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EUROPE'S INDUSTRY ASSOCIATION FOR INDOOR CLIMATE, PROCESS COOLING, AND FOOD COLD CHAIN TECHNOLOGIES

Eurovent Position Paper PP – 2017-04-12

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Eurovent input for the European Commission Guideline Document on the European Commission Regulation 2016/2281

In a nutshell

With this paper, Eurovent and its Members would like to provide input for the European Commission Guideline Document on the European Commission Regulation 2016/2281

Specifically, within this paper the requirements set for the following products are analysed:

- Water-to water comfort chillers - Water/brine-to-water comfort chillers
- Comfort chillers (water-to-water, water/brine-to-water, air-to-water) for low temperature applications and medium temperature heating applications
- Water-to-air air conditioners - Water/brine-to-air air conditioners
- Water/brine-to-air heat pumps
- Rooftop heat pumps – Ductable heat pumps
- Rooftop air conditioners – Ductable air conditioners
- Multi-split heat pumps
- Multi-split air conditioners
- Ventilation units – Heat recovery units

The industry would like to ask the Commission to further clarify these requirements which could lead to an ambiguous interpretation of the Regulation.

Background

Eurovent and its Members hold that the EU Ecodesign regulations and measures are a powerful tool to achieve the European Union energy saving targets and to ensure the level-playing-field. We do not regard these measures as a burden, but as a motivation to further innovate while contributing to progressive thinking throughout all sectors of our industry.

General comments

This Position Paper relates to the European Commission Regulation 2016/2281 published on 30 November 2016. Having reference to the Ecodesign requirements for air heating products, cooling products, fan coil units and high temperature chillers which are set out in the Regulation's Annex II & III, with this paper Eurovent and its Members would like to provide input for the European Commission Guideline Document covering the above-mentioned Regulation.

In order to actively contribute in achieving the energy saving targets proposed, Eurovent and its Members regard an unambiguous interpretation of the requirements set out in this Regulation as fundamental.

In this respect, in the following we would like to highlight the Regulation's requirements that in our opinion should be further clarified.

Water-to water comfort chillers - Water/brine-to-water comfort chillers

The Regulation's Annex III table 21 sets the part load conditions for water-to-water comfort chillers (we have to assume that the same part load conditions apply to water/brine-to-water comfort chillers).

Concerning the outdoor heat exchangers, two different conditions are defined:

1. Cooling tower or water loop application inlet/outlet temperatures
2. Ground couple application (water or brine) inlet/outlet temperatures

Water-to-water comfort chillers

Rating point	T_j (°C)	Part load ratio	Cooling tower or water loop application inlet/outlet temperatures (°C)	Ground coupled application (water or brine) inlet/outlet temperatures (°C)	Fan coil application inlet/outlet water temperatures (°C)		Cooling floor application inlet/outlet water temperatures (°C)
					Fixed outlet	Variable outlet (*) (*)	
A	35	100 %	30/35	10/15	12/7	12/7	23/18
B	30	74 %	26/ (*)	10/ (*)	(*)/7	(*)/8,5	(*)/18
C	25	47 %	22/ (*)	10/ (*)	(*)/7	(*)/10	(*)/18
D	20	21 %	18/ (*)	10/ (*)	(*)/7	(*)/11,5	(*)/18

* outlet temperatures dependent on water flow rate as determined at standard rating conditions (100% part load ratio when cooling, 88% when heating)

It is superfluous to emphasise that the chiller's efficiency is significantly affected by the inlet/outlet condensing water temperatures (30°C or 10°C mark a considerable difference).

The Regulation's Annex III table 17 sets the standard rating conditions for water/brine-to-water comfort chillers (we assume that the same conditions apply also to water-to water comfort chillers). These conditions relate to the cooling tower application only and the ground coupled application is not reported on this table.

