



## Position of ECOS, EEB, Friends of the Earth Europe, WWF EPO, CAN Europe and INFORSE Europe on the EC Working Documents on the Ecodesign and Energy Labelling of Ventilation Units

December 2012

Environmental NGOs welcome the Working Documents on ventilation units. As indicated in these, there is a significant potential for energy savings related to the specific product group (140TWh/year of electricity savings in 2025), which coupled with the fact that products put on the market will be in use in the medium term, makes the need to regulate these urgent. **We therefore strongly support the fast adoption of implementing measures on these products, in order to bring about the related energy savings.**

It is important to point out that the European Commission has been taking legally binding action for products with a savings potential in the region of 1.5TWh/year (such as domestic washing machines). The significant potential of this product group makes it all the more important to push for any improvements possible; any savings achieved could be equal to the savings of several other product groups put together.

### Scope

Ventilation units with a single fan and nominal power input smaller than 30W are proposed to be excluded from the scope due to high administrative burden and relatively low saving potential of (0.4TWh). **We welcome the proposed reassessment of this exclusion at the revision stage, based on the market evolution.** However, environmental NGOs disagree with the proposed exclusion of ventilation units if they are designed to operate specifically in sterile or clean manufacturing environments where the use of HEPA or ULPA filters is mandatory. On the one hand, sterile or clean manufacturing environments generally require high air exchange rates and long-term operation. For this reason and due to the filter types required, such ventilation units are particularly linked with high energy consumption and significant saving potential. On the other hand, as highlighted by various stakeholders during the consultation forum, many ventilations units for sterile or clean manufacturing environments already fulfil the

proposed requirements. We therefore **call for the inclusion of ventilation units for sterile or clean manufacturing environments into the scope of the Regulation.**

Even though a distinction is made between residential ventilation units and non-residential ventilation units at 125 W, we understand that it is common practice for products falling in either of these categories, to be used in both residential and non-residential installations. We fear that the provision classifying products up to 250W and maximum 100Pa external pressure difference as residential ventilation units by a simple declaration will not be sufficient and could create loopholes. Instead, it is fairly certain that some manufacturers will use this self-declaration to fall under the category with less strict requirements. We therefore urge the Commission to **set the same requirements for all these products and not differentiate between residential and non-residential ventilation units.** Alternatively, setting a specific air flow as the limit between residential and non-residential ventilation units, e.g. 1000 m<sup>3</sup>, as discussed during the consultation forum could be a secondary solution. This would clearly define the related tolerances when executing measurement of air flows.

### Ecodesign requirements and timing

The working document regulates the ventilation unit while it does not provide information concerning the overall efficiency of this including filters, heat exchangers etc. Therefore, we support the proposal put forward by Sweden asking for the energy efficiency evaluation of the entire air handling unit, addressing ventilation as well as internal pressure drop. The Specific Fan Power (SFP) method is already defined in European Standard EN 13779 and used in the Nordic countries, supported by Nordic manufacturers. The examples given by Sweden show a difference in electrical power consumption between two units of 22%. This clearly suggests that internal pressure drops can be as important as the fan and fan-drive efficiencies and should therefore be taken into account when defining energy requirements for ventilation units. **Environmental NGOs welcome a move towards a systems approach, by using the SFP method.** This should however not delay the adoption of legally binding requirements on ventilation units.

Concerning the specific ecodesign requirements, we would like to highlight the following:

For non-residential units, we welcome that the highest level of ambition has been taken up from the preparatory study (Scenario 2) concerning the heat recovery energy efficiency as well as the electrical efficiency requirements; however, it is regrettable that minimum fan efficiency is based on the less ambitious, scenario 3, values. **We urge the Commission to use the Scenario 2 values from the preparatory study for all the non-residential ventilation units' requirements.** Moreover, for multiple and variable speed drives the preparatory study sets the "minimum speed setting at the most 40% of the nominal speed" (tier 1)/"at the most 20% of the nominal speed (tier 2)" (p. 21). We therefore **call for the inclusion of requirements for multiple and variable speed**

**drives in tier 1 and tier 2 for non-residential and for residential ventilation units.**

This would allow the setting of a low minimum speed for these components.

