Come On Labels

Common appliance policy – All for one, One for all – Energy Labels

Contract N°: **IEE/09/628/SI2.558219**

EU- new legislation related to energy labels on household appliances and its national implementation

Room AirConditioners

(Work Package 2 - Deliverable 2.3)

December 2011 – February 2012

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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.

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1 Summary

This document 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 document is the description of the latest legislation related to product energy labelling and its national implementation.

The first edition of this document, produced in December 2011, describes in full detail the new legislation related to room air conditioners, the latest legislation related to product energy usage on the EU level and adapted on the individual national markets.

2 Room Air Conditioners

2.1 The energy labelling

The delegated Regulation No 626/2011 of 4 May 2011 has been applied from 26 July 2011. The new provisions laid down by this Regulation repeals Directive 2002/31/EC.

The Regulation establishes requirements for the labelling and the provision of supplementary product information for electric mains-operated air conditioners with a rated capacity of ≤ 12 kW for cooling, or heating, if the product has no cooling function. The 12 kW level is the generally agreed limit between small (mainly domestic) and bigger (mainly commercial) air-conditioning appliances.

The units may be air or water cooled and there are separate standards for each main type. The regulations do not apply to portable spot air-conditioners, dehumidifiers or evaporative or desiccant coolers.

The labelling requirements include:

- A-G energy labels with a new design.
- Gradual introduction of additional classes (A+ to A+++) from 2013.

Timetable	
January 1, 2013	energy efficiency rating from A to G, requirements for suppliers and dealers
From January 1, 2015	energy efficiency rating from A+ to F
From January 1, 2017	energy efficiency rating from A++ to E
From January 1, 2019	energy efficiency rating from A+++ to D

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- Energy rating of the cooling and heating functions.
- Indication of the annual or hourly energy consumption.
- Indication of sound levels
- Separate energy labels for split, double duct and single duct products.

Cooling equipments used in residential and small commercial buildings often express cooling system efficiency in terms of Energy Efficiency Ratio (EER) and/or Seasonal Energy Efficiency Ratio (SEER). For room air conditioners the commonly used efficiency ratio is EER, for central air conditioners it is SEER.

The Regulation introduces two energy efficiency scales based on the primary function and on specific aspects important to consumers. As air conditioners are mainly used in part-load conditions, the efficiency testing should be changed to a seasonal efficiency measurement method (SEER), except for single and double duct air conditioners.

The new efficiency calculation method with an Ecodesign implementing measure setting minimum energy efficiency requirements higher than the current A level, will lead to a reclassification of these appliances. Consequently, split, window and wall air conditioners should have a new A-G energy efficiency class scale with a "+" added on the top of the scale every two years until the A+++ class has been reached.

Room air-conditioners are graded on a scale from A-G. Some room air conditioners have a heating mode where the internal systems can be reversed for use in winter to produce warm air for the room and to expel cool air outside. Room air conditioners with this function must quote a second A-G rating for the heating mode, based upon the coefficient of performance (CoP)

Energy efficiency classes for air conditioners, except double ducts and single ducts

Energy Efficiency Class	SEER	SCOP
A+++	SEER ≥ 8,50	SCOP ≥ 5,10
A++	6,10 ≤ SEER < 8,50	4,60 ≤ SCOP < 5,10
A+	5,60 ≤ SEER < 6,10	4,00 ≤ SCOP < 4,60
A	5,10 ≤ SEER < 5,60	3,40 ≤ SCOP < 4,00
B	4,60 ≤ SEER < 5,10	3,10 ≤ SCOP < 3,40
C	4,10 ≤ SEER < 4,60	2,80 ≤ SCOP < 3,10
D	3,60 ≤ SEER < 4,10	2,50 ≤ SCOP < 2,80
E	3,10 ≤ SEER < 3,60	2,20 ≤ SCOP < 2,50
F	2,60 ≤ SEER < 3,10	1,90 ≤ SCOP < 2,20
G	SEER < 2,60	SCOP < 1,90