Table 17

Standard rating conditions for water/brine-to-water comfort chillers

		Outdoor side heat exchanger		Indoor side heat exchanger	
		inlet temperature °C	outlet temperature °C	inlet temperature °C	outlet temperature °C
Cooling mode	water-to-water (for low temperature heating applications) from cooling tower	30	35	12	7
	water-to-water (for medium temperature heating applications) from cooling tower	30	35	23	18

From a technical point of view, one should consider that the use of condensing water at a lower temperature than the one requested by the HVAC system (i.e. ground coupled application temperature 10 °C and HVAC temperature 18°C), is a non-sense. This would imply a significantly lower efficiency and/or a not properly functioning refrigeration system.

In addition to the above considerations, we hold that the Regulation's Annex III table 21 contains a misprint where it considers the 'ground coupled application' column for water-to-water comfort chillers. We assume that the same part load conditions apply to water-to water comfort chillers. In this respect, we would like to ask the Commission to clarify whether this is a misprint and if this is the case to delete this column.

Comfort chillers (water-to-water, water/brine-to-water, air-to-water) for low temperature applications and medium temperature applications

The Regulation's Annex II sets the minimum seasonal space cooling energy efficiency of water-to-water, water/brine-to-water, and air-to-water comfort chillers.

The Regulation's Annex III table 17 and table 18 set respectively the standard rating conditions for water/brine-to-water comfort chillers (we have to assume that the same standard rating conditions apply to water-to-water comfort chillers) and for air-to-water comfort chillers.

Table 17

Standard rating conditions for water/brine-to-water comfort chillers

		Outdoor side heat exchanger		Indoor side heat exchanger	
		inlet temperature °C	outlet temperature °C	inlet temperature °C	outlet temperature °C
Cooling mode	water-to-water (for low temperature heating applications) from cooling tower	30	35	12	7
	water-to-water (for medium temperature heating applications) from cooling tower	30	35	23	18

Table 18

Standard rating conditions air-to-water comfort chillers

		Outdoor side heat exchanger		Indoor side heat exchanger	
		inlet temperature °C	outlet temperature °C	inlet temperature °C	outlet temperature °C
Cooling mode	air-to-water (for low temperature applications)	35	—	12	7
	air-to-water (for medium temperature applications)	35	—	23	18

The comfort chiller's applications depend on the inlet/outlet water temperature of the indoor side heat exchanger.

In this respect, we hold that the Annex II table 10 'Information requirements for comfort chillers' should also indicate whether the chiller is intended to be used for low temperature applications, for medium temperature applications, or for both applications.

It goes without saying that the chillers which are intended to be used for low and medium temperature applications, shall comply with the defined minimum seasonal space cooling energy efficiency at the low and medium temperature related standard rating conditions; the chillers which are intended to be used only for low temperature applications, shall comply with the defined minimum seasonal space cooling energy efficiency only at the low temperature related standard rating conditions; the chillers which are intended to be used only for medium temperature applications, shall comply with the defined minimum seasonal space cooling energy efficiency only at the medium temperature related standard rating conditions.

We hold that the Regulation would benefit from clarifying the above points, and in this respect we would like to ask the Commission to address these considerations and suggestions in its guideline document.

Water-to-air air conditioners - Water/brine-to-air air conditioners

The Regulation's Annex III table 21 sets the part load conditions for water-to-air air conditioners (we assume that the same part load conditions apply to water/brine-to-air air conditioners).

Concerning the outdoor heat exchangers two different conditions are defined:

1. Cooling tower or water loop application inlet/outlet temperatures
2. Ground coupled application (water or brine) inlet/outlet temperatures

Water-to-air air conditioners

Rating point	T_j (°C)	Part load ratio	Cooling tower or water loop application inlet/outlet temperatures (°C)	Ground coupled application (water or brine) inlet/outlet temperatures (°C)	Indoor air dry bulb (wet bulb) temperatures (°C)
A	35	100 %	30/35	10/15	27 (19)
B	30	74 %	26/ (*)	10/ (*)	27 (19)
C	25	47 %	22/ (*)	10/ (*)	27 (19)
D	20	21 %	18/ (*)	10/ (*)	27 (19)

* outlet temperatures dependent on water flow rate as determined at standard rating conditions (100% part load ratio when cooling, 88% when heating)

It is superfluous to emphasise that the air conditioner's efficiency is significantly affected by the inlet/outlet condensing water temperatures (30°C or 10°C mark a considerable difference).

