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Draft

Explanatory Memorandum accompanying
COMMISSION REGULATION (EC) No .../...
of [...]

**implementing Directive 2005/32/EC of the European Parliament and of the Council with
regard to ecodesign requirements for televisions**

EXPLANATORY MEMORANDUM

1. CONTEXT OF THE PROPOSAL

• **Grounds for and objectives of the proposal**

Directive 2005/32/EC of the European Parliament and of the Council of 6 July 2005¹ (Ecodesign Framework Directive) lists products identified by the Council and the European Parliament as priorities for the Commission for implementation. The list is based on the European Climate Change Programme (ECCP), which identifies products offering a high potential for cost-effective improvements in energy performance and reductions in CO₂ emissions. It includes consumer electronics (Article 16), and televisions are one of the most important products in this category.

A technical, environmental and economical analysis ('preparatory study') has revealed that annual sales of TVs in the EU are substantial (around 32 million). In addition, it shows that:

- (i) the environmental impact of televisions in the EU is significant, in particular electricity consumption in the use phase, estimated at 60 TWh in the EU-27 in 2007, corresponding to around 24 million tonnes of CO₂ emissions and electricity costs of about EUR 10 bn;
- (ii) there are wide disparities in the environmental performance of televisions;
- (iii) and cost-effective technical solutions exist which could significantly improve this performance (yielding power savings of 20%–30% in on-mode).

In accordance with Article 15 of Directive 2005/32/EC, televisions should therefore be subject to an ecodesign implementing measure.

• **General context**

The most significant aspect in the environmental performance of TVs is energy consumption in 'on-mode'. Cost-effective energy-saving solutions are available on the market. However, cost-effective technologies that could improve energy efficiency are not penetrating the market to a satisfactory extent due to the market failures listed below:

- i) The environmental performance of TVs, including use-phase energy consumption and in particular energy consumption in 'on-mode', has not been a decisive factor in the purchasing decisions of consumers, since easily accessible and comprehensible information on running costs and energy savings is not available, so there is little awareness of energy consumption and the associated costs (asymmetric information).
- ii) Furthermore, not all environmental costs are included in electricity prices. As a result, consumer (and producer) choices are made on the basis of lower electricity prices that do not reflect actual environmental costs for society (negative externality).
- iii) Therefore little incentive exists for manufacturers to optimise the environmental performance of TVs, in particular their energy consumption, so cost-effective improvement potentials are often not realised.

¹ OJ L 191, 22.7.2005, p. 29.

Initiatives at Community and Member State level are not expected to correct the market failures hindering realisation of the cost-effective improvement potential for on-mode energy efficiency. In the absence of specific measures, the electricity consumption of televisions is expected to increase to 132² TWh by 2020 in the EU-27, mainly due to a shift towards larger screen sizes and an increase in the number of televisions installed in households.

Additional Community action is therefore required. It is estimated that the proposed ecodesign requirements will reduce electricity consumption by 28 TWh per year by 2020.

- **Existing provisions in the area of the proposal**

In addition to electricity consumption in ‘on-mode’, televisions have further significant environmental impacts in terms of electricity consumption in standby/off mode, hazardous substances — mercury in the backlighting of LCD TVs, lead in PDP displays, flame retardants — and waste. These latter aspects are addressed by several initiatives at both EU and Member State level.

Commission Regulation (EC) No 1275/2008 of 17 December 2008³ sets ecodesign requirements for the standby/off-mode electricity consumption of electrical and electronic household and office equipment, including TVs. However, the preparatory study indicates that power consumption requirements could be more demanding for TVs, leading to a further reduction in life-cycle costs from the user perspective.

Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003⁴ (‘RoHS’) imposes restrictions on the content of mercury, lead and brominated flame retardants in TVs, which are subject to periodical review.

Directive 2002/96/EC of the European Parliament and of the Council of 27 January⁵ (‘WEEE’) addresses waste electrical and electronic equipment, including TVs. No particular difficulties in implementing WEEE for TVs are reported in the 2008 WEEE review⁶, which analyses the recycling percentages and shows that the recycling, reuse and recovery rates are met for TVs. The targets under the WEEE Directive will further encourage TV manufacturers to take waste into account in their business strategies and address LCD and PDP recycling and reuse whenever feasible from a business perspective. The review also shows that effective shredding and separation technologies are preferable to manual disassembly.

