

24 November 2010

## **EUP LOT11: JOINT POSITION PAPER ON FANS REGULATION**

### **1- INTRODUCTION - PURPOSE OF THE PAPER**

Based on the draft Regulation with regard to Ecodesign requirements for fans, the affected industry sectors find a number of unclear elements and potential issues. This paper contains CECEC, DIGITALEUROPE, EPEE and EUROVENT position related to this draft regulation. Three main points are addressed:

1. The need for a Commission's guidance document on the criteria and calculations related to the Ecodesign and information requirements.
2. The inconsistency of requirements for different fan types addressed in the draft regulation (e.g. VSD versus constant power drive and impellers versus fans) will either ban energy efficient fan solutions from the market or incentivize non-EU-based manufacturing of fans, which should not be the outcome of this regulation.
3. The announced revision of the fan regulation should carefully take into account the applications of fans in other equipment, specifically compatibility with the application (size, noise constraints) and cost price. In addition, the announced extension of the scope to fans driven by motors with input power < 125W should take into account that a large number of these fans will soon be regulated for example for Lot 10, air conditioners below 12 kW.

### **2- DETAILED LIST OF INTERPRETATION ISSUES AND UNCLARITIES**

We (the membership of the associations) have identified the following list of unclear elements with the draft regulation as adopted by the regulatory committee.

#### **2- 1- DoC**

Article 1, clause 1: (subject matter) "the regulation establishes Ecodesign requirements for the placing on the market or putting into service of fans, including those integrated in other ErP [...]". It looks as if a product that is imported into the EU with a fan that meets the technical specifications of the scope inside is also covered. In this case, the fan is supplied to the OEM outside the EU, so it is not placed on the EU market as a fan. Instead, the product (with its CE-DoC) is placed on the EU market. In this case, the fan would have to meet the technical requirements. The information requirements and the CE-DoC for such a fan are not clearly prescribed by the regulation, because the fan is sold and bought outside the EU, where the CE-DoC has no legal meaning.

*Proposed Clarification: it should be clarified that the regulation applies to all fans (meeting the technical specifications) that are integrated in other ErP's that are placed on the EU market. This clarification should address both the technical requirements and the information*



and DoC requirements. In this case the OEM of the product that integrates a fan should provide a DOC indicating compliance with the fan regulation. Of course this does not mean that a declaration must be requested from the fan supplier. The fan supplier will need to state that the fan supplied is compliant. The OEM placing the ErP with integrated fan on the EU market is responsible for having the required technical documentation.

## 2- 2- Product definitions

### 2- 2- 1- Lack of definition for “information technology products”

Article 2, sub clause (17): there is no definition of “information technology products”. The previously published Standby Regulation (EC) 1275/2008 made a reference to the definition that is also used in harmonised standard EN55022 “Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement”. It is possible that fans covered by the Fans regulation are also found in products (e.g. large scale production printers) that are similar to information technology equipment but not covered by EN 55022, but instead by the EMC standard for industrial equipment EN 61000-6. It would be difficult to add “industrial equipment” to the list of exemptions in this clause, because that would represent a major loophole.

IT-Industry can understand that the regulation will not contain an extensive definition of “information technology products”. It is therefore proposed to provide the following guidance:

*Information Technology Products are known in different types of products, differing widely in size and application. Fans in scope of the regulation are found in the more professional types of information technology equipment such as servers, data centres and highly productive office printers and industrial printers. For such products, the fan ecodesign regulation will become effective in 2015. Manufacturers of such equipment have until 2015 to ensure that the fans in their products that are in scope of the fan ecodesign regulation are made compliant with the requirements.*

DIGITALEUROPE can provide the Commission with a number of concrete product examples in order to illustrate this proposal.

### 2- 2- 2- Clarification for exemption of products with a sole electric motor of 3 kW or less

The following exemption has been foreseen in the proposal for a measure but it is unclear. Article 1, clause 2 states:

*The regulation does not apply to fans integrated in appliances with a sole electric motor of 3 kW or less where the fan is fixed on the same shaft used for driving the main functionality;*

This clause should only apply to products where the main functionality is other than ventilation, and currently this is not specified. Now, the exemption clause is open for abuse. For Products up to 3kW where the main functionality is ventilation, where the fan is connected on the same shaft of the motor are apparently exempted.

We propose to clarify that the exemption in article 1, clause 2, is related to recital (11):



*Small fans (indirectly) driven by an electric motor between 125 W and 3 kW which primarily serves other functionalities than ventilation are not within the scope. (For illustration a small fan to cool the electric motor in a chain saw is not within the scope, even if the motor of the chain saw itself (which is also driving the fan) is above 125 W.)”*

### **2- 2- 3- Clarification of household for exemption of air conditioners**

Article 2 subclause 17: For the exemptions provided for air conditioners, there is a need to clarify the term ‘household’. We feel the term is very vague and subject to interpretation. Also, this is not consistent with ENER Lot 10 which limits its scope to air conditioners up to 12 kW. Hence, the scope of ENER Lot 10 can both refer to household as well as commercial applications, which makes its scope broader than compared to ENER Lot 11.

