

JRAIA Position Paper

VHK Discussion document

Review Commission Regulation (EU) No. 327/2011(fans)

January 2015

This paper summarises JRAIA's comments related to the latest VHK discussion document, published on 21st November. JRAIA welcomes some of the points in the latest documents. However, we still would like to raise some concerns with regards to the following points.

1. Double regulation should be avoided; "Fans incorporated into products" should be excluded from the scope.
2. Exclusion of "not-final-assembly" from the regulation is welcomed.
3. The existing category of a centrifugal fan should be maintained.

1. Double regulation should be avoided; "Fans incorporated into products" should be excluded from the scope

JRAIA has already presented the arguments against double regulation in the joint industry position paper of November 2014 (see Annex1). By considering the space and time limitation, we would like to emphasise the following additional points only in this paper.

In the 2nd paragraph of the explanation notes on page 3 of Discussion document Review Commission Regulation (EU) No. 327/2011 (fans) 21 Nov. 201, VHK commented " However, when the EC and RegCom decided to approve the current Regulation 327/2011 it was evident and explicit that they intended a scope of '..fans, including those integrated in other energy-related products as covered by Directive 2009/125/EC.' (Art.1, 1). Also the Least Life Cycle Cost (LLCC) target

level was determined in full awareness that it would have an impact on the price of the fan and thus on the price of the final product.”

However, according to the final report, i.e. Task 8 report (EuP Lot 11: Fans for ventilation in non residential buildings Final Report by Fraunhofer Institute Systems and Innovation Research) issued in April 2008, HVAC products were out of scope and the ErP preparatory study has not been done. From the following descriptions in the final report, it is clear that the sufficient study such as impact analysis on LLCC has not been done regarding “Fans incorporated into products”. Principally, regulation (its scope, the details of regulation, et.al.) should be determined after the sufficient study of its impact has been completed. Therefore, we would like to comment that “Fans incorporated into products” such as those for HVAC products should be excluded.

(1) 2nd paragraph on Page 1 of 204

1. Product Definition, Standards, Legislation

“Related product categories concerning fans in this context (serving different purposes) are packaged air-conditioning systems, split systems, multi-split systems, central-based air-conditioning systems, fan coils, air handling units and chillers. Some of these products are not within the scope of lot 11, but are dealt with in lot 10 (air-conditioning and ventilation in residential buildings). The product definition of lot 10 includes roof fans, extraction fans, window fans, wall fans and hood fans as products to be considered.”

(2) Middle of 3rd paragraph of 1.1.3 Fan types for building ventilation (Page 17 of 204)

“AHUs are connected to the air distribution system of the building. As the scope of this study is restricted to ventilation only, AHUs, which are also used for heating an air conditioning, will not be further analysed within this study.”

2. Exclusion of “not-final-assembly” from the regulation is welcomed.

JRAIA welcomes the proposal to exclude the "not-final-assembly" from regulation. In clause 1 of their proposal at Article 2 "Definitions", VHK mentioned the definition of fan as shown below. It makes the definition clear and the confusion can be avoided.

1. ‘Fan’ means a configuration of impeller, stator, electric motor, transmission or direct drive and possibly a variable speed drive, intended for the continuous displacement of gas with at its bep an electric input power between 125 W and 500 kW (≥ 125 W and ≤ 500 kW), a pressure-increase ratio lower than 1.1 and an output air velocity lower than 51,5 m/s, and which is an axial fan, centrifugal fan, cross flow fan, mixed flow fan or jet fan.

3. The existing category of a centrifugal fan should be maintained

In the discussion document, “Review Commission Regulation (EU) No. 327/2011 (fans)”, the newly proposed simplified category was mentioned. However, we would like to raise the concern about it and would like to suggest to apply the previous category from the following reasons.

In the Annex I of Discussion document, “Review Commission Regulation (EU) No. 327/2011 (fans)” issued on 21st of November 2014, VHK describes as follows. A centrifugal fan is categorized into 3 types, i.e. (1) centrifugal forward curved fan and centrifugal radial bladed fan”, (2) centrifugal backward curved fan without housing, and (3) centrifugal backward curved fan with housing” in the existing regulation. However, the unified (single) categorisation of centrifugal fan was proposed in Table 1 “Minimum energy efficiency requirements per fan type” of 2. Fan energy efficiency requirements in the latest discussion document.