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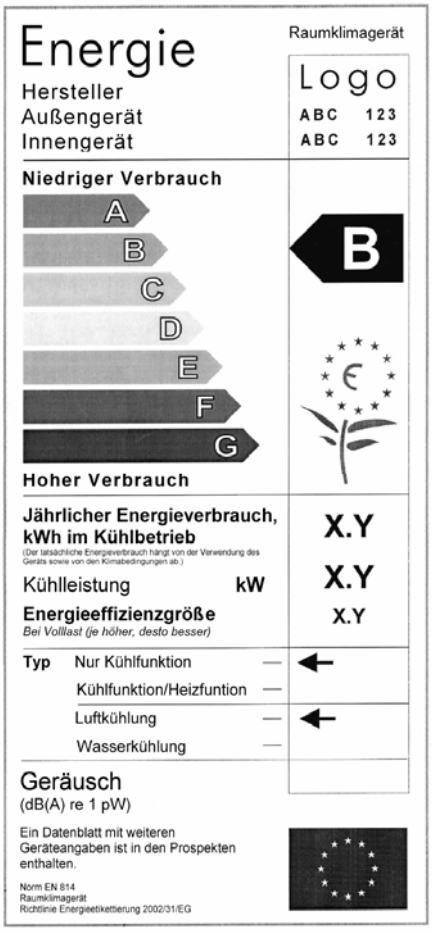
Energy efficiency classes for double ducts and single ducts

Energy Efficiency Class	Double ducts		Single ducts	
	EERrated	COPrated	EERrated	COPrated
A+++	≥ 4,10	≥ 4,60	≥ 4,10	≥ 3,60
A++	3,60 ≤ EER < 4,10	4,10 ≤ COP < 4,60	3,60 ≤ EER < 4,10	3,10 ≤ COP < 3,60
A+	3,10 ≤ EER < 3,60	3,60 ≤ COP < 4,10	3,10 ≤ EER < 3,60	2,60 ≤ COP < 3,10
A	2,60 ≤ EER < 3,10	3,10 ≤ COP < 3,60	2,60 ≤ EER < 3,10	2,30 ≤ COP < 2,60
B	2,40 ≤ EER < 2,60	2,60 ≤ COP < 3,10	2,40 ≤ EER < 2,60	2,00 ≤ COP < 2,30
C	2,10 ≤ EER < 2,40	2,40 ≤ COP < 2,60	2,10 ≤ EER < 2,40	1,80 ≤ COP < 2,00
D	1,80 ≤ EER < 2,10	2,00 ≤ COP < 2,40	1,80 ≤ EER < 2,10	1,60 ≤ COP < 1,80
E	1,60 ≤ EER < 1,80	1,80 ≤ COP < 2,00	1,60 ≤ EER < 1,80	1,40 ≤ COP < 1,60
F	1,40 ≤ EER < 1,60	1,60 ≤ COP < 1,80	1,40 ≤ EER < 1,60	1,20 ≤ COP < 1,40
G	EER < 1,40	COP < 1,60	EER < 1,40	COP < 1,20

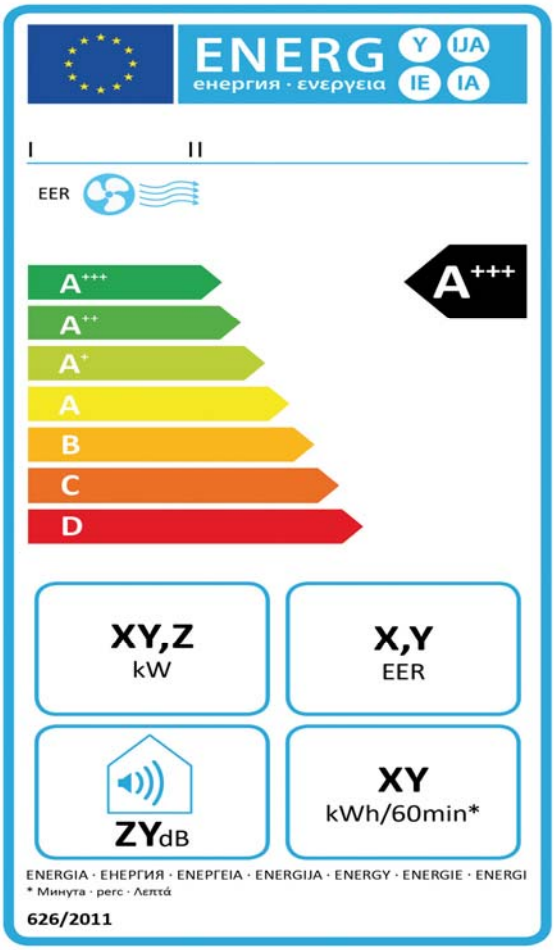
2.1.1 New and old label design

OLD LABEL



NEW LABEL

Cooling-only single duct air conditioners classified in energy efficiency classes A+++ to D *)



