved during the use phase compared to the BaU scenario;
- more energy-consuming products are quickly removed from the market, securing electricity and CO₂ savings in the EU while reducing the life-cycle costs of household washing machines for consumers. Calculated in terms of ‘net present value’ (EUR 2005), consumer expenditure — i.e. annual purchase and running costs for the EU27 population — will drop from around €3.2bn today to €2.3bn in 2020 and approximately €1.7bn in 2025 (mainly due to the increased efficiency of the installed base, BaU scenario). The difference in expenditure between the proposals is minimal.
- a level playing field for all manufacturers is guaranteed, ensuring fair competition and free movement of products;
- disproportionate burdens for manufacturers are avoided due to transitional periods that duly take into account redesign cycles.

The question of the proportionality of the measures in terms of administrative burden compared with the apparently limited potential for energy savings (1.5 TWh by 2020 compared to the BaU scenario) may be raised. However, one should consider first that the savings resulting from the implementing measures will take time to occur given the strong market inertia of this sector, so that the full impact of the measures will be seen only by 2025-2030. In addition, the BaU option (i.e. current labelling scheme left unrevised and no ecodesign requirements adopted) was strongly rejected by the industry and a majority of Member States on the grounds that it would deprive the industry of a marketing tool necessary to ensure a return on its investment in innovation. Finally, it might have a negative impact on public opinion, which is used to the labelling scheme and welcomed it as a very useful tool provided by the European Union. Consumers are likely not to understand why they are deprived of a very popular purchasing tool enabling them to obtain fair, reliable and comparable information on the performance of products.

Finally, SMEs are considered to represent 30% of manufacturers (mainly OEMs, i.e. suppliers of components like thermostats, shelves, etc.) and 80% of retailers. The analysis shows that the policy options will have no negative impact on them. On the contrary, they will benefit from stronger demand for new technologies and higher turnover.

As set out in Section 7, the impacts of the legislation will be monitored mainly through market surveillance by Member State authorities to ensure that the requirements are met, whereas the appropriateness of the scope, definitions and concepts will be monitored through ongoing dialogue with stakeholders and Member States.