Furthermore, the highest target energy efficiency in the current categorisation was proposed as the new target energy efficiency in the newly proposed categorisation, and the target energy efficiency was proposed to increase step by step based on the highest target energy efficiency in the current categorisation.

If the new proposal is applied, “Centrifugal forward curved fan” (hereinafter, described as “CFC fan”), the target energy efficiency will drastically increase in 2018. It would not be possible for “CFC fan” to satisfy the target in 2018 technically and “CFC fan” might not survive in market anymore.

We agree technically that “CFC fan” is less energy efficient compared with “Centrifugal backward curved fan” (hereinafter, described as “CBC fan”). However, the advantage in the other technical respects, e.g. material efficiency must be considered. When “CFC fan” (See Fig. 1 (1)), which is widely used in HVAC products, is replaced by “CBC fan” (See Fig. 1 (2)), the dimension (diameter or height) of “CBC fan must be approximately twice to obtain the equivalent flow

rate under the same noise radiation. The fan dimension increases significantly. This leads to the significant increase of material resource consumption and the decrease of transportation efficiency. These results may be against the principle of ErP regulation. According to the precise technical study carried out by one of our members (See Fig. 2), the height and the length will increase by at least 50mm and the reduction of power consumption will not be obtained.

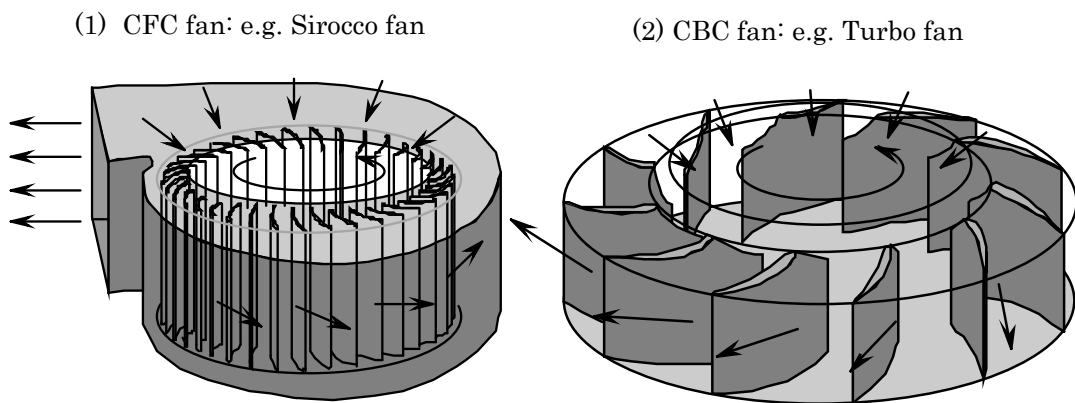


Fig. 1 Examples of centrifugal fan

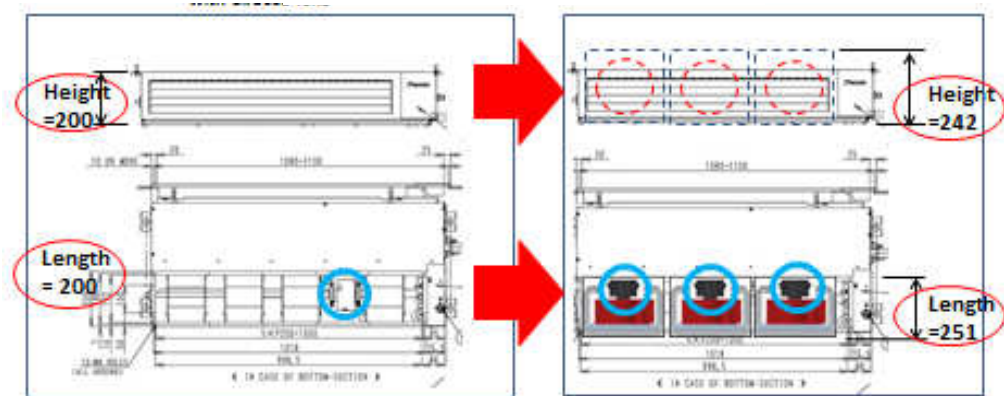


Fig. 2 Redesign study: ceiling AC case

We also would like to mention another disadvantage when “CFC fan” cannot be applied in market. Increase of product dimension reduces the flexibility of end-user’s selection. For example, some end-user must give up the installation or