I. Supplier's name or trade mark. II. Supplier's model identifier. For 'split and multi-split units', the model identifier of the indoor and of the outdoor elements of the	I. Supplier's name or trade mark; II. Supplier's model identifier III. text "EER" with a blue fan and air wave indication IV. the energy efficiency; the head of the arrow containing the

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combination to which the figures quoted below apply. III. The energy efficiency class of the model, or combination. The head of the arrow containing this indicator letter shall be placed at the same level as the head of the relevant arrow. IV. A copy of the eco-label may be added here. V. The indicative annual energy consumption calculated with the total input power as defined in the harmonised standards referred to in Article 2 multiplied by an average of 500 hours per year in cooling mode at full load VI. The cooling output defined as the cooling capacity in kW of the appliance in cooling mode at full load VII. The EER (energy efficiency ratio) of the appliance in cooling mode at full load VIII. The type of appliance: cooling only, cooling/heating. This indicator arrow shall be placed at the same level as the relevant type. IX. The cooling mode: air cooled, water cooled. This indicator arrow shall be placed at the same level as the relevant type. X. Only for appliances with heating capability (label 2) the heat output defined as the heating capacity in kW of the appliance in heating mode at full load XI. Only for appliances with heating capability (label 2) the heating mode energy efficiency class. If the appliance heating capability is provided by a resistive element then the COP (coefficient of performance) shall have the value of 1. XII. Where applicable, noise during standard function, determined in accordance with Directive 86/594/EEC.	energy efficiency class of the appliance shall be placed at the same height as the head of the arrow of the energy efficiency class V. rated capacity for cooling in kW, rounded up to one decimal VI. EER rated, rounded up to one decimal VII. hourly energy consumption in kWh per 60 minutes, rounded to the nearest integer VIII. sound power level for indoor unit expressed in db(A) re1 pW, rounded to the nearest integer *) One of 18 potential labels

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2.2 The Ecodesign requirements

On 18 July 2011, a draft Commission Regulation for implementing Ecodesign requirements for air conditioners and comfort fans was published.

The draft Regulation establishes Ecodesign requirements for the placing on the market of electric mains-operated air conditioners with a rated capacity of less than or equal to 12kW for cooling or heating if the product has no cooling function. It also covers comfort fans with an electric fan power input less than or equal to 125W.

The draft Regulation does not apply to appliances that use non-electric energy sources or air conditioners of which the condenser-side or evaporator-side, or both, do not use air for heat transfer medium.

2.2.1.1 Generic requirements

Refrigerants are addressed under Regulation 842/2006/EC1 in containing, preventing and thereby reducing emissions of fluorinated greenhouse gases covered by the Kyoto Protocol. No specific requirements on refrigerants are set in this Regulation. However, in order to address the risk of direct green house gas emissions from air-conditioning appliances, the minimum efficiency requirements are lowered by 5% for appliances using a refrigerant with 1<GWP≤150 and by 15% for appliances using a refrigerant with GWP=1 (GWP = Global warming Potential).

For air-conditioning appliances, power consumption of standby and off-mode functions is part of the minimum energy performance requirements. Standby and off-mode requirements for single ducts, comfort fans and double ducts below 1kW input power are set on the basis of the Ecodesign requirements of Commission Regulation 1275/2008/EC2.

2.2.2 Specific requirements

The suggested Ecodesign requirements include:

- Two tiers of introduction: 2013 and 2014.
- A bonus for products using low global warming refrigerant fluids.
- Minimum energy performance requirements for:
  split, double duct and single duct air-conditioners.
- The requirements cover the seasonal cooling and heating performances.
- Requirements for maximum indoor and outdoor sound levels.
- Information requirements to be provided in product documentation and on manufacturer websites
- Tolerance levels for verification:
  8% for splits,
  10% for single and double duct

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The following tables show the proposed minimum energy efficiency requirements from 1 January 2013.

