



# **Come On Labels**

## **Common appliance policy – All for one, One for all**

### **– Energy Labels**

Contract N°: IEE/09/628/SI2.558219

## **New EU legislation related to energy labels on household appliances**

### **Household tumble driers**

**(Work Package 2 - Deliverable 2.3)**

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with the support of the Come On Labels project partners.

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This document was prepared within the **Come On Labels project**, supported by the Intelligent Energy Europe programme. The main aim of the project, active in 13 European countries, is to support appliance energy labelling in the field of appliance tests, proper presence of labels in shops, and consumer education.

# 1 Summary

The Come On Labels project is focused on the support of the proper implementation of energy labelling of products, from investigating the adaption of legislation, through visiting shops for monitoring the proper presence of labels, collecting information about product tests, collecting information about product replacement schemes, to organising consumer education and promotion activities related to the awareness on the introduction of the new energy labels.

This specific series of documents deals with the EU legislation related to energy using products and energy labelling adapted and implemented during the course of the Come On Labels project (12/2010 – 5/2013).

For the full new energy labelling legislation and the energy labels related to individual product groups, please, consult the project website:

<http://www.come-on-labels.eu/legislation/eu-product-energy-labelling>

The focus of this specific document is the description of the latest legislation related to product energy labelling of household tumble driers, which, as the Regulation notes, account for a significant part of household energy demand, and where there is a scope for further reduction of their energy consumption.

Previous documents have focused on the description of the new energy labels introduced for refrigerating appliances, washing machines, dishwashers, TVs, and air-conditioning units, as well as on a comparison of the energy labelling and ecodesign requirements for the same product types.

## 2 Household tumble driers

### 2.1 *The energy labelling*

#### 2.1.1 Dates of entry into force

The Commission Delegated Regulation n. 392/2012<sup>1</sup> of 1 March 2012 will enter into force on 29 May 2013<sup>2</sup>. The display of information from the new energy labels for household tumble driers on printed advertisements and technical promotion materials is compulsory from 29 September 2013.

Five years after the entry of this Regulation into force (2018), the Commission shall review it in the light of technological progress, in particular the verification tolerances.

Models entering the market before 29 May 2013, should comply with the provisions of the Directive 95/13/EC.

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<sup>1</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:123:0001:0026:EN:PDF>

<sup>2</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:124:0056:0056:EN:PDF>

## 2.1.2 Subject matter and scope

The regulation defines requirements for the labeling of electric mains-operated and gas-fired household tumble driers, as well as built-in driers, including those sold for non-household use. It does not apply to combined washer-driers and household spin-extractors.

Full description of products covered and their operational characteristics is made available in Article 2, Definitions, page L 123/2.

## 2.1.3 Responsibilities

### Suppliers shall ensure that:

- Each drier is supplied with a printed label in the prescribed format and content
- Product fiche (Annex II) is made available
- Technical documentation (Annex III) is made available on request to the authorities
- Any advertisement and technical promotional material, featuring the product price or specific technical parameters, includes also the energy efficiency class of that model.

### Dealers shall ensure that:

- Each drier at the point of sale bears the label provided by supplier on the outside of the front or top of the model in such a way as to be clearly visible
- Driers offered for sale where the end-consumer cannot see the product, are marked with specific information defined in Annex IV, for example its rated capacity in kg of cotton at full load; energy efficiency class; weighted Annual Energy Consumption (based on 160 drying cycles); energy consumption at full and partial load; off-mode and left-on mode power consumption, etc.
- Any advertisement and technical promotion material, featuring the product price or specific technical parameters, includes also the energy efficiency class of that model.

