EVIA comments on EU 1253 and 1254/2014 (LOT 6) Review following Draft Task 1,2 and 3 reports November 2019

4 May 2020

UVU – 'Box' and 'roof' fans without air treatment for non-residential application

EVIA strongly supports the Ecodesign and Energy Labelling Legislation. Both regulations are pushing the market to develop energy efficient products and support the harmonisation of product performance and test methods. Furthermore, they are enhancing the export competitiveness of European products in the global market.

Following the publication of the draft report Task 1,2 and 3 reports in November 2019, EVIA submitted two documents providing comments separately on aspects related to residential and non-residential ventilation.

EVIA would like to take the opportunity provide for stakeholder consultation to make the following additional submission providing comments on the regulation on 'box fans' and 'roof' fans.

In addition to the comments made on 20 January 2020, EVIA would like to stress the following aspects.

General Aspects:

- 'Box' and 'roof' fans are not primarily ventilation units but also used in many agricultural and industrial application. A common treatment in LOT 11 would close loopholes when products are not in the scope of LOT 6.
- The proposed approach will simplify regulation and market surveillance aspects.
- The factor has been determined to allow all fan designs possible according Regulation (EU) 327/2011 also to be possible as casing fans.

Detailed Comments on 'box fans' and 'roof' fans Aspects:

EVIA welcomes the identification of the need for (further) clarification on the nature of 'box fans' and 'roof fans', in particular concerning their compliance with LOT 6 (Ventilation Units Ecodesign & Energy Labelling: Regulation (EU) 1253/2014 and Regulation (EU) 1254/2014), and the LOT 11 (Fans Ecodesign: Regulation (EU) 327/2011).

EVIA would like to stress the fact, that UVU's without air treatment are only conveying air. Compared to fans regulated under Regulation (EU) 327/2011, they have an additional casing which for example, is used to tune the aerodynamic curve to the application needs, direct the air and/or reduce sound emissions.

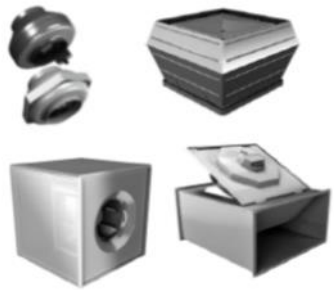
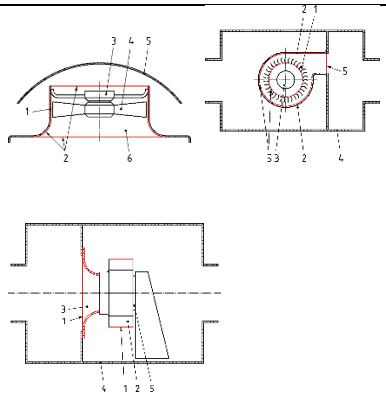
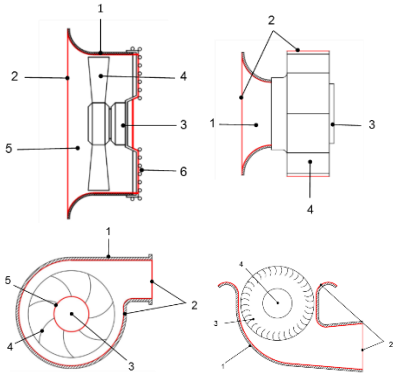
'Box' and 'roof' fans without air treatment are not only used for ventilation applications, but also in many other applications where air and gas transportation is needed. Currently, this provides for loopholes, as there is no design difference between 'box' and 'roof' fans used for ventilation and those used for air transportation.

EVIA therefore proposes to shift these products into Regulation (EU) 327/2011 in the mid-term.

As a first step, EVIA proposes to **implement a separate Annex for 'box' and 'roof' fans** without air treatment under LOT 6. This separate annex shall consider the following aspects:

- Clear definitions for these products based on FprEN17166:2019. Filtration is considered as an air treatment.
- Specifying the minimal requirements for an air transportation device and not only for a ventilation application thereby closing the loopholes.
- Using aspects of Controls, which might be implemented in LOT 6 for non-residential ventilation units, allowing comparable demand control ventilation (DCV) options.

This new annex with definitions and requirements would constitute a basis to easily facilitate a shift to LOT 11 as part of a future revision of EU 327/2011.