Minimum energy efficiency requirements for single duct and double duct air conditioners

	Double duct air conditioners		Single duct air conditioner	
	EERrated	COPrated	EERrated	COPrated
GWP > 150	**2,40**	**2,36**	**2,40**	**1,80**
GWP ≤ 150	**2,16**	**2,12**	**2,16**	**1,62**

Off mode: power consumption shall not exceed **1,00 W**

Standby mode: power consumption shall not exceed **2,00 W**

Indoor **sound power level**: **65 dB(A)**

Minimum energy efficiency requirements for air conditioners, except single duct and double duct air conditioners

	SEER	SCOP (Average heating season)
GWP > 150	**3,60**	**3,40**
GWP ≤ 150	**3,24**	**3,06**

Requirements for maximum sound power level

Rated capacity ≤ 6 kW		6 < Rated capacity ≤ 12 kW	
Indoor sound power level in dB(A)	Outdoor sound power level in dB(A)	Indoor sound power level in dB(A)	Outdoor sound power level in dB(A)
60	65	65	70

The following tables show the proposed minimum energy efficiency requirements from 1 January 2014

	Air conditioners, except single duct and double duct air conditioners		Double duct air conditioners		Single duct air conditioners	
	SEER	SCOP (Average heating system)	EERrated	COPrated	EERrated	COP rated
If GWP of refrigerant > 150 for < 6 kW	4,60	3,80	2,60	2,60	2,60	2,04

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If GWP of refrigerant < 150 for < 6 kW	4,14	3,42	2,34	2,34	2,34	1,84
If GWP of refrigerant > 150 for 6 - 12 kW	4,30	3,80	2,60	2,60	2,60	2,04
If GWP of refrigerant < 150 for 6 - 12 kW	3,87	3,42	2,34	2,34	2,34	1,84

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2.3 Implementation on national level

Note: the following text describes the general implementation of the labelling regulation, with specific description, if there was any special adaption related to the air-conditioning units, in terms of the responsible implementing authorities, specific national activity plans, etc.

Czech Republic

The decree of the Ministry of Industry and Trade of the Czech Republic, n. 337/2011 was approved on November 11, 2011 and entered force on December 20., 2011 for all the product groups except the air-conditioning units. For the air-conditioning units, it enters force January 1st, 2013 and it directly referrers to the Commission Delegated Regulation (EU) No 626/2011 of 4th May 2011 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to energy labelling of air conditioners.

The set of institutional arrangements in terms of market surveillance activities is identical to the rest of the product groups covered by this legislation.

Austria

In July 2011 the decree "Produkte-Verbrauchsabgabenverordnung 2011 – PVV" of the Federal Ministry of Economy, Family and Youth was published (Federal Law Gazette II Nr. 232/2011 of 22 July 2011). This decree was passed on basis of § 8 article 2 and 4 of the "Elektrotechnikgesetz 1992" (Federal Law Gazette Nr. 106/1993) and § 69 article 1 of the "Gewerbeordnung 1994". Article 9 of "PVV" changes the decree of the Federal Ministry of Economy and Labour about the declaration of consumption of air room conditioners (Federal Gazette II Nr. 421/2004).

For air-conditioning units the regulations will be in force from 1st of January 2013.

The set of institutional arrangements in terms of market surveillance activities is identical to the rest of the product groups covered by this ordinance.

Germany

In Germany the revised Labelling Directive (RL 2010/30/EU) has not yet been implemented in national law as of December 2011. As well national German law has not been adapt to the EU

regulation (EG) No. 765/2008 on setting out the requirements for accreditation and market surveillance. Two amendments of law the "ENVKG - Energieverbrauchskennzeichnungsgesetz" and the "EnVKV – Energieverbrauchskennzeichnungsverordnung", that are designed to implement RL 2010/30/EU and to adapt German law to EG No. 765/2008, are in progress. The set of institutional arrangements in terms of market surveillance activities will be regulated then by the revised degree "ENVKG – Energieverbrauchskennzeichnungsgesetz". It is scheduled that these two new laws shall come into force at the end of May 2012.