The exemption in Lot 11 art 2 (17) reads:

*"Indoor units of **household** air conditioning products and indoor **household** air conditioners, ≤ 12 kW maximum airco output power."*

The Scope of ENER Lot 10 is proposed as follows:

*"This Regulation establishes eco-design requirements for the placing on the market and putting into service of electric mains-operated air-conditioning appliances with a design load of ≤ 12 kW for cooling – or heating, if the product has no cooling function - and comfort fans with an electric fan power input ≤125W."*

We propose to clarify “household” as follows:

*"All indoor units below 12 kW airco output power connectable to outdoor units below 12 kW airco output power are considered as “indoor units of household air conditioning products ≤ 12 kW maximum airco output power."*

### **2- 3- Clarification on putting into service**

Fans have to comply with the requirements when placed on the market or put into service.

It should be made very clear when placing on the market or putting into service should be considered upon assessing compliance of fans and fans integrated in products. Industry has taken notice of the draft FAQ proposed by the Ecodesign ADCO on this issue and fully supports this. We propose to clarify as follows (or refer to the following clarification):

*The term "putting into service" is used, as the EU legislation also needs to cover products, which are "physically" never placed on the market, but installed directly at the end-user's place. The sentence "be placed on the market and/or put into service", creates the impression that placing on the market and putting into service are cumulative, i.e. that there are two different moments from when on a product has to comply, which is wrong. The way the concepts should be understood is that "placing on the market" (making a product available for the first time on the EU market) and "putting into service" (first use of a product for its intended purpose by an end-user in the EU) refer to two different 'moments' in the process of bringing a product to the market; compliance for the 'entry' into the market is required only once based either on the moment when the product is placed on the market or*



*when it is put into service. Accordingly, the Article 3 of the Ecodesign Directive should be understood as "products covered by implementing measures may be placed on the market or put into service, or both, only if they comply with those measures and bear the CE marking in accordance with Article 5." A product has to comply with the requirements for CE marking from the moment that it is placed on the market. Only where a product is "not placed on the market" in the literal meaning, the moment of compliance is the putting into service. Furthermore, the EU legislation is not retroactive. Products legally placed on the market can stay on the market (i.e. in the distribution chain) and still be sold even if the legislation changes in the meantime; products legally placed on the market can be sold to the end-user and can also be put into service even if the legislation has changed in the meantime.*

Added to all this in order to further clarify the situation for manufacturers that have to comply with the fan regulation, we propose to include the following examples of 'putting into service':

- Manufacturers manufacturing HVAC products, containing fans, for own use in their factory. The HVAC product will not be placed on the market, but will be used on the work floor. When the product is used for the very first time, this is deemed as the moment of putting into service.
- A fan which is manufactured and immediately integrated in a building is put into service.

## **2- 4- Clarification on product information requirements**

Annex I, section 3 "Product information requirements". It is unclear from the text if and how information on fans integrated in products should be provided. If we take the text literally, and when presuming that for fans incorporated in other ErP the fan information is of limited relevance for the total product, it can be concluded that no information requirements apply for fans integrated in products. The obligation to provide public information is limited to "free access websites of manufacturers of fans".

*We propose to clarify that information on fans should only be provided by fan manufacturers according to Annex2, section 3, clauses 1(a) and (b). OEM's who integrate fans covered by this regulation in their products, should keep the technical information on these fans available for market surveillance, in order to demonstrate conformity with the requirements.*

*Also, spare parts dedicated for specific products do not require any additional documentation. The documentation requirement is already provided for the product integrating that fan.*

## **2- 5- Unclear element re. optimal efficiency of VSD**

When using a variable speed drive there is an ambiguity on how the 'optimal energy efficiency point' is determined or defined. When the manufacturer can choose the speed the fan runs at rather than the typical power level or another parameter, the 'optimal energy efficiency point' becomes quite vague.

Proposed clarification: *the highest efficiency point of the fan should be used to determine whether the fan used is in scope of the regulation, and if it is compliant with the requirements in the regulation.*

Justification: The efficiency of the VSD compared to the fan efficiency is quite high. Therefore fan efficiency is the most energy relevant part. That means the selection by optimum fan efficiency is sufficient. This is in line with the calculation prescribed in the regulation and the method can be used by both fan manufacturers and OEMs integrating fans in products. Alternatively, using the nominal point of the fan would create too much discussion, since the nominal point for fan manufacturers would be different from the one specified by OEMs integrating fans in products due to the difference of environment in which the fan operates.

