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from: Secretary-General of the European Commission,  
signed by Mr Jordi AYET PUIGARNAU, Director

date of receipt: 22 November 2012

to: Mr Uwe CORSEPIUS, Secretary-General of the Council of the European  
Union

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Subject: Commission Staff Working Document  
Executive Summary of the Impact Assessment  
*Accompanying the document*  
Report from the Commission to the European Parliament and the Council  
on the voluntary ecodesign scheme for complex set-top boxes

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Delegations will find attached Commission document SWD(2012) 392 final.

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**COMMISSION STAFF WORKING DOCUMENT**  
**EXECUTIVE SUMMARY OF THE IMPACT ASSESSMENT**

*Accompanying the document*

**Report from the Commission to the European Parliament and the Council**  
**on the voluntary ecodesign scheme for complex set-top boxes**

{COM(2012) 684 final}  
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# COMMISSION STAFF WORKING DOCUMENT

## EXECUTIVE SUMMARY OF THE IMPACT ASSESSMENT

### *Accompanying the document*

#### **Report from the Commission to the European Parliament and the Council**

#### **on the voluntary ecodesign scheme for complex set-top boxes**

### 1. BACKGROUND

The Ecodesign Directive 2009/125/EC establishes a framework for the setting of ecodesign requirements for energy-related products. An energy-related product (ErP), or a group of ErPs, shall be covered by ecodesign implementing measures, or by self-regulation, if the ErP represents significant sales volumes, while having a significant environmental impact and significant improvement potential (Article 15).

These criteria are fully met by complex set top boxes (CSTBs), which are receivers for pay TV. Although the installed base of CSTBs is expected to stabilise in 2010 at around 82 million and start decreasing after 2015 to 41 million in 2020, their overall energy consumption will still be considerable as the market will be increasingly dominated by devices providing additional functionalities requiring increased power.

### 2. APPROACH FOR SETTING ECODESIGN REQUIREMENTS OR ENDORSING SELF-REGULATION

The approach for developing ecodesign implementing regulations or self-regulation and this impact assessment was structured in four steps:

Step 1: assessment of the criteria for ecodesign implementing measure/self-regulation as laid down in Article 15(2a)-15(2c) of the Ecodesign Directive, taking into account the ecodesign parameters identified in Annex I of the Ecodesign Directive;

Step 2: consideration of relevant European Union initiatives, market forces and environmental performance disparities of the equipment on the market with equivalent functionality as laid down 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 an ecodesign implementing regulation as required by Annex VII to the Ecodesign Directive and the key elements of self-regulation as required by Annex VIII to the Ecodesign Directive;

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

### 3. SUMMARY OF THE RESULTS

#### 3.1. Step 1. Legal base for an implementing measure or self-regulation: compliance with the Ecodesign Directive, Article 15, Annex VIII

In order to assess the criteria for ecodesign implementing measures or self-regulation as laid out in Article 15(2) of the Ecodesign Directive, the Commission has carried out a technical, environmental and economic study for CSTBs ("preparatory study")<sup>1</sup> following the provisions of Article 15(4a) and Annex II to the Ecodesign Directive.

With regard to the criteria established by Article 15(2) of the Ecodesign Directive, the preparatory study concludes that the most significant environmental impact is electricity consumption during the use-phase, and the following results were established for the EU:

Article 15 (2a):	Annual sales volume in the European Union	59 million in 2010 20 million in 2015 10 million in 2020
Article 15 (2b):	Environmental impact, in particular use phase electricity consumption	10 TWh in 2010 21 TWh in 2015 11 TWh in 2020
Article 15 (2c):	Improvement potential for power consumption	Up to 60%

The volume of sales of approx 60 million units per year is far above the indicative 200000 units provided for in the Ecodesign Directive.

The annual electricity consumption of CSTBs for EU-27 in 2010 approx. corresponds to the electricity consumption of Iceland. Although the stock of CSTBs will decrease by 2020, their energy consumption will remain stable due to new functionalities necessitating additional power.

