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Umwelt Bundes Amt
For our Environment

EU bans polluters

Inefficient air conditioners to be withdrawn from market starting 2013

The EU aims to drastically cut the power consumption of air conditioners. Inefficient units will be gradually withdrawn from the market as of 2013. At the same time, the EU is introducing an improved energy labelling system by which consumers will have a better idea of how much electricity their units consume. Jochen Flasbarth, President of the Federal Environment Agency (UBA), applauds the new EU regulations and says, "Energy efficiency and energy saving are the keys to the switch to an climate-friendly energy supply system. It is quite impressive that the use of energy-efficient air conditioners alone could make the output of about three coal power plants in the EU unnecessary." Since air conditioners are becoming more and more popular, their power consumption could more than double by 2020 without introduction of these regulations. The EU has thereby initiated steps to counteract this trend.

The air conditioners which have been produced up to now consume a lot of electricity and emit climate-damaging refrigerants, both of which pollute the environment with greenhouse gases. In Germany and in the EU, sales volume has increased sharply since 2005. Some 100,000 – 140,000 air conditioner units are sold in Germany every year. The sales volume in Italy and Spain is about ten times that amount. As a result, electricity consumption for cooling and refrigeration is on the rise, with consumption in Germany at 8% of overall use in 2008. More efficient air conditioners are already available on the market, especially the type that operate with the climate-friendly refrigerant propane. But one can very often take a few simple steps to make such a device unnecessary. By cross-ventilating at night, closing windows during the daytime and keeping the blinds drawn, rooms can be cooled down. Heat sources such as electrical devices and lamps should only be switched on when needed. Fans can also be useful, and they use less power. If an air conditioner should nevertheless be necessary, UBA recommends purchasing units in high energy efficiency classes such as the EU now also stipulates in its regulations.
A single air conditioner with a 7-kilowatt (kW) performance can use up to 900 kilowatt hours (kWh) a year, whereas a small single duct unit with a 2.2 kW performance uses some 400 kWh. The annual costs incurred are € 225 and € 100, respectively. The new EU regulations affect air conditioners with a cooling or heating capacity of 12 kilowatts. These are mainly so-called split air conditioners that produce cold air outside which is then channelled to the building's interior. As of 1 January 2013, the labelling system will have a range of A - G, which will gradually be extended to include up to A+++ by 2019 (see Table 1 and figures in appendix). Air conditioners that meet

these requirements use less electricity by automatically adjusting their output to actual cooling needs while in operation (see Table 2 in the appendix). The EU regulations also apply to single and dual duct air conditioning units, which are worse in terms of energy consumption. The new energy consumption labelling system will allow the most efficient units to be labelled as Efficiency Class A+++ as of 1 January 2013. Another new step will be introduced in 2014. Without these regulations the power consumption of air conditioners in the EU could rise from its 30 terawatt hours (TWh) in 2005 to up to 74 TWh in 2020. Through regulation, that increase is expected to be up only 63 TWh.
The energy label also shows information on noise emissions. UBA believes the limit values for noise in the Ecodesign Directive are not especially ambitious. It therefore recommends that consumers be mindful when purchasing a unit that its inside noise levels are no greater than 45 dB(A), and 55 dB(A) to the outside.
As of 2013 the power consumption of comfort fans (tabletop, ceiling or pedestal) may not exceed 1 watt, with a further reduction to 0.5 watts after 2014. The devices' energy efficiency during operation must be indicated.

Further information and links

EU regulations for air conditioners

Commission Delegated Regulation (EU) No 626/2011 of 4 May 2011 with regard to energy labelling of air conditioners: German / English

Commission Regulation (EU) No 206/2012 of 6 March 2012 with regard to ecodesign requirements for air conditioners and comfort fans: German / English

Figures: Revised energy consumption labelling as of 1 January 2013 for air conditioners (left), for air conditioners with heating and cooling functions (middle), for single duct air conditioners (right)

