

Brussels, 2 July 2010

Re: **DG-ENTR Lot 6: Air-conditioning and ventilation systems**
draft report Task 1, Task 2 and Task 3

Dear Mr Rivière and Mr Kemna,

Eurovent the European Committee of Air Handling and Refrigeration Equipment Manufacturers, representing the manufacturers of Refrigeration, Air-Conditioning, Heating and Ventilation equipment, would like to thank the Consultants for the work done so far.

Eurovent recognize the importance of ventilation and air-conditioning in relation to energy saving potentials. We see also the energy saving potentials in the so-called energy related products connected to ventilation and air-conditioners like air filtration products and duct-systems. We refer to the "related" products later in our comments.

In view of the preparatory studies and the drafts:

- Task 1 Definitions of products, standards and legislation
- Task 2 Economic and market analysis
- Task 3 User requirements on ventilation systems

we are pleased to send you hereafter the main **critical issues of concern and approvals** and we trust that these will be seen as a constructive contribution from Eurovent.

As mentioned before, we would like to indicate again that for the Industry the time to provide comments is very short, especially when it concerns so many pages as it is in this case. This is the reason that additional comments might be provided later.

We thank you for considering the comments from Eurovent and we remain at your disposal for any additional information that you might require.

Yours sincerely,

Eurovent
Joop Hoogkamer
Executive Director

Critical issues of concern and approvals

TASK 1 - Definitions of product, standards and legislation

1. General remarks

- Products versus systems

The reducing of energy consumption of products in the scope, already results in reduction of energy consumption of systems. A system approach would overload this study that covers already a substantial number of products. Accordingly wording should be changed from ventilation and air conditioning **systems** to ventilation and air conditioning **products**. In other words, narrow down the scope on energy using products and not their integration into systems.

- Related products, ducts

Duct systems are a very important energy related product and they have a great impact on the energy consumption. The most important feature is the design of the system but also the air tightness. As a duct-system by itself is not put on the market, but installed on location, it isn't a real product according the Energy related Product Directive.

However duct systems will be in the future one of the most important issues in a building when the building envelope becomes airtight and we have to regain the energy when providing fresh air into the occupied zones. It is therefore that Eurovent recommends to bring them under the Energy related Product Directive under a relevant Lot.

- Related products, air filtration products

Air filtration products contribute a lot to energy consumption when wrong designed, wrong selected, polluted or clogged.

We have to take in consideration the environment and sustainability when developing new products. A low over time, average pressure drop and the filter efficiency to be fulfilled is more important than we think. A replaceable air filter is the only part that changes over time and the easiest way to influence the maintenance cost and energy consumption.

We assume that it contributes up to 30% of the overall energy consumption of the system. A LCC calculation of a comfort fine air filter shows, that the energy stands for approximate 70-80%. It's obvious that it is very important to have the combination of proper filtration over time, and low energy consumption. With regards to this we have the EN13779:2007 standard to recommend air filter classes and quality for indoor air related to the outdoor air.

It's therefore very important to consider the air filtration products when discussing energy consumption as they contribute a lot to the energy consumption when installed. There is a lot to save if one using the best performing air filtration methods.

It is therefore that Eurovent recommends to consider air filtration products as an Energy related Product and bring them under a relevant Lot.

Within Eurovent an energy rating testing and energy classification scheme is under preparation. It is foreseen to finalise a recommendation and labelling schema at the end of 2010 which is related to filter classes acc. EN 779 (revision 2010/2011). This scheme shows within one filter class the energy consumption of an air filter for typical conditions (air flow rate, running time, fan efficiency and average pressure drop). This should be taken in consideration as basis is case of a European energy labelling scheme for filters and filtration products.

- Other environmental impacts

We noted that the study will quantify also other environmental impacts, however for the moment not defined but likely “green” refrigerants supported by the agreement that an energy premium is granted for products using these “green” refrigerants.

Eurovent feels that there is a general perception that “green” refrigerants have the same or even better efficiency grades than current synthetic refrigerants on the market. This is not always the case as it depends on the application and technology used.

Eurovent recommends not integrating EcoDesign legislation with Environmental legislation as in this case synthetic refrigerant are covered by the F-Gas Regulation already.