Assuming that the average typical energy consumption<sup>2</sup> (hereafter 'TEC') is improved by 50%, the annual electricity consumption of CSTBs would be reduced by approx. 7 TWh annually in 2015 (when the aggregated electricity consumption of these devices will peak), which corresponds approx. to the annual electricity consumption of Luxembourg, and is considered to be significant. A further significant environmental impact is waste, which is targeted by waste policy<sup>3</sup> ("WEEE").

The improvement potential leads to a reduction of life cycle costs (cost-effective) without significantly increasing the purchasing price, because it is related to technical solutions which do not involve significant additional costs.

<sup>1</sup> EuP Preparatory study "Lot 18 - Complex set-top boxes", Bio Intelligence Service S.A.S, France, final report of December 2008, documentation available on the DG ENER ecodesign website [http://ec.europa.eu/energy/efficiency/studies/ecodesign\\_en.htm](http://ec.europa.eu/energy/efficiency/studies/ecodesign_en.htm)

<sup>2</sup> A method of testing and comparing the energy performance of computers, which focuses on the typical electricity consumed by a product while in normal operation during a representative period of time.

<sup>3</sup> Directive 2002/96/EC of the European Parliament and of the Council of 27 January 2003 on waste electrical and electronic equipment, OJ L 37, 13.2.2003, p. 24.

### 3.2. Step 2. Existing initiatives and capacity of market forces to address the issue

Further to Articles 15(2) and 15(4c) of the Ecodesign Directive, relevant European Union and national environmental legislation is considered. Related initiatives both on European Union and Member State levels are taken into account and barriers preventing for market take up of technologies with improved environmental performance are analysed.

Several market failures have been identified to explain that cost-effective technologies leading to energy efficiency improvements are not penetrating the market to a satisfactory extent by market forces alone. The vast majority of CSTBs are not purchased by the user (who ultimately pays the electricity bill), but by TV service providers, and are provided to the consumer as part of a service (split incentives). Therefore insufficient incentives exist for manufacturers to optimise the environmental performance of CSTBs, in particular the energy consumption.

Several initiatives at European Union level (Ecodesign Regulation 1275/2008, European Code of Conduct for Digital TV Services) and at Member State level aim at improving the environmental performance these products but their impact is limited. Therefore additional legislative or non-legislative action pursuant to the Ecodesign Directive should be taken on EU level.

#### Conclusion of Steps 1 and 2

The analysis carried out in Steps 1 and 2 shows that:

- the volume of sales and trade of CSTBs in the European Union is significant;
- the environmental impact of CSTBs is significant, the main environmental aspect being the electricity consumption;
- significant cost-effective improvement potentials for the electricity consumption exist;
- initiatives on European Union and Member State level, and market forces alone do not capture the improvement potential for power consumption to a satisfactory extent.

It is concluded that the criteria established in Article 15(2) of the Ecodesign Directive are met, and CSTBs should be covered by an ecodesign implementing measure or by self-regulation pursuant to Article 15(1) of the Ecodesign Directive.

### 3.3. Step 3. Policy objectives and levels of ambition

Further to Annex II to the Ecodesign Directive, the level of ambition for improving the electricity consumption of CSTBs should be determined by analysis of the least life-cycle cost for the user. The results are reflected in the objectives that the considered policy options aim to achieve.

Several policy options for achieving a market transformation realizing the appropriate level of ambition are considered, including the business as usual case, self-regulation, energy labelling and an ecodesign regulation on CSTBs.

However the impact analysis is focused on comparing a possible ecodesign regulation with the voluntary agreement to improve the energy efficiency of CSTBs (VA) that was tabled by the Digital Interoperability Forum. Voluntary agreements/self-regulation under the Ecodesign Directive requires a high level of environmental ambition and need to demonstrate that they are likely to deliver the policy objectives faster or in a less costly manner than mandatory requirements. In such case, they are considered a preferred option (recital 18 to the Ecodesign Directive). Proposals for voluntary agreements (self-regulation) are recognised as a valid alternative to regulation if their assessment against the criteria of Annex VIII to the Ecodesign Directive is deemed satisfactory (Article 17), taking into account the feedback from the Consultation Forum.