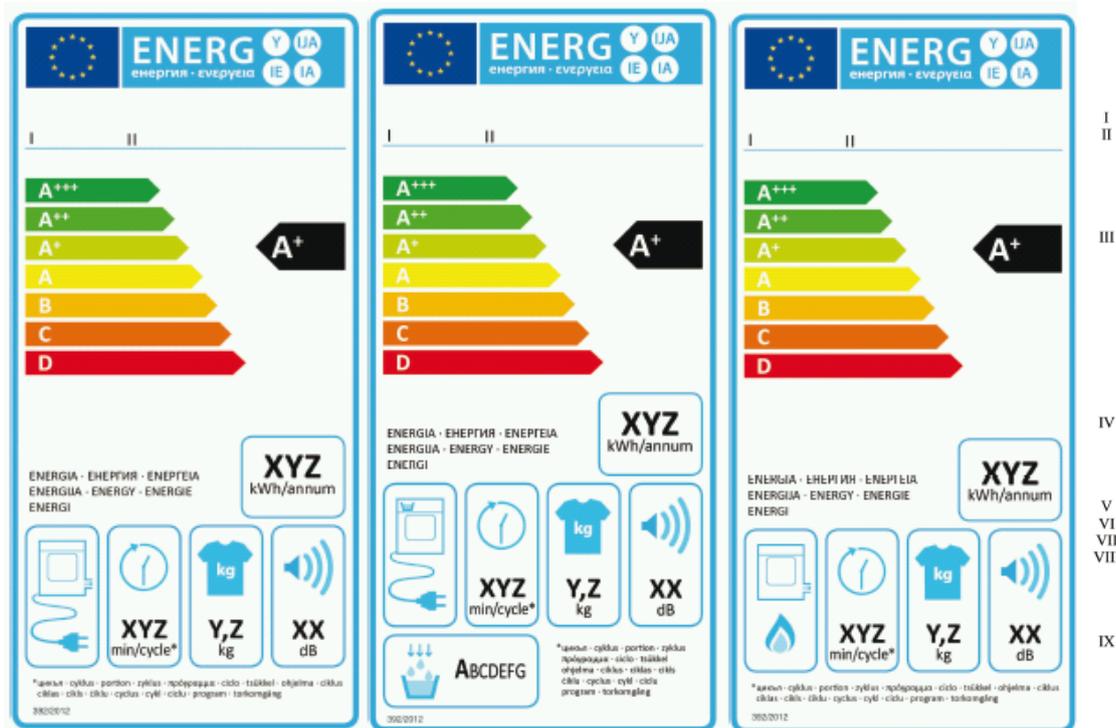
### Market surveillance verification procedures:

- Member states shall apply the procedure set out in Annex V for assessing the conformity of the declared energy efficiency class, the energy consumption per cycle, the rated capacity, power consumption in off-mode and left-on mode and other features,
- Measurements and calculations shall be made using harmonized standards, or other reliable, accurate and reproducible methods, which take into account the generally recognized state of the art methods, and whose results are deemed to be of low uncertainty,
- A single drier should be tested for the purposes of conformity checking. If the measured parameters do not meet the values declared by the supplier within the prescribed ranges (Table 1, Annex V, page L 123/22), the measure shall be carried out on three more units. The arithmetic mean of the values of the three units shall meet the values declared, otherwise, the model shall be considered not to comply with the requirements. Verification tolerance for the majority of parameters (energy consumption, condensation efficiency, programme time, duration of the left-on mode) is set at 6%, which is believed to represent the acceptable laboratory testing error, including both full and partial load cycles.

## 2.1.4 Energy label variants

The following versions of the energy label have been designed and shall be used:

- Air-vented household tumble driers
- Condenser household tumble driers
- Gas-fired household tumble driers



### Information to be contained on the energy labels:

- I. Supplier's name or trade mark;
- II. Supplier's model identifier
- III. The energy efficiency class; the head of the arrow containing the energy efficiency class of the appliance shall be placed at the same height as the head of the arrow of the relevant energy efficiency class
- IV. Weighted annual energy consumption (A<sub>Ec</sub>) in kWh/year;
- V. Information on type of household tumble drier;
- VI. Cycle time corresponding to the standard cotton programme at full load in minutes;
- VII. Rated capacity, in kg, for the standard cotton programme and full load;
- VIII. Sound power level during the drying phase expressed in dB, rounded to the nearest integer

Additional Information for condenser household tumble driers:

- IX. The condensation efficiency class.