replacement of duct type air-conditioner due to the increased noise and the limitation of ceiling space because the product dimension increases drastically. When CBC fan is applied to replace CFC fan, the fan speed of CBC fan must be about twice of that of CFC fan in order to obtain same flow rate and to keep the fan dimension. In the case of a ceiling air-conditioner, the noise level will increase from 40 dB(A) (the noise level in a library/at the residential area in the suburb) up to 58 dB(A) (the noise level in a automobile running on city roads/in the living. End-users will need to give up using it for meeting rooms (See Fig. 3).

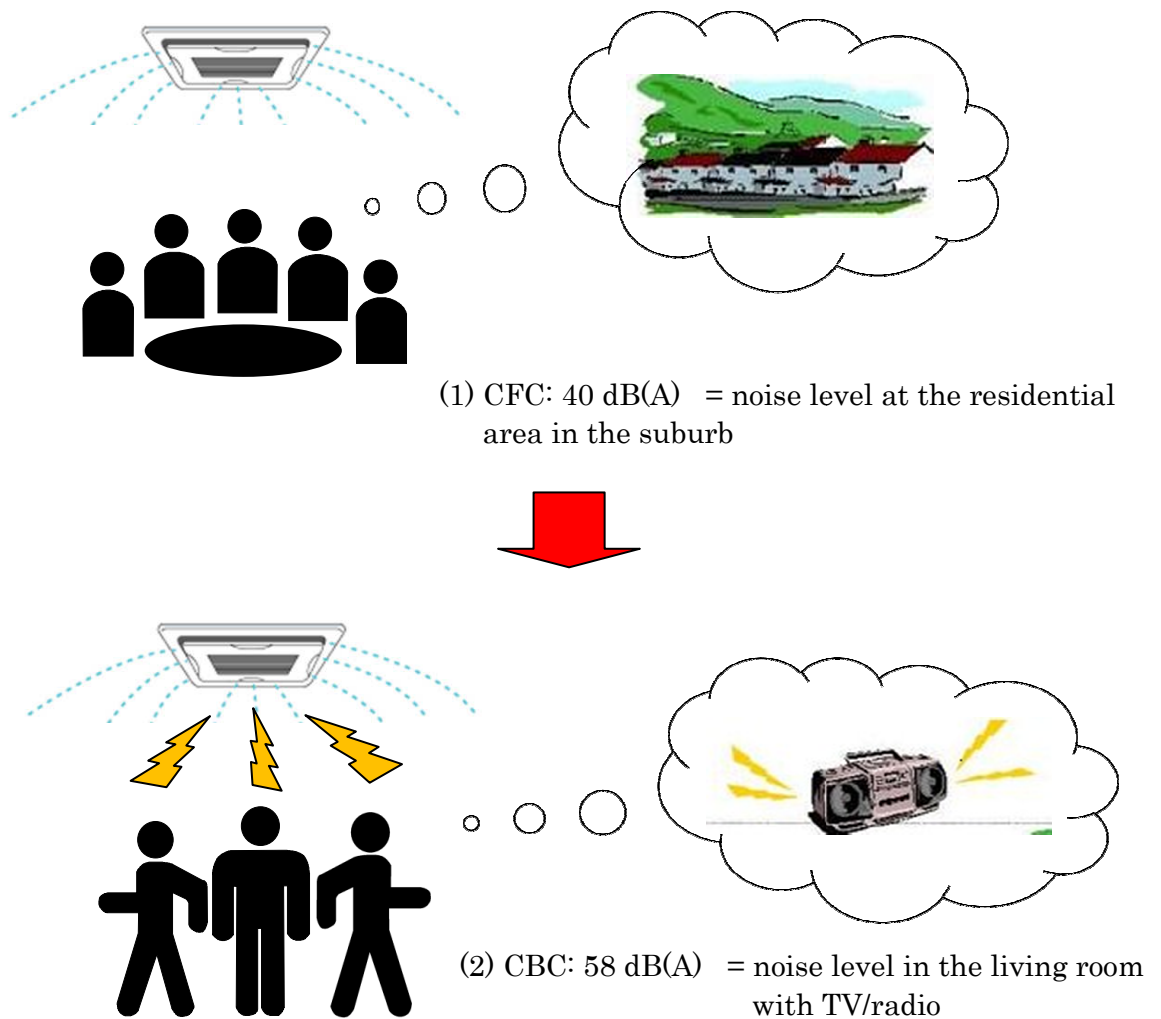


Fig. 3 Negative impact of CBC fans from noise point of view

We suggest that the accurate study such as LLCC analysis is needed before the application of the newly proposed categorisation.

Therefore, JRAIA suggests to maintain the current categorisation of a centrifugal fan (3 types) and to determine the possible but challenging target energy efficiency, respectively. The deleted definition of “CFC fan” and “CBC fan” should be also recovered.

When the above-mentioned concern about the double regulation is solved, i.e. double regulation is avoided, the concern in this clause would be also solved.



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About JRAIA:

JRAIA, the Japan Refrigeration and Air Conditioning Industry Association, was originally established in February 1949 as the Japan Refrigerating Machine Manufacturers Association which was thereafter reorganized in February 1969 to become an incorporated association and renamed as it is at present.