The Community eco-label for televisions under Regulation (EC) No 1980/2000 of the European Parliament and of the Council⁷ is awarded on a voluntary basis to ‘best performing’ products, and provides a benchmark complementing possible ecodesign requirements for on-mode power consumption, the ecodesign requirement for standby/off-mode, and the requirements under the WEEE and RoHS legislation.

² Of which 130 TWh are in on-mode and 2 TWh in standby/off-mode.

³ OJ L 339, 18.12.2008, p. 45.

⁴ OJ L 37, 13.2.2003, p. 19.

⁵ OJ L 37, 13.2.2003, p. 24.

⁶ See 2008 Review of Directive 2002/96 on Waste Electrical and Electronic Equipment (WEEE), Final Report, United Nations University, Bonn, Germany, et al., Contract No: 07010401/2006/442493/ETU/G4, ENV.G.4/ETU/2006/0032, 05 August 2007, http://ec.europa.eu/environment/waste/weee/studies_weee_en.htm.

⁷ OJ L 237, 21.9.2000, p. 1.

It is concluded that ecodesign requirements aiming to further reduce the use of hazardous substances or the waste impact of TVs are not appropriate, because these environmental aspects are covered by existing legislation. However, some of the ecodesign requirements for standby/off-mode should be reformulated specifically for TVs.

- **Consistency with the other policies and objectives of the Union**

Directive 2005/32/EC is an important instrument in achieving the objective of a 20% improvement in energy efficiency by 2020, and its implementation is one of the priorities of the Energy Efficiency Action Plan. Furthermore, implementation of Directive 2005/32/EC contributes to the Community's binding target of reducing greenhouse gases by at least 20% in 2020, or 30% if there is an international agreement committing other countries to comparable emission reductions. The proposed implementing Regulation will make a substantial contribution to this process. It is also consistent with the Sustainable Consumption, Production and Industrial Policy Action Plan.

2. CONSULTATION OF INTERESTED PARTIES AND IMPACT ASSESSMENT

- **Consultation of interested parties**

Stakeholders were consulted from the very beginning of the preparatory study, also within the Ecodesign Consultation Forum as required by Article 18 of the Directive.

On 16 October 2008, a meeting of the Ecodesign Consultation Forum was held. Building on the results of the preparatory study, Commission staff presented a working document suggesting ecodesign requirements for televisions. The working document was also sent to the secretariats of the ENVI (Environment, Public Health and Food Safety) and ITRE (Industry, Research and Energy) Committees of the European Parliament for information. The working document was published on DG TREN's ecodesign website and on the Commission's CIRCA portal alongside the stakeholder comments received in writing before and after the meeting.

In addition, the initiative was discussed at meetings of Commission staff with stakeholders, and with international partners on many occasions, e.g. the EU-US Summit process, the EU-Japan Energy and Regulatory Cooperation Dialogues, and IEA 'Implementing Agreement Energy Efficient End Use Equipment'.

The draft measure will be notified to the WTO/TBT before formal adoption to ensure that no barriers to trade are introduced.

A summary of the responses, and how they have been taken into account, is contained in the Impact Assessment.

- **Collection and use of expertise**

Scientific/expertise domains concerned

External expertise on televisions was mainly gathered through a preparatory study providing a technical, environmental and economic analysis of televisions. The study

was carried out by a consortium of external consultants⁸ on behalf of the Commission's Directorate General for Energy and Transport (DG TREN).

Methodology used

The methodology followed the provisions of the Ecodesign Framework Directive, in particular Article 15 and Annexes I and II. The technical, environmental and economic analysis followed the structure of the 'MEEuP' ecodesign methodology⁹, developed for the Commission's Directorate General for Enterprise and Industry and endorsed by stakeholders.

Main organisations/experts consulted

The preparatory study was conducted in an open process that took into account input from relevant stakeholders, including manufacturers and manufacturing associations, environmental NGOs, consumer organisations, EU/EEA Member State experts and international organisations such as the International Energy Agency (IEA).

Summary of advice received and used

No potentially serious risks with irreversible consequences were raised by any stakeholder, nor were any identified during the preparatory work. The technical, market and economic analysis carried out for the preparatory study resulted in recommendations for ecodesign requirements for televisions as well as a complementary energy labelling scheme under Council Directive 92/75/EEC. These recommendations were used as a basis for suggesting possible ecodesign requirements to the Consultation Forum.

