

EUP PREPARATORY STUDY LOT 11
AGENDA FOR 3RD STAKEHOLDER MEETING
Wednesday 2 May 2007
EC, Brussels

ATTENDEES: (ADA) Anibal de Almeida, University of Coimbra
(JA) Johannes Anschütz, Gebhardt Ventilatoren
Justin Brock, AEA Technology
(CUB) Conrad U. Brunner, AB International
Alain Buisson, Leroy Somer
(BC) Bill Cory, Independent Consultant
Thomas Damm, VDMA
(HF) Hugh Falkner, AEA Technology
Ismo Grönroos-Saikkala, European Commission
Dan Hopkins, Fläktwoods
(NJ) Neil Jones, Fläktwoods
(KL) Kerstin Lichtenvort, European Commission
Julia Oberschmidt, Fraunhofer ISI
Alberto Pirovano, Soler&Palau
(RG) Peter Radgen, Fraunhofer ISI
Bernhard Sattler, ZVEI
(HPS) Hans-Paul Siderius, Senter Novem
(US) Uwe Sigloch, ebmpapst
(HS) Heikki Stenberg, Fläktwoods
Philippe Thiery, Leroy Somer

AGENDA

14:00 to 14:45	Presentation of work progress for the sub-study on Fans for ventilation in non residential buildings
14:45 to 15:00	General Discussion
15:00 to 15:15	Coffee Break
15:15 to 16:45	Discussion of key issues: <ul style="list-style-type: none"> • Product boundary and efficiencies (ref. p. 12) • Product categorization (ref. p. 18) • European design guidelines (ref. p. 30) • Installed stock (ref. p. 44/46) • BOM data (ref. p. 57) • BAT and BNAT Values
16:45 to 17:00	Next steps and close of meeting

MINUTES

Presentation

Peter Radgen (RG) presents the state-of-work concerning the EuP preparatory study on

fans.

The product boundaries of the EuP fan are defined to include the motor and also the control, if the motor doesn't work without the integrated control (slide 3).

With regard to the motor data needed for the fans study (slide 5 f.), Kerstin Lichtenvort (KL) asks why motors are included in the fans analysis which are not part of the motors study. Conrad. U. Brunner (CUB) and Anibal de Almeida (ADA) explain that there are differences between the sub-studies as in the power range of 0.75 to 150 kW (considered in the motors study) universal motors are not relevant, but in the lower power range (considered in the fans study) they are.

In the context of efficiencies at part load (p. 9) it is pointed out that it makes sense to fix minimum efficiency standards not only based on the best efficiency point (BEP). RG presents a proposal on how to take into account part load efficiency by calculating weighted average efficiencies based on BEP and the endpoints of the performance curve (min./max. volume flow) of a fan (slides 10 f.). However, Uwe Sigloch (US), Johannes Anschütz (JA) and CUB point out that these points are not clearly defined. Therefore, the min./max. volume flow would need to be specified ex ante in order to apply the approach of weighted efficiencies. CUB suggest to set the endpoints at +- 30% of volume flow.

Bill Cory (BC) points out that ISO 13 3448 gives bands of efficiencies.

RG points out that fans typically don't work at BEP. Thus, if the manufacturers would be encouraged to flatten the performance curve, the weighted average efficiency would improve.

Hans-Paul Siderius (HPS) asks how it can be made sure that the correct endpoints to the left and right of BEP are chosen. BC points out that this would depend on the fan type.

Heikki Stenberg (HS) suggest not to consider the left endpoint (min. volume flow) as it can be very different from manufacturer to manufacturer. BC points out that a fan is usually not selected based on its BEP but on the operation point specified by the customer which might even not be the same as the real operating point. He furthermore suggests that fans usually are not used at their design point.

However, RG points out, that the losses are much smaller, when the performance curve is flat.

As for the product categorisation (slides 12 ff.) a point is made that forward and backward bladed centrifugal fans are in different categories as they are used in different applications.

Concerning the presentation of the relative importance of the life-cycle phases (slides 20) KL suggests to re-consider the graph as it gives the impression that all categories have the same impact in total. Furthermore, HPS points out that the different environmental impact categories are not comparable in absolute values.

Regarding the information needed from manufacturers (slides 15 and 24 ff.) Ismo Grönroos-Saikkala (IGS) adverts that more information is needed from manufacturers before the analysis can be completed. JA acknowledges that he will send more BOMs.

On inquiry by KL, RG confirms that the BOM for analysis of the EuP fan will always include the materials of the corresponding motor. KL adds that this must always be made clear when presenting the eco-profiles of the products. On inquiry by IGS regarding the control, RG refers to the note on slide 3 (EuP fan) that in some cases also the control will be included in the BOM.

Regarding European design guidelines (slide 21) RG asks manufacturers to inform about those guidelines known to them which are not included in the table yet. HS advises that there is a finish guideline.