### 3.4. Step 4. Environmental, economic and social impact assessment

An assessment and comparison of a possible regulation and the VA is carried out. The two options are analysed taking into account the criteria set out in Article 15(5) of the Ecodesign Directive, and the impacts on manufacturers including SMEs. The degree of intensity of the options varies regarding the stringency of the requirements, the timing, the market coverage, and the procedure for monitoring. In addition in line with the provisions of the Directive the proposed VA is assessed against the criteria of Annex VIII.

- Option 2: the Voluntary Agreement sets targets for the energy consumption of CSTBs in two tiers set for July 2010 and July 2013, the levels broadly correspond to the recommendation of the preparatory study. The targets will have to be met by 90% of the products placed on the market/put into service by the individual signatories of the VA;
- Option 3: mandatory ecodesign requirements become effective in three tiers- July 2011, July 2012, and January 2014.

The following accumulated electricity and cost savings, and avoided CO2 emissions for the products placed on the market from July 2010 through December 2020 are expected:

	Accumulated electricity consumption (TWh)	Accumulated electricity savings (TWh)	Accumulated electricity cost savings <sup>4</sup> (billion EURO)	Accumulated avoided CO2 emissions <sup>5</sup> (Mt)
No policy (Baseline 1)	159	-	-	-
Option 2	115	44	6	21
Option 3	114	45	6.2	21

The above table indicates the difference between the impact of the voluntary and mandatory approach is negligible.

The following table summarizes the considerations on the impacts of the options 2 (VA) and 3 (regulatory) compared to the baseline scenario, and assesses them on a relative scale from 1 (low) to 4 (high):

	Economic impact (costs)	Environmental impact (electricity/CO <sub>2</sub> /electricity cost savings)	Social impact (risk for job losses in SMEs)	Improvement potential in the mid and long term
Option 2 (VA)	1	3	1	4
Option 3 (regulation)	2	3	1	2

It is concluded that Option 2 has a somewhat smaller cost for Member States (as the burden linked to the verification/monitoring is shifted to the industry) and for industry (as the voluntary agreement allows it not to redesign products across the board, but leaves 10% of the fleet uncovered by the requirements). Most importantly option 2 offers higher potential for further improvement.

<sup>4</sup> Assumption: 0.136€/kWh

<sup>5</sup> Assumption: 0.4 kg CO<sub>2</sub>/kWh

## Conclusion on Step 3 and Step 4

A comparison of those options and the assessment of Option 2 against the Annex VIII to the Directive show that the VA is the preferred option.

The VA implies the following:

- cost-effective reduction of electricity consumption of 6,5 TWh by 2016 compared to the baseline scenario, corresponding to electricity cost savings of 884 million EURO, and 2,6 Mt avoided CO<sub>2</sub> emissions;
- the requirements of Directive 2009/125/EC, in particular Recital 18 and Annex VIII are met;
- requirements enter into force faster and are less costly than in the case of regulation;
- compatibility and complementarily with existing policy instruments;
- correction of market failures and improvement of the functioning of the internal market;
- no significant administrative burdens for manufacturers or retailers;
- insignificant, if any, increase of the purchasing cost, which would be largely overcompensated by savings during the use-phase of the product;
- that the specific mandate of the Legislator is respected;
- no significant impacts on the competitiveness of industry and employment, and in particular in the SMEs sector due to the small absolute costs related to product re-design and re-assessment;
- policy objectives are achieved in a flexible way in line with the better regulation agenda;
- the involvement of service providers presents an opportunity to significantly decrease the energy consumption of CSTBs in the mid- and long-term.

## 4. MONITORING AND EVALUATION

The procedure for monitoring and reporting will look as follows:

- The Steering Committee follow progress and results of the VA and agree on practicalities, such as the selection of an independent third-party/inspector that will be collecting the data from the individual signatories, and transmitting the aggregated results to the Commission.
- Signatories will annually submit to the Commission a report via an independent third- party.
- The members of the Consultation Forum will be consulted on an annual basis to take stock and monitor the results of the VA.
- The Commission, assisted by the Committee on the Ecodesign of Energy-related Products will consider whether the objectives of the VA are met.
- If the Commission considers that the VA failed to achieve its objectives it will consider proposing a Regulation instead.