Means used to make the expert advice publicly available

The preparatory study was accompanied by a dedicated website¹⁰ where interim results and further relevant materials were published regularly for timely stakeholder consultation and input. Written submissions from stakeholders are listed in the final reports. The study website was publicised on the ecodesign websites of Transport and Energy DG and Enterprise and Industry DG. The Commission hosted an open consultation meeting for stakeholders directly affected in Brussels on 3 May 2007 to discuss and validate the preliminary results of the study. The written submissions received through the Consultation Forum process are available on the Commission's CIRCA portal. The minutes of the Forum meeting on 16 October 2008 are available on Transport and Energy DG's website¹¹.

• **Impact assessment**

An impact assessment was carried out in accordance with Article 15(4)(b) of Directive 2005/32/EC. Several options for improving the environmental impact of televisions were considered:

⁸ EuP preparatory study 'Lot 5: Televisions', documentation available on the ecodesign website of the Commission's Directorate General for Energy and Transport:

http://ec.europa.eu/energy/demand/legislation/eco_design_en.htm.

⁹ 'Methodology for the Ecodesign of Energy Using Products', Methodology Report, final of 28 November 2005, VHK, available on the DG TREN and DG ENTR ecodesign websites:

http://ec.europa.eu/energy/demand/legislation/eco_design_en.htm

http://ec.europa.eu/enterprise/eco_design/index_en.htm.

¹⁰ www.ecotelevision.org.

¹¹ Available on DG TREN's ecodesign website:

http://ec.europa.eu/energy/efficiency/ecodesign/forum_en.htm.

- Option 1: No EU action
- Option 2: Self-regulation
- Option 3: Energy labelling only
- Option 4: Ecodesign requirements only
- Option 5: Combination of ecodesign requirements and energy labelling

Options 1 to 4 were discarded because they would not create sufficient market transparency, consumer awareness and incentive for innovation. The market failures would therefore persist, and improvement and innovation in energy efficiency would be slower (for more details, see the accompanying impact assessment).

Under Option 5, the improvements that can be achieved with currently available cost-effective technology can be fully captured by setting ecodesign requirements and creating incentives through energy labelling to invest in new energy-efficient technologies, thereby fostering their market penetration and ensuring rapid market transformation.

For Option 5, possible sub-options for the ‘intensity’ of the ecodesign measure — the timing of the transition periods under Article 15(4)(f) of the Ecodesign Directive for achieving the cost-effective efficiency improvements — were analysed, together with the impact of a complementary energy labelling scheme. This analysis took account of the criteria in Article 15(5) of the Ecodesign Directive and the impacts on manufacturers, including SMEs. The following sub-options were considered:

- Sub-option 1: ecodesign requirements to be effective in two stages, one year after entry into force of the Regulation and on 1 April 2012, respectively; the second stage corresponds to an improvement of 20%–30% in current average on-mode power consumption;
- Sub-option 2: as sub-option 1, but stage 2 becomes effective on 1 April 2013;
- Sub-option 3: ecodesign requirements corresponding to an improvement of 20%–30% in current average on-mode power consumption to become effective one year after entry into force of the Regulation;
- Sub-option 4: ecodesign requirements corresponding to current average on-mode power consumption to become effective two years after entry into force of the Regulation.
- Sub-option 5: as sub-option 2, but ecodesign requirements in the second stage for on-mode power consumption as currently under discussion in California (as of November 2008).

The analysis of the impacts of the sub-options concludes that the combination of ecodesign requirements and energy labelling will have the following result:

- Reduction of the life cycle environmental impact of EPS, in particular: the ecodesign requirements will realise the cost-effective improvement potential for on-mode power consumption, leading to electricity savings of 28 TWh by 2020 in the EU;
- the labelling scheme will create market transparency for consumers and provide incentives for manufacturers for innovation and investment in energy efficiency;

- the combined effects will lead to market transformation, yielding significant annual energy savings of 43 TWh by 2020 in on-mode power consumption (more than the electricity consumption of Romania), assuming an annual improvement of 4% due to energy labelling, corresponding to 17.2 million tonnes of CO2 emissions, compared to a business-as-usual scenario with an expected on-mode electricity consumption of 130 TWh by 2020;
- bringing forward the standby/off-mode power consumption requirements planned for the second stage of the standby/off-mode Regulation (effective from 2011 instead of 2013) will yield additional overall energy savings of about 2 TWh;
- a clear legal framework will be created, ensuring fair competition and proper functioning of the internal market;
- the requirements for on-mode power consumption in the EU will be harmonised, thus minimising administrative burdens and costs for economic operators;
- no disproportionate burdens and only minor additional costs for manufacturers will arise, due to transitional periods that duly take into account re-design cycles, the pace of innovation and the return on the associated investment;
- no significant negative impact on the functionality of televisions, safety, health and environment;
- no significant impacts on the competitiveness of industry, in particular SMEs, and employment.