The specific content and graphic design of all of the variants is defined in **Annex I**.

The graphic layout of the icons for different types of driers is therefore as follows:

Air-vented driers	Condenser driers	Gas-fired driers
		

**Annex II** of the Regulation describes the specific content of information required to be made available to consumers within the Product Fiche, for example the models' weighted Annual Energy Consumption, energy consumption at full and partial load, indication, that the "standard cotton programme" is the most efficient programme in terms of energy consumption for cotton.

**Annex III** describes the prescribed content of the Technical documentation, which shall be made available to authorities upon request, such as eg. the references to the harmonized standards applied, the identification of the person empowered to bind the supplier, technical parameters, and the results of calculations and extrapolations, as well as a list of other equivalent models, where the information was obtained in the same way.

**Annex IV** lists the information, required to be available to consumers where they cannot see the product displayed (e.g. in online sales), such as the models' rated capacity, energy efficiency class, Annual Energy Consumption, energy consumption at full and partial load, power consumption of the off-mode and the left-on mode, the programme time of the standard cotton programme at full load, etc.

## 2.2 Energy labelling vs. ecodesign

The new energy label for household tumble driers (electric air-vented, electric condenser and gas-fired air vented) contains energy efficiency classes A+++ to D (as opposed to an A to G scale on the old energy label).

On 3 October 2012, the Ecodesign regulation n. 932/2012<sup>3</sup> has been implemented, affecting the same types of product as defined in the above described Labelling regulation. It enters into force on 1 November 2013, however the generic ecodesign requirements shall apply from 1 November 2014 and specific requirements from 1 November 2015. The Commission shall review this Regulation no later than five years after its entry into force and present the results to the Ecodesign Consultation Forum.

<sup>3</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:278:0001:0010:EN:PDF>

## 2.2.1 Ecodesign requirements to household tumble driers

### Generic requirements:

- For the calculation of the energy consumption and other parameters, the cycle which dries cotton laundry up to remaining moisture content of the load of 0% (with an initial moisture content of 60%) shall be used.
- The booklet of instructions shall provide information about the “standard cotton programme” as the most efficient programme, the power consumption of the off-mode and left-on mode, and the indicative information on the programme time and energy consumption for the main drying programmes at both full, and, if applicable, partial load.

### Specific requirements:

- From 1 November 2013 the energy efficiency index shall be less than 85 and for condenser driers the weighted condensation efficiency shall be not lower than 60%,
- From 1 November 2015 the condenser driers’ energy efficiency index shall be less than 76 and the condensation efficiency shall not be lower than 70% (applying only to condenser driers).

## 2.2.2 Impact of the ecodesign regulation on drier energy labels

According to the Ecodesign regulation for driers, only class C and better can enter the market one year after the Regulation entered into force. Three years after the entry into force the EEI shall be less than 76, which will phase out Class C condenser driers, but not vented driers.

*Therefore, models of driers entering the market after 1 November 2013 will only be in energy efficiency class C and better, the condenser driers entering market after 1 November 2015 will only be in energy efficiency class B and better.*