Further the EcoDesign Directive deals with total life cycle assessments and therefore all kind of refrigerants; synthetic and “green” are studied anyway. In addition to this it is important to make always an integral refrigerant selection, so efficiency and safety aspects need to be in balance where we as Eurovent put safety always first.

- Indoor climate

EcoDesign aims to govern how energy can be utilised most efficient, in buildings and houses for human beings. That means all buildings for production, services, learning and living of private persons and families. The air, which counts for 15 kilograms daily inhalation for all people, are the substance, that circumflexes everyone and because all Europeans do live approximate 75% of their lives indoor, it is crucial that the air indoor quality has the right quality to live in. The air is the element, which brings thermo graphical comfort, for people who are in buildings. Physically it is important to control the air in buildings, when energy efficiency of using buildings is a matter of concern.

The air brings the heat around in the building rooms and facilities, it brings the heat from e.g. water based central heating to the persons in buildings, it carries inhalation air to persons and it carries exhalation away from the same persons. Control of the air in buildings, is the physical way to control energy consumption, for creating a healthy and efficient indoor climate suitable for people to work, learn, live and be in.

So the driving force of all our actions is the air quality for human occupied areas and energy efficiency follows.

- Cooling and heating

Eurovent is aware of the fact that the cooling and heating discussion is still going on. It seems that the actual view is to split the two functions; cooling and heating in different Lots for simplification and budget reasons. We know that the heating link between Lot 6 and the DG-ENER Lots 20: “Local room heating” and 21: “Central heating products” is being investigated. Eurovent recommends strongly not splitting the cooling and heating function as the product is the same and the two functions are linked together.

For manufacturers it is confusing and costly to deal with two or three Lots for the same product. In this connection we refer you to Lot 10 where the cooling and heating function is covered by one Lot.

- Legislation and Voluntary Agreements at European Community level

Within the Eurovent Certification programme for Air Handling Units a new energy labelling system has been developed in close cooperation with the industry and was introduced the first of January this year. The labelling system judges the internal pressure drop (unit velocity), performance of the heat recovery system (efficiency and pressure drop) and the efficiency of the motor/fan assembly. A comparison is made with reference values defining the label classes A, B, C, D and E with minimum energy efficiency requirements as per class.

The Eurovent classification scheme for Chillers existed already since 2004. There are currently discussions regarding the introduction of A+ and A++ labelling classes in this scheme.

Existing Eurovent energy classification scheme's (programmes) are for:

- Heat Exchangers
- Rooftops
- Air Handling Units (AHU)

and in preparation for:

- fan coil units (end this year)
- filters (end this year)

Subtask 1.1 - Product classification and definition

1.1. Ventilation

First we noted that you followed our advice to transfer the Box- and Roof fans from Lot 11 to this Lot 6. We thank you for considering our recommendation.

1.1.1. Definition of Ventilation

As the term ventilation refers to exchange air in human occupied areas Eurovent is of the opinion that typical industrial ventilation is excluded from the scope, such as ventilation for industrial processes and ventilation required in industrial environments for respiration.

Examples of such ventilation that should be excluded from the scope are:

- ventilation of furnaces within the process industry
- ventilation in tanks of oil tankers for personnel that needs to enter the tank for maintenance purposes
- ventilation for removal of toxic gasses from the working place
- etc.

Eurovent also recommends strongly to exclude ventilation for tunnels which is a part of the of the infrastructure

Page 6, footnote

In the footnote stated that heat recovery ventilation is dealt within Lot 10.

“Even though it is a product both for residential and non-residential use, it’s nominal ventilation power consumption is far below 125 W per unit and thus fully in the scope of DG ENER Lot 10 (Domestic Ventilation), at least for measures dealing with the LHRV as a component”

For Eurovent it isn’t clear what the reason is to mention this as a footnote in Lot 6.

1.2. Air-conditioning

1.2.2 Air conditioning systems

For air-conditioning the same applies as for ventilation when it concerns conditioning of air in human occupied areas. Also here Eurovent is of the opinion that typical industrial air-conditioning is excluded from the scope. With regard to this Eurovent recommends to exclude close control precision air conditioning products from the scope as solely used for process cooling.