JRAIA is the trade association representing over 100 manufacturers of refrigeration and air-conditioning equipment in Japan. We, the members of JRAIA, have so far been dedicated to offering quality products to the markets of EU. JRAIA aims to promote and improve production, distribution and consumption of refrigeration and air conditioning equipment and their applied products, as well as auxiliary devices and components, automatic controls and accessories and thereby contribute to the steady development of HVAC&R industry and the improvement in people's standard of living.

For more information, please see our website www.jraia.or.jp

Annex 1:



October 2014

Joint Industry Position Paper (CECED, DIGITALEUROPE, EPEE, JBCE & JRAIA)

Position on the review of the Fan Regulation (327/2011)

EXECUTIVE SUMMARY

This paper summarises CECED, DIGITALEUROPE, EPEE, JBCE and JRAIA's comments related to the first interim report in the framework of the Fan Regulation review that was published in July 2014 and to the stakeholder meeting that took place on October 1st. It addresses the following key areas of concern:

- Scope
- Double regulation
- Replacement fans
- Additional product categories
- Ecodesign information requirements
- Exclusions for impellers and fans in tumble dryers and kitchen hoods
- Market surveillance

1. Double regulation is counter-productive and can undermine the principle of Least Life Cycle Cost

CECED, DIGITALEUROPE, EPEE, JBCE and JRAIA call upon VHK and the European Commission to delete ecodesign requirements for fans incorporated into products, if these products already need to comply with ecodesign requirements (e.g. air-conditioners). In the worst case, such double regulation

would increase the cost of products without increasing their energy efficiency, thereby possibly reducing the use of energy-efficient products by consumers.

Double regulation is unnecessary and should be avoided for the following reasons:

1. Double regulation will limit the freedom of manufacturers to design products and increase the cost of products without granting a reduction of the energy consumption of the final product. The energy efficiency value of a final product does not simply represent the sum of its components' efficiencies. In the case of tumble dryers, for example, the fan power input losses are converted into heat, in accordance with the first law of thermodynamics, which adds up to the power of the heaters to heat the air. Therefore, any saving in the input power of the fan will require an equivalent addition in the power of the heaters. The sum of both will be exactly the same, and the energy benefit will be exactly zero.
2. Ecodesign requirements at product level are based on the analysis of the Ecodesign preparatory study, which takes into account the components' efficiencies and their improvement potential when incorporated into the final product.
3. Regulating fans incorporated into products will represent a significant burden for market surveillance authorities as additional testing at component level would be required. We believe that adding such testing obligations will further hamper effective market surveillance. For example, to test the fans integrated in heating, ventilation and air conditioning (HVAC) products for market surveillance, there are 2 options:
 - Option 1: Extract the fan (motor, impeller and housing/nozzles) from the product and test
 - In most cases, for HVAC equipment this is practically impossible because the housing/nozzle of the fans is an integral part of the end product.
 - Only in some limited cases when the fan has a separate housing, which is not part of the casing of the unit, the housing/nozzles can be extracted with the rest of the fan.
 - Option 2: Test the efficiency of the fans inside the unit
 - For HVAC equipment, this requires the extraction of the other components from the equipment as some might affect the external static pressure. With DC fans, the fans are controlled by a *printed circuit board* (PCB). Nevertheless, in an HVAC product, the PCB also controls the other components of the unit, such as the compressor. By taking out these other components, the PCB might provide an error, and to solve this error, specifically dedicated fan testing know-how and tools are necessary.
4. Double regulation is counter-productive. Manufacturers optimize the efficiency of their products by making trade-offs between various options taking into consideration the ecodesign requirements for the complete product (derived from the Least Life Cycle Cost LLCC) and the performance required by costumers. Among the trade-offs, manufacturers can use specific components subject to ecodesign regulation, but can also choose different options not subject to such regulations (e.g. improved thermodynamic cycles). Imposing specific components through double regulation narrows the manufacturer's choices to optimise complete – and complex – products. It will lead to an overall higher cost without

granting any energy saving. This is undermining the very principle of LLCC analysis of complete products.

5. Double regulation would result in a misalignment of the various implementation tiers, for instance if requirements for a component come into force in 2015 and additional requirements for the overall product in 2016. This would result in complications with regard to the redesign cycle of products. Manufacturers require time to redesign their products, with a partial redesign taking around 18 months and a full redesign approximately 30 months. A misalignment of implementation tiers for component requirements and product requirements would significantly distort these redesign cycles. The vacuum cleaner is a good example: the next stricter general ecodesign requirements will come into effect in September 2017. With this step, different fans and improved design will be necessary for many models of vacuum cleaners. If in the time up to 2017 new requirements on single fans will appear, it would disrupt the design process of manufacturers. The introduction of fan requirements will lead to double costs for development without real improvement or much earlier adoption of the overall ecodesign product requirement with particular burden on SMEs.
6. In most of the cases, when fans are incorporated into final products, such as air conditioners, these fans are produced by original equipment manufacturers (OEMs) and sold to product manufacturers, without the component being placed on the market.
For fans not produced under OEM agreements, an issue related to double placing on the market could arise. They will be first placed on the market (POM) by the fan manufacturers when sold to the equipment manufacturers and a second time when POM by the manufacturers of the final product. When a manufacturer buys fans (that are compliant), they cannot always foresee when they will be integrated into the appliance and thus placed on the market once more. The double regulation will imply that manufacturers of the final products will be obliged to put on the market all fans (integrated into their equipment) before the entry into force of the fan requirements to avoid that their use is forbidden. The double POM of a product, compliant at the first POM and not compliant at the time of the second POM would create additional burden for manufacturers and surveillance authorities.

2. Applying Ecodesign requirements to replacement fans will be detrimental to the environment

We call upon VHK and the European Commission to amend the current fan regulation exempting replacement fans from ecodesign requirements. The exemption shall apply to replacement fans to be integrated in products placed on the market before 2013. As a solution to the concerns with regard to the creation of loopholes, we suggest clearly marking or labelling spare parts as such. This would clearly differentiate spare parts from other fans.

This issue does not only concern the review but needs to be addressed as a matter of urgency, as according to Art. 1.3d and Art.3.2b of the current ecodesign measure on fans (EU 327/2011), from 2015 all fans shall comply with the energy efficiency requirements as laid out in the measure.

We emphasise that replacing existing fans by functionally identical models complying with ecodesign requirements is disproportionate, technically impossible in some products, and detrimental to the environment. Besides a significant cost increase for users and manufacturers, it would lead to additional waste generation due to the reduction of the useful lifetime of equipment in case of a fan failure.