Concerning the assumption to estimate installed base (slide 22) CUP suggests that the life-time of fans is much higher. BC adds that he recently inspected fans installed in 1913. CUB and BC suggest an average life-time of 15 years, HS of 20 years. HS adds that a distinction has to be made between technical life-time and practical life-time. **Stakeholders and the project team agree to adjust the average life-time to 15 years for the stock estimates instead of 10 years.**

KL asks for the operating hours of the fan which can be quite different even if the life-time might be the same. However, this does not influence the number of products installed but only the analysis of the use phase.

However, IGS suggests that the picture is very clear that regarding electricity consumption of fans something should be done, even though it is not clear yet what exactly will be done. HPS points out that the technical studies (EuP preparatory studies) will be the basis for implementing measures. IGS adverts that in addition there will be an economic/social analysis.

Manufacturers ask how efficiency values will be verified. IGS explains that a first party verification is foreseen and points out to the new approach (see http://ec.europa.eu/enterprise/index_en.htm and <http://www.newapproach.org/>).

Regarding performance data (slide 25) RG suggests that catalogue data / software of manufacturers will be used, if the data needed is available there. RG asks for additional input on performance data from manufacturers. Concerning the efficiency data shown on slide 26 CUB points out that there should be a distinction in different sizes within the categories.

HPS points out that the product categorisation is based on functionality not technology. RG adds that there might be some overlap between categories. IGS asks how feasible it is to replace a forward with a backward bladed type, and vice versa.

JA suggest that it was already decided that within each category a distinction should be made in 3 different sizes (diameter) and min./max. power. Furthermore it should be clearly seen if it refers to the fan or the motor or both.

BC asks if there are backward bladed fans smaller than 120 mm. US answers yes.

On inquiry of US, RG confirms that the efficiency data on slide 26 refers to overall static efficiency. US points out that then the efficiencies shown are too high.

HS states that the performance data needed would be available in manufacturers catalogues. Furthermore he points out that in AHU forward bladed fans were used but today backward bladed fans are used. For AHUs size (mm) doesn't matter regarding efficiency.

BC points out that the efficiency of a 120 mm fan is much lower than of a 1,400 mm fan. HS confirms that here there are large differences between smallest and biggest size. Attached to these minutes there is a template to enter efficiency data distinguished by EuP categories, by fan/motor/transmission/control and by sizes. **Stakeholders are asked to provide additional performance data for fans using this template.**

Discussion

CUB concludes that the operation phase is the absolutely dominant feature. Therefore more time should be placed on the use phase; e.g. energy declaration in products. A list of suggested measures should be prepared for fast implementation and what could come out of it. To start the discussion when the final report is completed would be too late. Consensus on conclusions should be achieved and more stakeholders should be involved.

IGS points out that first the technical studies will be finished, at the end of which design options will be proposed. Then, a discussion will take place in the consultation forum on policy options that are not discussed within the stakeholder meetings concerning the technical studies. It is important that it is clear that the focus of this study is on **technical** issues (in line with the MEEUP methodology) and that within this study the best data available is used and that there is an agreement on how the study has been conducted.

JA asks if the target of the consultation forum is already clear with regard to how detailed implementing measures will be. IGS answers that the content of possible implementing measures will only be known after the completion of the preparatory studies and the impact assessments.

CUB points out suggestions should be made on what should be tackled (system/building/product). However, RG points to the Energy Performance of Buildings Directive in this regard, where the "system" is considered, whereas in the EuP Directive the focus lies clearly on the product, not the system. The measures on system/product should complement each other.

IGS acknowledges that a selected number of priority products is considered within each EuP preparatory study. That specific product categories are considered in the study does not necessarily mean that implementing measures will be fixed on each product category; the study and the subsequent impact assessment will show whether this makes sense or not.

RG asks if there is more need for discussion regarding the product boundaries. HPS points out that for both fans and pumps it was at an earlier date said only to look at the component. At this meeting it was presented in a very clear way how the complete product can be considered and compared. He asks whether this could also be a sensible approach for pumps.

CUB also acknowledges that the approach presented to analyse the complete fan+motor product would be a clever and systematic one, even though he does not know if it will work.

Hugh Falkner (HF) points out that the "separate" approach is supposed to be best in the sense of the directive from the pumps point of view, in particular for larger pumps.

HS asks if the control could also be included. RG confirms that this would be possible.

ADA points out that small fan (motors) with shaded pole motors (efficiencies down to 20%) should be forbidden in applications with a lot of operating hours. A point is made in that, for example, regarding ovens, no-one will look for an energy label on ventilator inside but only on the oven.

CUB suggests that there should be a systematic exchange of information between the different EuP studies.

The relevant studies for fans are Lot 10 Aircond and Ventilation (www.ecoaircon.eu) and Lot 1 (www.ecoboiler.org).

RG asks manufacturers for additional information regarding the measures that might help to increase the efficiency of the EuP fan (motor, aerodynamics, more sophisticated coating...). BC points to CFD studies of the fan itself in this context.

Neil Jones (NJ) and JA agree that there is a big hole in the knowledge base regarding the effect of the system/installation. JA adds that possibly the improvement potential is higher for the motors driving the fan than for the fan wheel itself. NJ adds that this depends on the type of product.

Any additional information should be provided for by manufacturers by the 31st of May. Missing data will then be completed based on previously gained knowledge, literature, catalogues etc.