For residential ventilation units, in tier 2, the working document requires clock control to be installed as a minimum ("control factor less than or equal to 0.9"). We propose to **bring forward clock control to tier 1 requiring a control factor less than or equal to 0.9, while requiring a control factor less than or equal to 0.65 in tier 2.** It is our understanding that this would bring about further savings in certain climatic zones by the installation of central, multi-variable demand control in ducted units and single variable demand control for non-ducted units. Demand control ventilation should be also applied to non residential ventilation units, where feasible.

Leakage is another important parameter related to the loss of efficiency for residential and non-residential ventilation units. The 10% leakage rate put forward for balanced ventilation (non-ducted and ducted with recuperative heat exchangers) and up to 6% for ducted balanced ventilation with regenerative heat exchangers is too high. As a comparison, the German "Passive House" standard requires leakage of < 3 %<sup>1</sup>. **A maximum of 3 % air flow rate should be required in tier 2 for non-ducted and ducted systems,** using recuperative or regenerative heat exchangers.

Based on previously adopted implementing measures and the Commission's proposal concerning future Regulations on Energy Related Products<sup>2</sup>, **we would strongly support the inclusion of tier 3 (after the review) at the benchmark levels.** This would send a long term signal to manufacturers, whilst it could be revised, based on updated market data.

Regarding the timing, the preparatory study proposed as one option, requirements applying one year after entry into force of the regulation instead of two years, as proposed in the working document. We prefer early application of the requirements but understand as well, the advantages of synchronising requirements with the Regulation No 327/2011 for fans (2 years until Tier 1, 2 years for Tier 2). If indeed Tier 1 comes into

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<sup>1</sup> DIBT test standard (max. 5% leakage) [http://www.dibt.de/de/data/Aktuelles\\_Ref\\_III1\\_1.pdf](http://www.dibt.de/de/data/Aktuelles_Ref_III1_1.pdf) and Passive House standard (max. 3% leakage) in Burkert in bauen+energie, May 2010: <http://www.der-energie-coach.net/Downloads/Waermebereitstellungsgrad.pdf> as well as an example of a ventilation unit certificate with  $\leq 3\%$ : [http://www.heliosventilatoren.de/zulassungen/zd\\_helios\\_kwl-ec700d\\_de.pdf](http://www.heliosventilatoren.de/zulassungen/zd_helios_kwl-ec700d_de.pdf)

Another study states that Ventilation Units can achieve leakage rates below 0.5% (see Pfluger/Feist/Ludwig: "Das kostengünstige mehrgeschossige Passivhaus in verdichteter Bauweise, Fraunhofer Fraunhofer Irb Verlag, 2001, part 3, page 6) [http://www.passiv.de/downloads/05\\_teil3\\_lueftung.pdf](http://www.passiv.de/downloads/05_teil3_lueftung.pdf)

<sup>2</sup> European Commission's presentation at Consultation Forum on horizontal issues (19 April 2012)

force after 2 years instead of 1 year, the level of ambition should be increased, as detailed above and reflecting technical progress.

**We welcome the addition of other environmental aspects** and namely the information requirements concerning disassembly, in order to facilitate recycling of the respective materials. Reference to these should also be included in the preamble of the regulation (article 9), concerning other ecodesign parameters.

## Energy Labelling

We welcome the energy labelling for the residential ventilation units, which will create differentiation between products and allow further innovation on the market. **The class boundaries should be tightened so that the A class is not populated to begin with and will not be overpopulated in the medium term.** If this is not the case, we fear it would negate the potential impact of the energy label and delay market transformation. For reference, when the tumble drier energy label came into force the top products were in class C.

For the non residential ventilation units, even though these products are handled by professionals, the level of knowledge concerning the efficiency of these may vary. Transmitting this information in an easily understood manner is therefore essential. The labels that have been elaborated by industry, as shown in the consultation forum meeting, do not allow for an easy comparison of these products. Moreover, the existence as such of these voluntary labels clearly highlights further the need for one label, as was rightly raised in the consultation meeting. We consequently **call for the introduction of an energy label for non-residential ventilation units.** This could be also used for green public procurement purposes, especially since 50% of public administration buildings in the EU use mechanical ventilation.

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