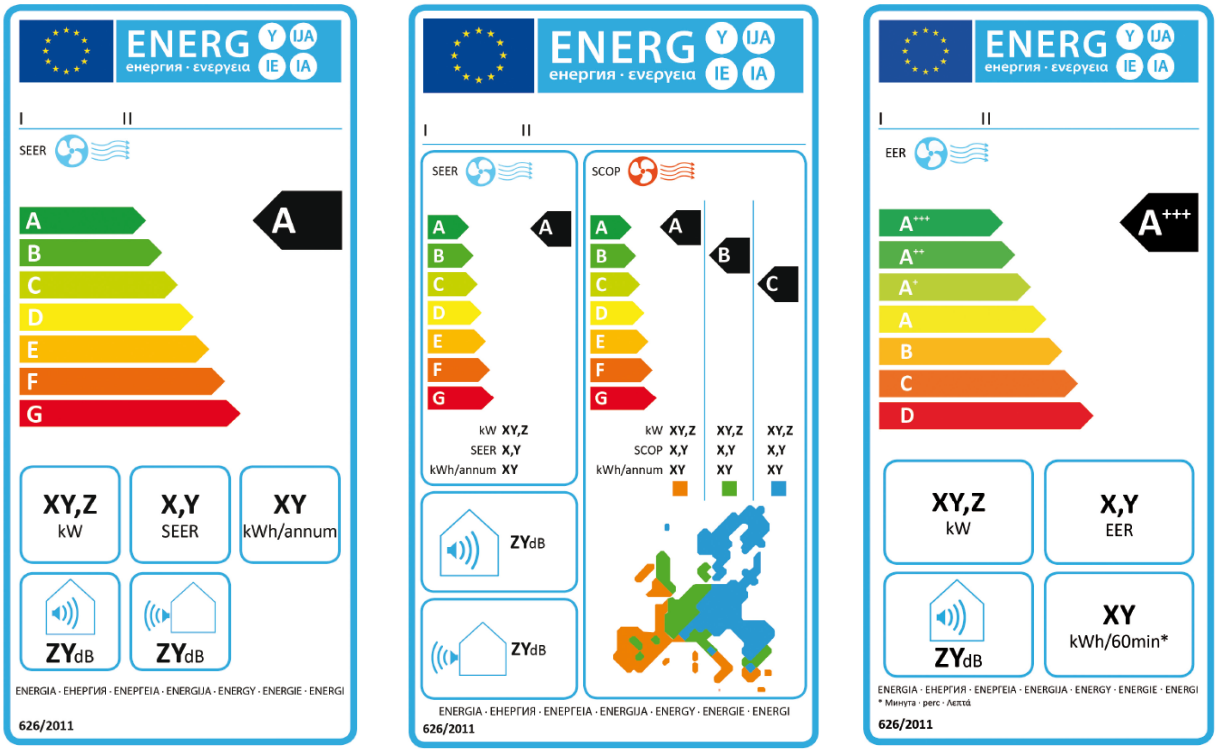

Table 1: Introduction of revised energy consumption labelling for air conditioners as per EU Directive 2011/626/EU

Effective date	Air conditioners	Single and dual duct air conditioners
1.1.2013	A...G	A+++...D
1.1.2015	A+...F	
1.1.2017	A++...E	
1.1.2019	A+++...D	

Table 2: Minimum requirements of EU Directive 2012/206/EU for air conditioners and corresponding efficiency classes in EU Directive 2011/626/EU

Effective date	Refrigerant	Air conditioners		Single duct air conditioners		Dual duct air conditioners	
		(SEER)	(SCOP)	(EER)	(COP)	(EER)	(COP)
1.1. 2013	GWP > 150	D (3.60)	A (3.40)	B (2.40)	C (1.80)	B (2.40)	C * (2.36)
	GWP ≤ 150	E (3.24)	B * (3.06)	C (2.16)	C (1.62)	C (2.16)	D (2.12)
1.1. 2014	GWP > 150	< 6 kW: B (4.60) ≥ 6 kW: C (4.30)	A (3.80)	A (2.60)	B (2.04)	A (2.60)	B (2.60)
	GWP ≤ 150	< 6 kW: C (4.14) ≥ 6 kW: D (3.87)	A (3.42)	B * (2.34)	C (1.84)	B * (2.34)	C * (2.34)

* These minimum requirements are 0.06 points or less below the limit of a given efficiency class and are therefore rounded to the next higher efficiency class. Units in less efficient classes will occasionally be available on the market.
GWP: Global Warming Potential of contained refrigerant. SEER: Seasonal Energy Efficiency Ratio. EER: Energy Efficiency Ratio. SCOP: Seasonal Coefficient of Performance. COP: Coefficient of Performance.

Background: Ecodesign and labelling in the EU
Directive 2010/30/EU allows the EU Commission to enact EU regulations governing the energy consumption labelling and other product properties of individual product groups. The Ecodesign Directive 2009/125/EC enshrines into European law the principle of environmentally fair design of products that consume energy or influence the energy consumption of other products. The Commission can then adopt minimum requirements for individual product groups; these regulations enter into force immediately. The Act on Ecodesign Requirements for Energy-using Products and Energy Labelling Act enact the basic requirements of both these directives in German law.

See also:
Ecodesign Directive (Federal Environment Agency)
Ecodesign requirements for energy-using products (Federal Institute for Materials Research and Testing)

Dessau-Roßlau, 7 June 2012