3. LEGAL ELEMENTS OF THE PROPOSAL

• Summary of the proposed action

Scope

The scope of the ecodesign implementing regulation and the energy labelling directive covers TV sets (display and tuner sold as a unit) and TV monitors (display only), while computer monitors are not included.

Ecodesign requirements

Energy efficiency levels: ecodesign requirements for on-mode power consumption are set to come into force in two stages, as shown in the following table, where A is the screen area (in dm²)

	<i>On-mode power consumption</i>
<i>Stage 1: 1 year after entry into force of regulation</i>	Resolution lower than full HD: $\leq 20 \text{ Watts} + A \cdot 4.32 \text{ Watts/dm}^2$ Full HD resolution: $\leq 20 \text{ Watts} + A \cdot 1.12 \cdot 4.32 \text{ Watts/dm}^2$ (15 Watts for television monitors)
<i>Stage 2: from April 2012</i>	All resolutions: $\leq 20 \text{ Watts} + A \cdot 3.46 \text{ Watts/dm}^2$ (15 Watts for television monitors)

These requirements aim to realise the cost-effective energy savings potential for all TVs, while meeting the criteria for ecodesign implementing measures. In particular,

the levels can be achieved by all display technologies currently on the market, including full HD plasma technology.

The requirements for standby/off-mode power consumption are re-formulated for televisions, and televisions are taken out of the scope of Commission Regulation (EC) No 1275/2008 of 17 December 2008. In particular, the stage 2 requirements of the latter regulation become effective 2 years after entry into force of this regulation (instead of 7 January 2013).

Automatic power-down: a requirement for automatic power-down is planned for stage 1, which is a TV-specific equivalent to the requirement planned for stage 2 of the standby/off-mode regulation, and is similar to the corresponding ecodesign requirement for simple set top boxes.

Luminance: a requirement setting a minimum ratio between the luminance achieved by the default picture settings and the maximum luminance is proposed in order to ensure fair competition.

Date for evaluation and possible revision

The appropriateness of ecodesign requirements should be re-assessed in the short term, because new technologies are expected to enter the market in the near future, and further development of 'conventional' LCD and PDP technologies is expected.

Benchmarks

The currently best available performance in terms of on-mode energy efficiency and reduced environmental impact of hazardous substances is identified by the revised ecological criteria for the award of the Community ecolabel to televisions.

Measurement method

An appropriate method for the measurement of on-mode power consumption has been developed by the International Electrotechnical Commission. A mandate for the European Standardisation Bodies for a harmonised standard will be presented to the Regulatory Committee.

Verification procedure for market surveillance purposes

The uncertainties allowed for tests carried out for market surveillance purposes are based on the results of international round-robin tests carried out recently.

- **Legal basis**

The proposed Regulation is an implementing measure under Directive 2005/32/EC, in particular Article 15(1). The Directive is based on Article 95 of the Treaty.

- **Subsidiarity principle**

The adoption of different ecodesign measures for televisions by individual Member States would lead to obstacles to the free movement of goods within the Community. Such measures must therefore be harmonised. In line with the principle of subsidiarity, it is thus appropriate for the measures in question to be adopted at Community level.

- **Proportionality principle**

In accordance with the principle of proportionality, this measure does not go beyond what is necessary in order to achieve its objective.

- **Choice of instruments**

Proposed instrument: Regulation

The proposed form of action is a Commission Regulation (implementing Framework Directive 2005/32/EC), because the objectives of the action can be achieved most efficiently by fully harmonised requirements (including timely entry into force) throughout the EU, thus ensuring the free movement of compliant equipment.

4. BUDGETARY IMPLICATIONS

The proposal has no implications for the Community budget

5. ADDITIONAL INFORMATION

- **Review/revision/sunset clause**

The proposal includes a review clause.

- **Trade implications**

WTO/TBT is notified to ensure that no barrier to trade is introduced.

- **European Economic Area**

The proposed act concerns an EEA matter and should therefore extend to the European Economic Area.