Furthermore, the Regulation's Annex II table 12 sets the information requirements for water/brine-to-air air conditioners (we assume that same requirements apply also to water-to air air conditioners).

Table 12

Information requirements for water/brine-to-air air conditioners

Model(s): Information to identify the model(s) to which the information relates:

Outdoor side heat exchanger of air conditioner: [default: water/brine]

Indoor side heat exchanger of air conditioner: [default: air]

Type: compressor driven vapour compression or sorption process

If applicable: driver of compressor: [electric motor or fuel driven, gaseous or liquid fuel, internal or external combustion engine]

Item			Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated cooling capacity			$P_{rated,c}$	x,x	kW		Seasonal space cooling energy efficiency	$\eta_{s,c}$	x,x	%
Declared cooling capacity for part load at given outdoor temperatures T_j and indoor 27°/19 °C (dry/wet bulb)							Declared energy efficiency ratio or gas utilisation efficiency/ auxiliary energy factor for part load at given outdoor temperatures T_j			
Outdoor temperature T_j	cooling tower (inlet/outlet)	ground coupled								
T_j = + 35 °C	30/35	10/15	*Pdc*	x,x	kW		T_j = + 35 °C	EER_j or $GUE_{c,bin}/AEF_{c,bin}$	x,x	%
T_j = + 30 °C	26/*	10/*	*Pdc*	x,x	kW		T_j = + 30 °C	EER_j or $GUE_{c,bin}/AEF_{c,bin}$	x,x	%
T_j = + 25 °C	22/*	10/*	*Pdc*	x,x	kW		T_j = + 25 °C	EER_j or $GUE_{c,bin}/AEF_{c,bin}$	x,x	%
T_j = + 20 °C	18/*	10/*	*Pdc*	x,x	kW		T_j = + 20 °C	EER_j or $GUE_{c,bin}/AEF_{c,bin}$	x,x	%
Degradation co-efficient for air conditioners (**)			C_{dc}	x,x	—					

While in this table there are two columns, one related to cooling tower and one other related to ground coupled applications, there is only one column related to the rated cooling capacity and only one related to the seasonal space cooling efficiency. We hold that the Regulation's table 12 at Annex II would benefit from clarifying at which testing conditions (cooling tower or water loop, or ground coupled) the air conditioner has been tested.

To ensure the level-playing-field, we would like to suggest that the manufacturer should declare:

1. rated cooling capacity
2. seasonal space cooling energy efficiency
3. product testing condition (cooling tower or ground coupled)

We would like to ask the Commission to address these considerations and suggestions in its guideline document.

Water/brine-to-air heat pumps

The Regulation's Annex III table 21 sets the part load conditions for water/brine-to-air heat pumps

Concerning the outdoor heat exchangers two different conditions are defined:

1. Ground water application inlet/outlet temperatures
2. Brine application inlet/outlet temperatures

Water/brine-to-air heat pumps

Rating point	T_j (°C)	Part load ratio	Ground Water	Brine	Indoor air dry bulb temperature (°C)
			Inlet/outlet temperatures (°C)	Inlet/outlet temperatures (°C)	
A	– 7	88 %	10/ (*)	0/ (*)	20
B	+ 2	54 %	10/ (*)	0/ (*)	20
C	+ 7	35 %	10/ (*)	0/ (*)	20
D	+ 12	15 %	10/ (*)	0/ (*)	20
E	T_{ol}	depends on T_{ol}	10/ (*)	0/ (*)	20
F	T_{biv}	depends on T_{biv}	10/ (*)	0/ (*)	20

(*) Outlet temperatures dependent on water flow rate as determined at standard rating conditions (100 % part load ratio when cooling, 88 % when heating)

It is superfluous to emphasise that the heat pump's efficiency is significantly affected by the inlet/outlet condensing water temperatures (10°C or 0°C mark a considerable difference).