## 2- 6- On using EN standards

EN standards are to be used to assess conformity with the requirements of the Regulation. It is logical that for this purpose CEN/CENELEC are considering ISO 5801 (Industrial fans - Performance testing using standardized airways) and ISO 5802 (Industrial fans - Performance testing in situ) as the basis for EN standards. Thus, it is proposed to clarify that while no EN standards are in place, the manufacturer should use these standards to test for conformity of the fans.

## 3- SOME ISSUES, PROBLEMS, OPPORTUNITIES LIKELY TO ARISE IN THE FUTURE

### 3- 1- Disparity in requirements for complete fans and impellers

Annex II, section 3.2 (fans supplied as “not final assembly”: The over-all efficiency  $\eta_e$  is calculated on the basis of a number of assumed efficiencies and compensation factors that are so low that it is unlikely that any separately supplied impeller for some fans (in the lower power ranges of the scope of the regulation) will meet the requirements as put in Annex 1 section 2: the framed example calculation shows the significant disadvantage for individual impellers.

For an impeller used in a centrifugal forward curved fan:

- For a fan with  $P_e = 150W$ , the motor efficiency  $\eta_e$  is 0.56 according to Annex 2. Realistic motor efficiencies are between 0.70 and 0.75.
- For fans with a transmission between the motor and the impeller, the transmission can be chosen such that the compensation factor  $C_m$  is 1 (using appropriate cogwheels). The imposed  $C_m$  in the regulation is 0.9.
- The resulting efficiency  $\eta_e$  according to the regulation, for an impeller with its optimal efficiency point at 150W input power, and a realistic  $\eta_r = 0.5$ , assuming a variable speed drive would be:

$$\eta_{e, \text{regulation}} = 0.5 \cdot 0.56 \cdot 0.9 \cdot 1.088 = 0.275$$

(required: 0.375 tested with duct fitted to inlet and outlet).

Using a realistic value for the motor efficiency and a well dimensioned transmission, the real  $\eta_e$  will be:

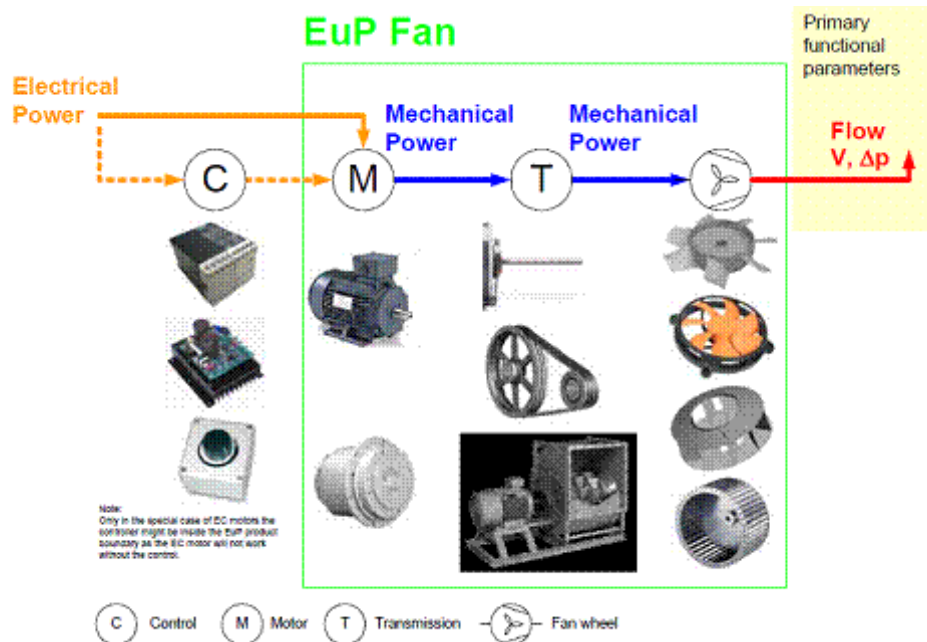
$$\eta_{e, \text{real}} = 0.5 \cdot 0.75 \cdot 1 \cdot 1.088 = 0.3808$$

The framed example shows that an impeller placed on the market (e.g. sold to an OEM who designs its own fan by combining the impeller with a motor, a transmission and a house integrated with ducts) faces much more strict requirements than a fan placed on the market as a final assembly. This could have the effect to force OEM's to buy fans as final assemblies, while designing fans from components is significantly less expensive and equally energy efficient. Thus, using default values may be counterproductive and may have negative effect to the manufacturers of impellers, even if the default values are realistic.