## Household tumble driers

Labelling		Ecodesign																																											
<p><b>Energy efficiency class</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Energy Efficiency Class</th> <th style="text-align: left;">Energy Efficiency Index</th> </tr> </thead> <tbody> <tr> <td>A+++ (most efficient)</td> <td><math>EEI &lt; 24</math></td> </tr> <tr> <td>A++</td> <td><math>24 \leq EEI &lt; 32</math></td> </tr> <tr> <td>A+</td> <td><math>32 \leq EEI &lt; 42</math></td> </tr> <tr> <td>A</td> <td><math>42 \leq EEI &lt; 65</math></td> </tr> <tr> <td>B</td> <td><math>65 \leq EEI &lt; 76</math></td> </tr> <tr> <td>C</td> <td><math>76 \leq EEI &lt; 85</math></td> </tr> <tr> <td>D (least efficient)</td> <td><math>EEI \geq 85</math></td> </tr> </tbody> </table> <p><b>Additional Information for Condenser Household driers:</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Condensation efficiency class</th> <th style="text-align: left;">Weighted condensation efficiency</th> </tr> </thead> <tbody> <tr> <td>A (most efficient)</td> <td><math>C_t &gt; 90</math></td> </tr> <tr> <td>B</td> <td><math>80 &lt; C_t \leq 90</math></td> </tr> <tr> <td>C</td> <td><math>70 &lt; C_t \leq 80</math></td> </tr> <tr> <td>D</td> <td><math>60 &lt; C_t \leq 70</math></td> </tr> <tr> <td>E</td> <td><math>50 &lt; C_t \leq 60</math></td> </tr> <tr> <td>F</td> <td><math>40 &lt; C_t \leq 50</math></td> </tr> <tr> <td>G (least efficient)</td> <td><math>C_t \leq 40</math></td> </tr> </tbody> </table> <div style="text-align: center; margin-top: 10px;">  </div>		Energy Efficiency Class	Energy Efficiency Index	A+++ (most efficient)	$EEI < 24$	A++	$24 \leq EEI < 32$	A+	$32 \leq EEI < 42$	A	$42 \leq EEI < 65$	B	$65 \leq EEI < 76$	C	$76 \leq EEI < 85$	D (least efficient)	$EEI \geq 85$	Condensation efficiency class	Weighted condensation efficiency	A (most efficient)	$C_t > 90$	B	$80 < C_t \leq 90$	C	$70 < C_t \leq 80$	D	$60 < C_t \leq 70$	E	$50 < C_t \leq 60$	F	$40 < C_t \leq 50$	G (least efficient)	$C_t \leq 40$	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Application Date</th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td style="vertical-align: top;">01/11/2013</td> <td style="vertical-align: top;"><math>EEI &lt; 85</math></td> <td style="vertical-align: top;">for condenser household driers the weighted condensation efficiency shall not be lower than 60%;</td> </tr> <tr> <td style="vertical-align: top;">01/11/2015</td> <td style="vertical-align: top;"><math>EEI &lt; 76</math></td> <td style="vertical-align: top;">for condenser household driers the weighted condensation efficiency shall not be lower than 70%;</td> </tr> </tbody> </table>			Application Date			01/11/2013	$EEI < 85$	for condenser household driers the weighted condensation efficiency shall not be lower than 60%;	01/11/2015	$EEI < 76$	for condenser household driers the weighted condensation efficiency shall not be lower than 70%;
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## 2.3 The “old” energy label for household tumble driers

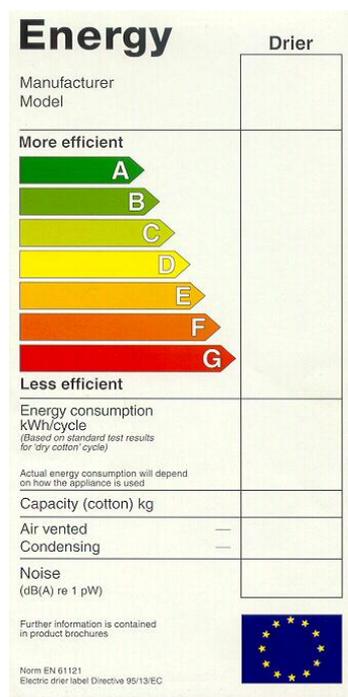
The energy label prescribed to be used for models entering the market before 29 May 2013, is defined in the Council Directive 95/13/EC<sup>4</sup>. On this label, the content is made available in individual languages. It only applies to electric mains-operated household tumble driers.

The information to be provided for the consumers, via the energy label, and the fiche, shall include for example:

- Energy efficiency class, energy consumption in kWh per cycle, rated capacity of cotton in kg, type of appliance (air vented or condensing) (for energy label), and
- Water consumption and drying time in accordance with test procedures, information for iron dry cotton and easy care textiles programmes (if available), drying time and average annual energy (and water) consumption (based on 150 kg dry cotton, 280 kg iron dry cotton, plus 150 kg easy care textile programmes) (the fiche).