Poland

In Poland the revised Energy Labelling Directive (2010/30/EU) has not yet been implemented in national law. The proposal of Act on energy connected products labelling was prepared by the Ministry of Economy in November 2011. It is still under discussion between stakeholder sides interested in. In the next step the act will be accepted by European Affairs Committee and directed for Parliament. The adoption in Parliament is expected in the middle of the year 2012.

Latvia

Energy-labelling related legislation:
On December 30th, 2011 the following Regulations of the Cabinet of Ministers on energy labelling were replaced by the binding regulations of the EU:
Nr. 212 "Regulations Regarding Labelling of Household Dishwashers and Information to be Included in Distance Contracts"
On November 20th, 2011: Nr. 208 "Regulations Regarding Labelling of Household Refrigerators and Freezers, and Information to be Included in Distance Contracts"

Regulation of the Cabinet of Ministers Nr.480 "Regulations on procedure of labelling of energy- and other resource consuming products, as well on advertising and monitoring", which is an adaptation document of 2010/30/EU Directive came into force on July 20th, 2011.
Regulation of the Cabinet of Ministers Nr. 803 "Regulations on labelling of household dryers and combined washers and dryers and distant contracts" came into force on October 19th, 2011.

Ecodesign-related legislation:
On June 7th, 2011 Regulations of the Cabinet of Ministers "On main requirements labelling procedure for fluorescent bulb ballasts" was replaced by the binding regulations of the EU.
On September 20th, 2011 Regulations of the Cabinet of Ministers "On evaluation of household refrigerators and freezers energy efficiency compliance" was replaced by the binding regulations of the EU.

Belgium

No specific adaption of the legislation in the Belgian legal system, due to the EU regulation being automatically valid in Belgium as confirmed by the Belgian authorities.

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Greece

The joint ministerial decision No. 12400/1108 of the Ministry of Finance, the Ministry of Development, Competitiveness & Shipping and the Ministry of Environment, Energy & Climate Change was issued on the 2nd of September 2011 and entered into force on the 21st of July 2011 (retrospectively) for all product groups. With this joint ministerial decision the directive 2010/30/EU was transposed into national law. This joint ministerial decision defines the institutional arrangements in terms of market surveillance activities for all product groups that are covered by this legislation.

The air conditioning units are regulated by the Commission Delegated Regulation (EU) No. 626/2011 of May 2011 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to energy labelling of air conditioners. This regulation will enter into force on January 2013.

The set of institutional arrangements in terms of market surveillance activities is identical to the rest of the product groups covered by the joint ministerial decision No. 12400/1108.

Spain

The decree of the Ministry of the Presidency of Spain, n.1390/2011 was published 15 October 2011 and entered force 16 October for all the product groups. This decree indicates the regulation of indication of energy consumption and other resources of the energy related products with the label of the normalised information.

With this decree the directive 2010/30/EU is incorporated to the Spanish legal order.
This mentioned the regulations 1059/2010, 1060/2010, 1061/2010, 1062/2010 and for the air conditioning units the Commission Delegated Regulation No 626/2011.
The set of institutional arrangements in terms of market surveillance activities is identical to the rest of the product groups covered by this legislation.

Italy

In Italy the revised Labelling Directive (2010/30/EU) has not yet been implemented in national law as of December 2011. The relevant President Decree is almost ready and is expected to be adopted and published on the Italian O.J in spring 2012. Currently (1/2012) the energy label is ruled under the "D.P.R. 9 marzo 1998, n. 107, Regolamento recante norme per l'attuazione della direttiva 92/75/CEE concernente le informazioni sul consumo di energia degli apparecchi domestici" published on the Italian OJ n. 89 of 17 April 1998 transposed into the National legislation the previous framework Directive 92/75/EEC.

Following the provision of EU Regulation No. 765/2008 on setting out the requirements for accreditation and market surveillance, the Ministry for Sustainable Development has been appointed as the national market surveillance Authority.

Croatia

Ministry of Economy is the competent authority that has fully transposed Directive 2010/30/EU through the Regulation on the indication by labelling and standard product information of the

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consumption of energy and other resources by energy-related products in Croatian law (NN 101/2011) for household appliances (dishwashers, washing machines, refrigerating appliances and TVs). Croatian national legislation for air conditioning labelling has not yet been changed. The labelling of air conditioners is under the old regulations NN 130/07 which was transposed from EU directive 2002/31/EC. When implementing directives enter into force in EU it will be transposed into Croatian law.