Industry proposes a practical solution to this issue, keeping the essential intention of the regulation intact. We propose to bring the responsibility of CE marking/conformity to the point where all the necessary fan components [impeller, motor, transmission, (VSD)] are put together into a complete fan as defined in the regulation. This point could be e.g. an OEM (e.g. Heat pump manufacturer) or a fan manufacturer who puts complete, "ready to operate" fans on the market.

This would mean that the OEM has to be in the position to prove/test that assembled fan complies with the regulation. Consequently ANNEX II, paragraph 3.2 would not be needed.

Following this proposal, the responsibility for conformity is upon the operator where the fan gets a functional unit that will be placed on the EU market (or put into service as discussed in section 2-3). The operator that is indeed assembling the fan than can choose whatever impeller-motor-controller-transmission will be used. At the end of the day the fan has to comply with the requirements for the complete assembly as shown in the graph (graph from "Fraunhofer Study for Lot11, Fans).



### 3- 2- Spare Parts

Industry understands that the Regulation shall not apply to fans which were:

- *placed on the market before 1 January 2015 as replacement for identical fans integrated in products which were placed on the market before 1 January 2013;*

Equipment manufacturers have the responsibility to supply replacements (spare parts) for at least 10 years after the last production of their equipment. Therefore, it is not possible to fulfill the implications of the above requirement: it cannot be guaranteed that “redesigned” replacements fit into the sub- or end products delivered before 1 January 2013.

Manufacturers need the freedom to purchase and supply original replacements far beyond 1 January 2015 in order to fulfill their product responsibility and safeguard product reliability in view of the existing European safety requirements (for example EMC).

### 3- 3- Review of the regulation

Recital 14) “A review of this Regulation is foreseen not later than four years after its entry into force. The review process may be initiated earlier if evidence reaches the Commission that warrants this. The review should in particular assess the setting of technology independent requirements, the potential of the use of variable speed drives (VSD) and the necessity of the number and scope of exemptions as well as the inclusion of fans below 125 W electric input power.”

The options for the review are described in the recital and art 7. They include:

- eliminating exemptions
- extending the scope to fans with input power < 125 W.
- reducing the number of fan types in order to reinforce competition on grounds of energy efficiency for fans which can fulfil a comparable function.

Industry has the following concerns regarding the announced review:

- It should be noted that the current exemptions often exist for good reasons that may not change within 5 years from now.
- Further it should be noted that many of the fans with input power < 125W are already covered in the draft regulation for Air conditioning Equipment *<please correct if stated wrongly>*. It is undesirable if not counterproductive to regulate the same fan types twice.
- Finally, it should be noted that the reasons for existence of fan types are mostly functional by nature: we know of fan types that are less energy efficient than others, however these types are not available in the sizes required for their applications. Other examples include a difference in sound production: more energy efficient fans for some applications are also producing more sound, which is not acceptable for users. Now these current issues may or may not be resolved in 5 years from now: technological developments of fan properties are ongoing but the timeline of their introduction cannot be pinpointed at this very moment.

Industry urges the European Commission to mandate thorough preparatory studies for the revision, where the above issues are addressed and possible solution scenarios are investigated for their feasibility. From industry's side, full technical explanation of the issues and possible solutions can be given by the different industry sectors affected by the regulation, which see the need to cooperate constructively in order to achieve energy efficient solutions that are competitive in the world market and compatible with the user requirements for products in which fans are used.



## ABOUT DIGITALEUROPE

**DIGITALEUROPE** is the pre-eminent advocacy group of the European digital economy acting on behalf of the information technology, consumer electronics and telecommunications sectors. We are dedicated to improving the business environment, and to promoting industry's contribution to economic growth and social progress in the European Union.

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**The European Partnership for Energy and the Environment (EPEE)**; represents the refrigeration, air-conditioning and heat pump industry in Europe. Founded in the year 2000, EPEE's membership is composed of 40 member companies and national associations across Europe realising a turnover of over 30 Billion Euros and employing more than 200,000 people in Europe. As an expert association EPEE is supporting safe, environmentally and economically viable technologies with the objective to promote a better understanding of the sector in the EU and to contribute to the development of effective European policies.

For more information please visit: [www.epeeglobal.org](http://www.epeeglobal.org)

## ABOUT CECED

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Direct Members are Arçelik, Ariston Thermo Group, BSH (Bosch und Siemens Hausgeräte), Candy Group, De'Longhi, Electrolux AB, Fagor Group, Gorenje, Liebherr, Indesit Company, Miele, Philips, Groupe SEB and Whirlpool Europe. CECED's member associations are present the following countries: Austria, Belgium, Czech Republic, Denmark, Estonia, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## ABOUT EUROVENT

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