- The RoHS Directive (2011/62/EU) sets a precedent on the exemption of spare parts: Öko-Institute performed a study for DG Environment on the spare parts provision. This study concluded that *‘the impacts of enforcing these legal requirements may result in costs which significantly outweigh the benefits of its implementation. Such costs include costs for the environment, where products reach the end of their service life early, as well as costs for enterprises, where the value of products is affected in light of the limitations to circulation and reparability.’* DG Environment therefore concludes in its FAQ that *‘it is permissible to put on the market spare parts - containing the hazardous substances - for the repair of old equipment (put on the market before 1 July 2006), but not to repair new equipment (put on the market after 1 July 2006)’*.
- Note that the RoHS Directive is just one example for the exemption of spare parts which is particularly relevant for the heating and cooling and domestic appliance sectors. The same principle applies for example to car emissions and safety standards. Indeed, it is normal practice in EU law that spare parts for existing products are not impacted.

3. Adding product categories may increase complexity without clear benefits

We question the usefulness of splitting up the Regulation in a greater number of market segments compared to the current approach. Therefore, we would like to ask VHK to carefully analyse the efficiencies of fans which are currently on the market. If this analysis reveals large differences between different fan categories, a finer categorisation could be justified. In such case, further measurement categories would need to be identified accordingly.

4. Information requirements for incorporated fans do not add value for consumers

We question the usefulness of individual information requirements for fans which are integrated into products that must already comply with information requirements. Such additional information requirements present an administrative burden for manufacturers of final products without adding value for consumers and users. In addition, the publication of information requirements on public websites would result in revealing commercially sensitive data.

5. Impellers for cooling electric motors should remain excluded

We agree that the exclusion should be maintained. Indeed, the main target function of an impeller is not comparable to a “standard” fan and thus the minimum requirements cannot apply. These fans are needed to assure the functioning and safety of the electrical motor. The 3kW boundary is not related to the function of the appliance and thus no boundary should be used.

6. Fans for tumble dryers should remain excluded

The main target function of this fan is not comparable to a “standard” fan and thus the minimum requirements cannot apply. The 3kW boundary is not related to the function of the appliance and thus no boundary should be used. If a boundary is used it should only target the power input of the fan, not that of the end product.

Fans for tumble dryers are special purpose fans as they are designed to be efficient for the intended use. The fans have to withstand fluff accumulation in a wet environment. This was documented in the preparatory study for the ecodesign measure on tumble dryers. Moreover, the inlet and outlet of the fan housing is optimised to avoid turbulences in an appliance cabinet with restricted space (60x60x85 cm). Turbulences will cause lint accumulation and noise. Lint accumulation has to be avoided in order to ensure the overall efficiency and safety of the appliance. All of these factors require a special design of the fan that might lower the efficiency of fan. Fans in tumble dryer have to fulfil the following requirements:

- Flow rate is more important than pressure. The designed fan has to provide enough pressure to overcome the pressure variations caused by the air channels, filters, heat exchanger, etc. but does not need to provide additional air pressure.
- The fan has to work as efficiently as possible under working points with big hydraulic variation (such as loading, temperatures, pressure drops, etc.).
- The fan has to provide airflow in both directions. One main direction and a counter direction with a reduced airflow to enable a reversing of the drum.
- The airflow (process air and cooling air) has to be maintained and optimized within a limited space.
- The temperature of the moving gas exceeds 100°C.
- The same motor shaft is used to drive the fan and the drum.

7. Fans for kitchen hoods should remain excluded

The exclusion should be maintained. This is especially valid considering that a specific regulation covering hoods (66/2014) was recently published. As stated in the “Ecodesign Preparatory Study, Final Report –Study on residential ventilation, Feb . 2009” hood fans are special purpose fans and have functions and properties that are beyond the functions of a “standard” fan. The fans used in hoods have to merge the requirement to provide high pressure (up to 600Pa because pressure lost due to installation are unknown), high air flow (up to 900-1000 m³/h) and low noise with very restrictive dimensional constraints due to the space available in the product and the kitchen furniture.

The measurement of the hoods Fluid Dynamic Efficiency is carried out with filters in place, whereas the single fan measurement is not. Thus a direct comparison bears the risk of misinterpretation.