<table>
<tr><td colspan="2">Ventilation Regulation 1253/2014</td><td>Fan regulation 327/2011</td></tr>
<tr><td>EVU's with air treatment</td><td>UVU's without air treatment</td><td>Fans</td></tr>
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td></td><td> 
Source FprEN 17166</td><td> 
Source FprEN 17166</td></tr>
<tr><td>η_{vu} and SFP_{INT}</td><td>$\eta_{vu\ @BEP}$
1253/2014;
6,2%*LN(P)+42% if P ≤ 30 kW
63,1% if P ≥ 30 kW</td><td>η_{target}</td></tr>
<tr><td>Ventilation Regulation 1253/2014</td><td colspan="2">Fan regulation 327/2011</td></tr>
<tr><td>SFP_{INT}</td><td>η_{vu} @BEP
see Annex
see table annex
Faktor 0,78</td><td>η_{target}
draft revision:
4,56%*LN(P)-10,5%+N < 10 kW
1,1%*LN(P)-2,06%+N > 10 kW</td></tr>
</table>

Proposal for an Annex:

Ecodesign requirements for Casing Fans (CF) *(a suitable definition must be specified)* **for non-residential ventilation application without air treatment.** (Aspects for Smart controls or DCV shall be added).

Definitions -

The definitions of Article 2 of Regulation EU xxx/xxxx (revision of Regulation (EU) 327/2011) shall apply in addition to:

Casing Fans (CF) a fan according EU 327/2011 with a casing.

Unidirectional ventilation unit (UVU) without air treatment a Casing Fan and used for ventilation according EU 1253/2014 rev.

Casing is an element that is additional to the stator of a fan.

Eodesign requirements -

1. The ecodesign requirements for Casing Fan (CF) are set out below, using definitions in Article 2 and Annex I of regulation xxx/xxx (revision of 327/2011)

   $\eta_{CF,min}$ = 0.0456× LN(P_e) – 0.105 +(**0,78×**N) where P_e < 10 kW

   $\eta_{CF,min}$ = 0.011× LN(P_e) – 0.026 + (**0,78 ×**N) where P_e ≥ 10 kW

Minimum requirements for fans EU 327/2011 revised draft

Casing fan type	Measurement category	Pressure	N rev	N 327/2011
Foreward curved and radial < 5kW	A,C	Static	0,52	0,44
	B,D	Total	0,57	0,49
Forward curved and radial ≥5kW, Backward curved	A,C	Static	0,64	0,61 -0,62
	B,D	Total	0,67	0,64
Axial fans	A,C	Static	0,5	0,4
	B,D	Total	0,64	0,58
Mixed flow fans	A,C	Static	0,57 + 0,07· (α −45)/25	
	B,D	Total	0,67	

2. Casing fans used as UVU without air treatment (except dual use units) shall be equipped with a multi speed drive or a variable speed drive.

   Justification: the current level of requirements for dual use units with regard to control equipment shall not be increased.

3. This requirement is decreased by 15 % for Casing Fans which are eligible to the control/DCV bonus and add 10% if the Casing Fan is eligible to the Monitoring bonus (see separate EVIA proposition).
4. The minimum energy efficiency requirements shall apply from xxx
5. The product information requirements on UVU without air treatment on how they must be displayed are as set out in Annex III of regulation xxx/xxx (revision of 327/2011). These requirements shall apply from xxx

6. Compliance with ecodesign requirements shall be measured and calculated in accordance with requirements of regulation xxx/xxx (revision of 327/2011) and related EN standards.

Requirements shall be further detailed for dual use, reversible UVU, smoke and fire etc..

Impact on the Products on the market:

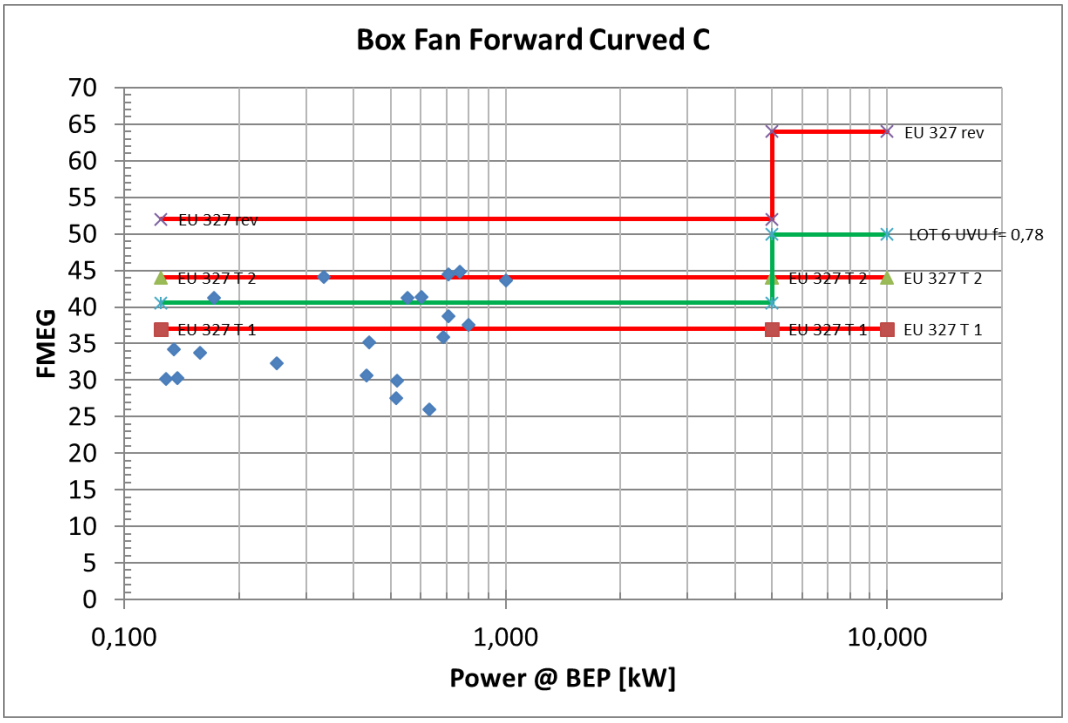
The following fan data from the market have been taken from EVIA position papers on the Revision of Regulation (EU) 327/2011. The limits of the minimum requirements:

- Fan Regulation (EU) 327/2011 tier 1
- Fan Regulation (EU) 327/2011 tier 2
- Fan Regulation (EU) 327/2011 revision paper drafted 2015
- EVIA proposal for min requirements within Regulation (EU) 1253/2014 revision

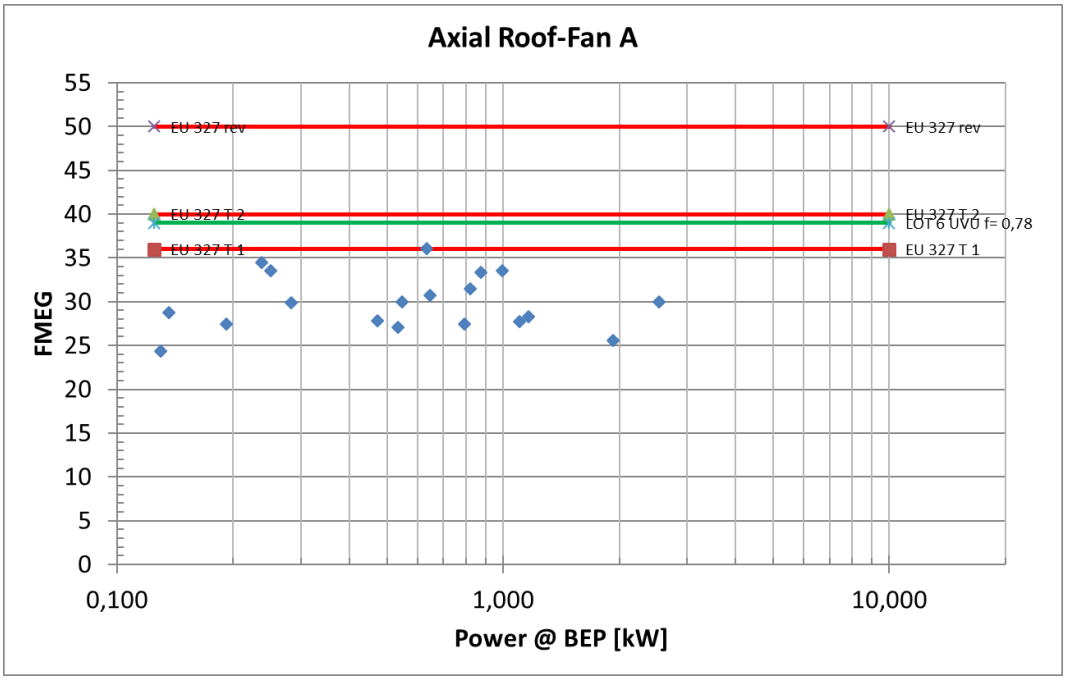
Considering the proposed factor 0,78 for implementing the fan in a casing, the impact on the market can be considered as follows.