Information made available by mail order and distant selling shall include:

- Energy efficiency class, energy consumption, capacity, water consumption per cycle, estimated annual consumption and noise.



<sup>4</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:1995:136:0028:0051:EN:PDF>

## 2.4 Market situation of the household tumble driers

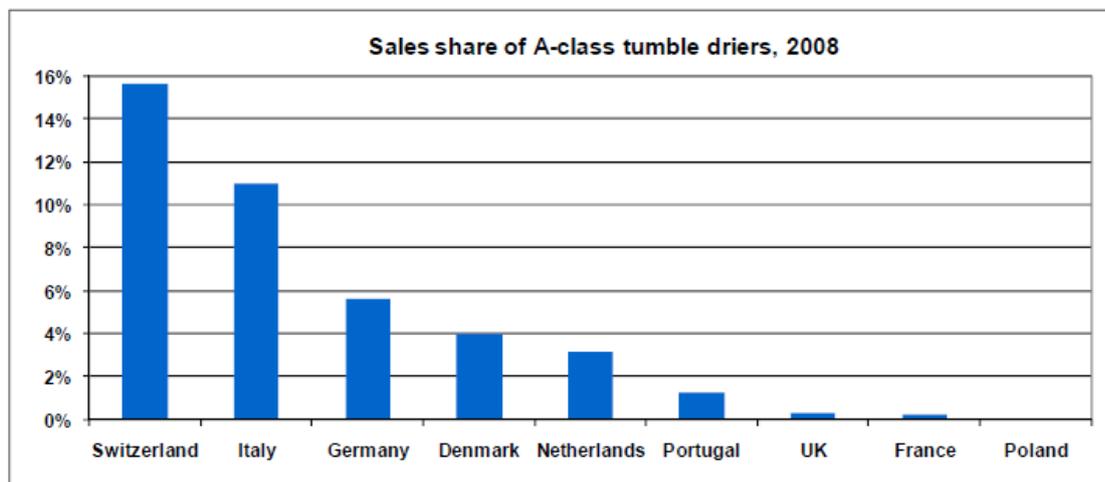
This sub-chapter is based on data from a JRC study: “Energy Efficiency Status Report 2012”<sup>5</sup>. More information about selecting the most energy efficient driers is available at the product selection criteria website of Topten.eu<sup>6</sup>.

Since the introduction of the old energy label, household tumble driers have improved their energy efficiency by some 12%; the EU energy label is believed to have been one of the most important market drivers for this improvement in efficiency.

In 2005, 90% of drier appliances sold in the EU-25 were class **C** appliances. Two years later in 2007, the share of class **C** appliances dropped to 75% of all driers sold in the EU-20. 16.7% of appliances sold were class **B**. The share of class **A** appliances was still very small with 1%. In 2008, sales share of class **A** driers were already significant in some EU Member States, for example in Italy the share was over 10%. Classes **A** (and later on **A+** to **A+++**) are reserved for heat pump driers.

As for washing machines, the average loading capacity of tumble driers has been increasing as well. In the year 2000, the average capacity of models available was 4.9 kg. In 2008, eight years later, the average capacity was 6.6 kg. Tumble driers became more efficient during this period: the product weighted energy efficiency ratio fell from 0.71 kWh/kg to 0.59 kWh/kg.

There are significant differences in energy efficiency between the best product and the worst product on the market. In 2008 the worst product had an efficiency of 0.95 kWh/kg whereas the best product was 0.27 kWh/kg.



The relatively high share of class **A** appliances in Switzerland shown above can be explained by a subsidy programme and minimum energy performance standards.

<sup>5</sup> <http://iet.jrc.ec.europa.eu/energyefficiency/sites/energyefficiency/files/energy-efficiency-status-report-2012.pdf>

<sup>6</sup> [http://www.topten.eu/english/criteria/tumble\\_dryers.html&fromid=](http://www.topten.eu/english/criteria/tumble_dryers.html&fromid=)

More information about the project activities and all of its results are published on:

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