Also, range hoods’ fans are only used in average 1 h per day and thus bear a low potential for energy savings. Finally, the requirement to use high efficiency fans restricts the availability of range hoods in

the medium price segment of the market. Only expensive range hoods with the EEI classes A+, A++ and A+++ will be available. Looking from environmental perspective this has to be avoided. If only expensive range hoods are available on the market numerous consumers will not be able to buy and use these appliances. Opening the window for ventilation purposes will lead to high energy losses.

8. Fan parts and ATEX fans need to be excluded

We agree that all configurations that occur before placing the fan on the market are considered to be fan parts. Therefore, they should not fall under the scope of this Regulation. The final assembly will already be covered by requirements – there is no need to regulate individual parts, including impellers.

Regarding fans covered by the ATEX Directive, we agree that they should be treated separately as they are not competing with standard fans.

9. Market Surveillance needs to be improved to ensure a level playing field

Market surveillance is essential in ensuring that products on the EU market are compliant with existing legislation. Not only is this key to avoiding market distortions, market surveillance also aims at protecting consumers from fraudulent products. Lastly, only by complying with legislation, policy goals such as climate and energy efficiency objectives can be met in reality.

For components such as fans, we support maintaining the current conformity assessment module of self-declaration, as it is the most suitable module for these products. However, self-declaration can only work if market surveillance is properly implemented in order to ensure that products are complying with existing legislation.

We are committed to improving market surveillance implementation.

We therefore call on all stakeholders to cooperate and jointly develop solutions for better market surveillance in Europe by:

- Strengthening the role for the EU in this area;
- Intensifying cooperation of market surveillance authorities; and
 - Increasing cooperation with the industry.



About CECED:

CECED represents the household appliance manufacturing industry in Europe. Its member companies are mainly based in Europe. Direct Members are Arçelik, Ariston Thermo Group, BSH Bosch und Siemens Hausgeräte GmbH, Candy Group, Daikin Europe, De'Longhi, AB Electrolux, Gorenje, Indesit Company, LG Electronics Europe, Liebherr Hausgeräte, Miele & Cie. GmbH & Co., Philips, Samsung, Groupe SEB, Vestel, Vorwerk and Whirlpool Europe.

CECED's member Associations cover the following countries: Austria, the Baltic countries, Belgium, Bulgaria, Czech Republic, Denmark, France, Germany, Greece, Hungary, Italy, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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About DIGITALEUROPE:

DIGITALEUROPE represents the digital technology industry in Europe. Our members include some of the world's largest IT, telecoms and consumer electronics companies and national associations from every part of Europe. DIGITALEUROPE wants European businesses and citizens to benefit fully from digital technologies and for Europe to grow, attract and sustain the world's best digital technology companies.

DIGITALEUROPE ensures industry participation in the development and implementation of EU policies.

DIGITALEUROPE's members include 58 corporate members and 36 national trade associations from across Europe. Our website provides further information on our recent news and activities: www.digitaleurope.org

About EPEE:

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, national and international associations.

EPEE member companies realize a turnover of over 30 billion Euros, employ more than 200,000 people in Europe and also create indirect employment through a vast network of small and medium-sized enterprises such as contractors who install, service and maintain equipment.

EPEE member companies have manufacturing sites and research and development facilities across the EU, which innovate for the global market.

As an expert association, EPEE is supporting safe, environmentally and economically viable technologies with the objective of promoting a better understanding of the sector in the EU and contributing to the development of effective European policies. Please see our website (www.epeeglobal.org) for further information.



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About JBCE:

Created in 1999, the Japan Business Council in Europe (JBCE) is a leading European organisation representing the interests of almost 70 multinational companies of Japanese parentage active in Europe. Our members operate across a wide range of sectors, including information and communication technology, electronics, chemicals, automotive, machinery, wholesale trade, precision instruments, pharmaceutical, railway, textiles and glass products. Together, our member companies represented in 2013 global sales of 1.4 trillion euros. Building a new era of cooperation between the European Union (EU) and Japan is the core of our activities. www.jbce.org

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