Casing Fan – Box fan forward curved Cat C:

The proposed minimum requirement is a good compromise for products on the market to be banned.

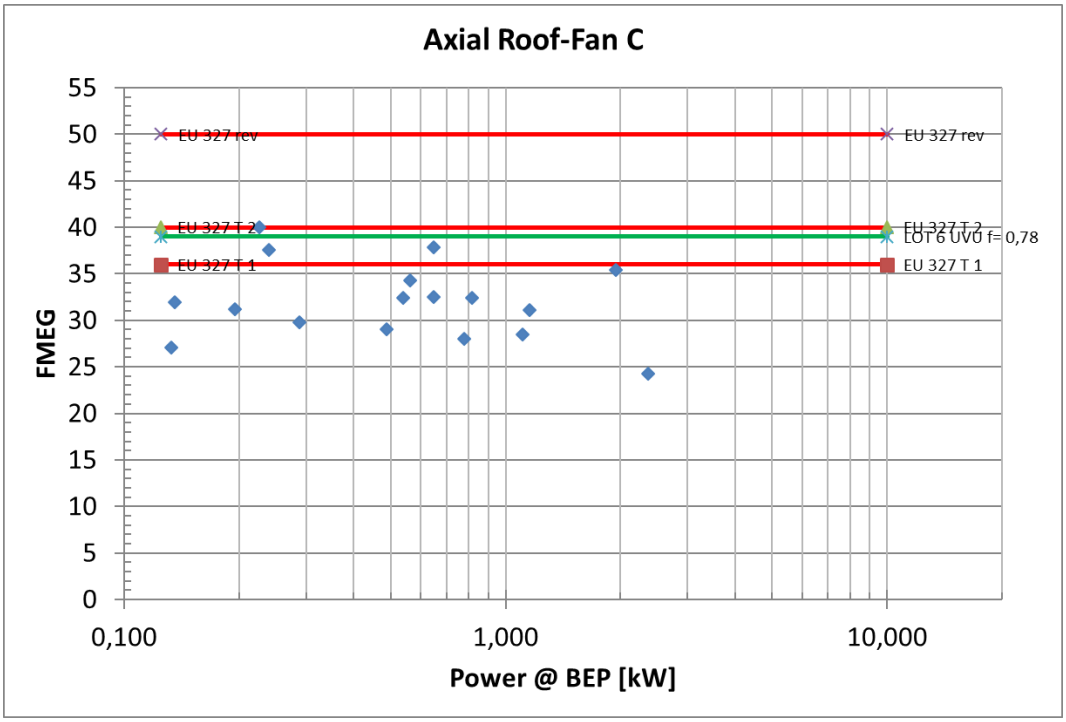


Casing Fan – Axial roof fan Cat A:



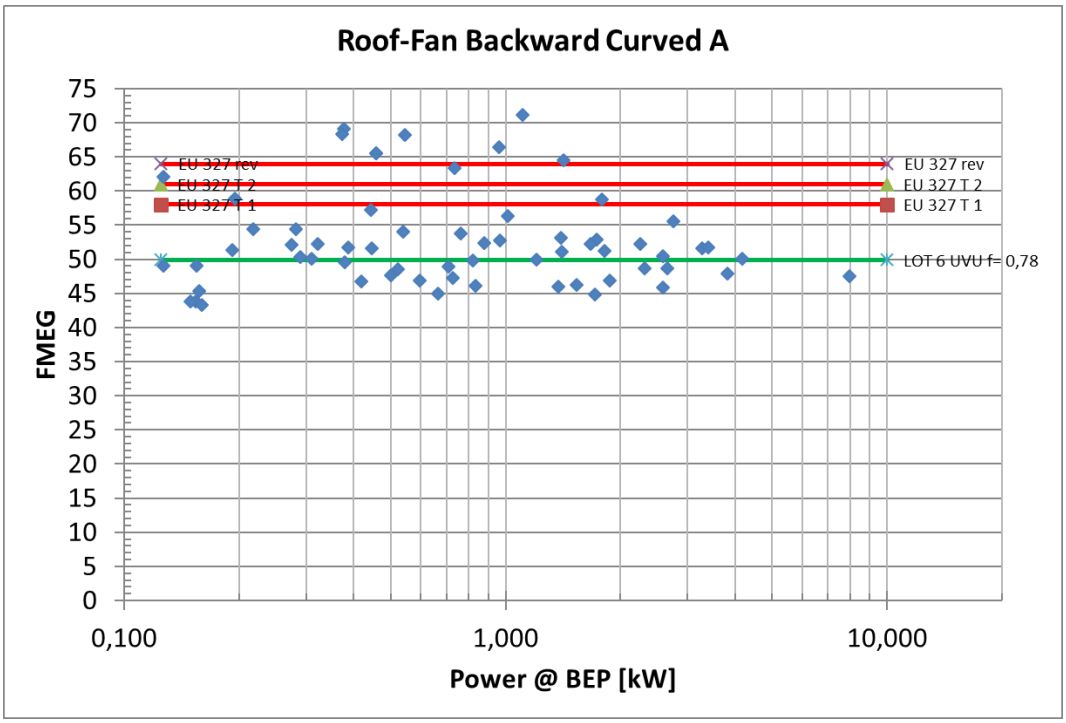
Casing Fan – Axial roof fan Cat C:

The proposed minimum requirement is ambitious for products on the market.



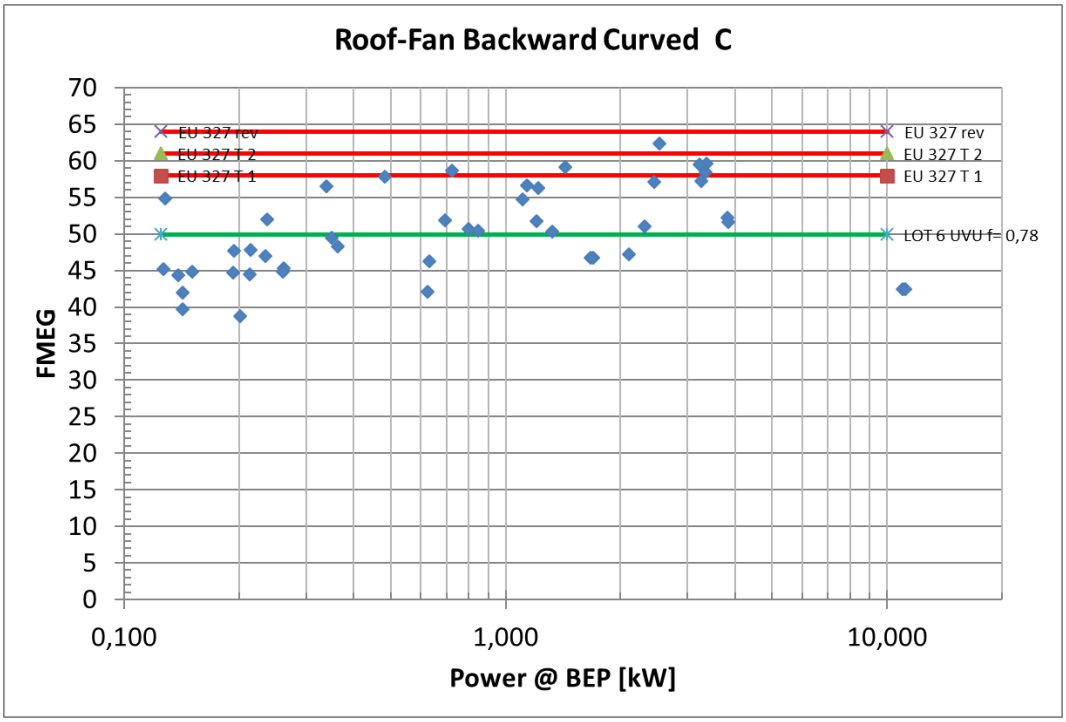
Casing Fan – Roof fan backward curved Cat A:

The proposed minimum requirement is a good compromise for products on the market to be banned.



Casing Fan – Roof fan backward curved Cat C:

The proposed minimum requirement is a good compromise for products on the market to be banned.



About EVIA

The European Ventilation Industry Association (EVIA)'s mission is to represent the views and interests of the ventilation industry and serve as a platform between all the relevant European stakeholders involved in the ventilation sector, such as decision-makers at the EU level as well as our partners in EU Member States. Our membership is composed of more than 40 member companies and 6 national associations across Europe, realising an annual turnover of over 7 billion euros and employing more than 45,000 people in Europe.

EVIA aims to promote highly energy efficient ventilation applications across Europe, with high consideration for health and comfort aspects. Fresh and good indoor air quality is a critical element of comfort and contributes to keeping people healthy in buildings.