The set of institutional arrangements in terms of market surveillance activities is identical to the rest of the product groups covered by this ordinance.

UK

The decree "The Energy Information Regulations 2011" of the Department for Environment, Food & Rural Affairs, number 1524/2011 was approved on 22nd of June 2011 and entered force on 20th of July 2011 for all the product groups except the air-conditioning units. All product specific regulations have now been consolidated into a single overarching statutory instrument – so this is now the only energy labelling statutory instrument.

The regulations for air-conditioning units will be enforced from the 1st of January 2013.

The National Measurement Office (NMO) is now the market surveillance authority for suppliers, having replaced Trading Standards who now only maintain responsibility for point of sale labelling by retailers.

Come on Labels has created a partnership between Severn Wye Energy Agency and multiple organisations across the UK to promote the new energy labelling leaflet produced by Severn Wye. For example the Energy Saving Trust is supporting Severn Wye's marketing and promotional activities by promoting the energy labels leaflet to households and consumers on their website:
http://www.energysavingtrust.org.uk/In-your-home/Products-for-your-home/Appliances-saving-energy

Malta

Legal Notice 337 of 2011 entitled "Indication by Labeling and Standard Product Information of the Consumption of Energy and other Resources by Energy Related Products Regulations" has been approved as part of the Product Safety Act (CAP. 427) and implements the requirements of Directive 2010/30/EC.[1] The regulations contained in this legal notice for the different product groups came into force on 20th July 2011. At the same time, the regulation entitled "Energy labelling of household air-conditioners (Implementing Measures) Regulations, 2011"[2] although published in July 2011 is currently not making reference to the new Commission Delegated Regulation No 626/2011/EU. The regulation references the old requirements of Commission Directive 2002/31/EC of 22 March 2002 implementing Council

[1] L.N. 337 of 2011 - PRODUCT SAFETY ACT (CAP. 427) - Indication by Labelling and Standard Product Information of the Consumption of Energy and other Resources by Energy Related Products Regulations, 2011 http://www.doi.gov.mt/EN/legalnotices/2011/08/LN%20337.pdf

[2] L.N. 338 of 2011 - Subsidiary legislation 454.75 (e)

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Directive 92/75/EEC with regard to energy labelling of household air-conditioners. It is expected that an updated legal notice reflecting the Delegated Regulation will be published in 2012.

The set of institutional arrangements in terms of market surveillance activities is identical to the rest of the product groups covered by this legislation.

Portugal

In May 2011 the Ministry of Economy, Innovation and Development issued the decree no. 63/2011 for all labeled product groups except the air-conditioning units. On July 2011 the decree entered into force.

The air conditioning units are regulated by the Commission Delegated Regulation (EU) no. 626/2011 of May 2011 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to energy labelling of air conditioners. This regulation will enter into force on January 2013.

The set of institutional arrangements in terms of market surveillance activities is identical to the rest of the product groups covered by this legislation.

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

www.come-on-labels.eu

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www.come-on-labels.eu

Come on Labels project members – contacts

Czech Republic – project coordinator — **SEVEn**, The Energy Efficiency Center
www.svn.cz

Austria — **Austrian Energy Agency**
www.energyagency.at

Belgium — **Brussels Energy Agency**
www.curbain.be

Croatia — **ELMA Kurtalj d.o.o**
www.elma.hr

Germany — **Öko-Institut e.V., Institute for Applied Ecology**
www.oeko.de

Great Britain — **Severn Wye Energy Agency**
www.swea.co.uk

Greece — **Center for Renewable Energy Sources and Saving**
www.cres.gr

Italy — **ENEA** – Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile
www.enea.it

Latvia — **Ekodoma, Ltd**
www.ekodoma.lv

Malta — **Projects in Motion**
www.pim.com.mt

Poland — **KAPE**, Polish National Energy Conservation Agency
www.kape.gov.pl

Portugal — **QUERCUS** – Associação Nacional de Conservação da Natureza
www.ecocasa.pt

Spain — **ESCAN, S.A.**
www.escansa.com

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