Main types of air conditioning systems

All-air systems

On page 32, fan coils are defined as “active emitters, combining a cooling/heating coil with a convection fan...” Air unit heaters/coolers are not included in this definition and we like to correct this as follow.

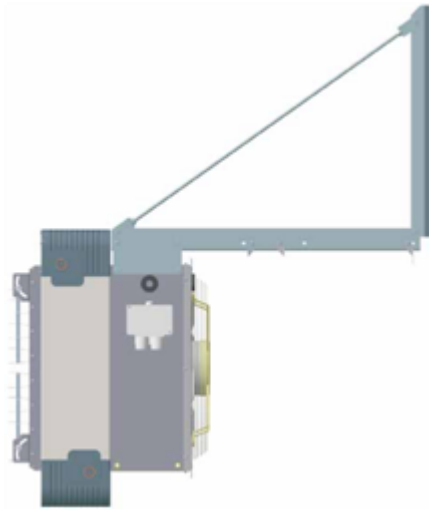
An Air unit heater is designed as a decentral solution for heating, ventilation and cooling operation according to the building structure and use.

Applications: factory/production halls, store rooms, retail (all human occupied spaces).

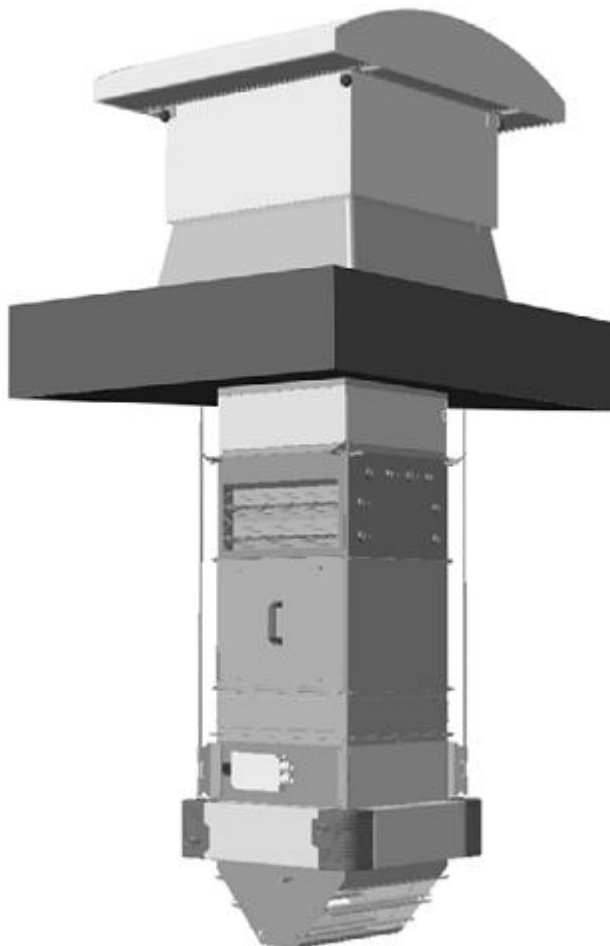
The unit can be divided into two main categories using heated or chilled water as medium:

- re-circulating units heating/cooling: the level of heating required to avoid frost or fulfilling necessary heating/cooling capacity
- mixed air units heating/cooling: particular demands are made on the amount of fresh air in connection with heating/cooling duties

Picture of recirculation unit



Picture of mixed air unit



Interaction with other Ecodesign studies and regulation**Cooling generation**

Eurovent is fully agreed with the four temperature levels you mentioned for chilled cooling media distribution. However for air conditioning for cooling floor and other radiant cooling surfaces you mentioned a leaving chilled water temperature above 20 °C.

Eurovent recommends to bring this down to 16°C limit in order to cover supply cooling water temperature to all dry cooling applications.

TASK 2 - Economic and market analysis

We noted that there is still a need for input from the manufacturers as there is a gap between the data you have and the data you like to have. Eurovent hope with you that the response you will receive on the Information request will fill up or even close this gap. If we can be of assistance please don't hesitate to contact us.

Eurovent has for the moment no comments.

TASK 3 - User requirements on Ventilation Systems

We noted that only ventilation is covered and we expect that the air conditioning part will follow soon.

Eurovent has for the moment no comments.