Furthermore, the Regulation does not define the brine's composition (i.e. Water 70% + Ethylene Glycol 30% Mixture or Water 50% + Propylene Glycol 50% Mixture). The heat pump's efficiency is significantly affected by brine's composition (Water 70% + Ethylene Glycol 30% Mixture or Water 50% + Propylene Glycol 50% Mixture mark a considerable difference). We hold that the Regulation would benefit from clarifying the brine's composition.

The Regulation's Annex III table 19 sets the standard rating conditions for water/brine-to-air heat pumps and air conditioners.

Table 19

Standard rating conditions for water/brine-to-air heat pumps and air conditioners

		Outdoor side heat exchanger		Indoor side heat exchanger	
		inlet temperature °C	outlet temperature °C	inlet dry bulb temperature °C	inlet wet bulb temperature °C
Heating mode (for heat pumps)	water	10	7	20	15 max
	brine	0	– 3 (*)	20	15 max
	water loop	20	17 (*)	20	15 max
Cooling mode (for air conditioners)	cooling tower	30	35	27	19
	ground coupled (water or brine)	10	15	27	19

(*) For units designed for heating and cooling mode, the flow rate obtained during the test at standard rating conditions in cooling mode is used.

The Regulation's Annex II table 14 'Information requirements for heat pumps' sets the data to be declared by the manufacturer.

Item	Symbol	Value	Unit		Item	Symbol	Value	Unit
Rated heating capacity	$P_{rated,h}$	x,x	kW		Seasonal space heating energy efficiency	$\eta_{s,h}$	x,x	%
Declared heating capacity for part load at indoor temperature 20 °C and outdoor temperature T_j					Declared coefficient of performance or gas utilisation efficiency/auxiliary energy factor for part load at given outdoor temperatures T_j			
T_j = – 7 °C	*Pdh*	x,x	kW		T_j = – 7 °C	COP_d or $GUE_{h,bin}/AEF_{h,bin}$	x,x	%
T_j = + 2 °C	*Pdh*	x,x	kW		T_j = + 2 °C	COP_d or $GUE_{h,bin}/AEF_{h,bin}$	x,x	%
T_j = + 7 °C	*Pdh*	x,x	kW		T_j = + 7 °C	COP_d or $GUE_{h,bin}/AEF_{h,bin}$	x,x	%
T_j = + 12 °C	*Pdh*	x,x	kW		T_j = + 12 °C	COP_d or $GUE_{h,bin}/AEF_{h,bin}$	x,x	%
T_{biv} = bivalent temperature	*Pdh*	x,x	kW		T_{biv} = bivalent temperature	COP_d or $GUE_{h,bin}/AEF_{h,bin}$	x,x	%
T_{OL} = operation limit	*Pdh*	x,x	kW		T_{OL} = operation limit	COP_d or $GUE_{h,bin}/AEF_{h,bin}$	x,x	%
For air-to-water heat pumps: T_j = – 15 °C (if T_{OL} < – 20 °C)	*Pdh*	x,x	kW		For water-to-air heat pumps: T_j = – 15 °C (if T_{OL} < – 20 °C)	COP_d or $GUE_{h,bin}/AEF_{h,bin}$	x,x	%

We hold that the Regulation's table 14 at Annex II would benefit from clarifying at which testing conditions (water, or brine, or water loop) the heat pump has been tested.

To ensure the level-playing-field, we would like to suggest that the manufacturer should declare:

1. rated heating capacity
2. seasonal space heating energy efficiency
3. product testing condition (water, or brine, or water loop)

We would like to ask the Commission to address these considerations and suggestions in its guideline document.

Rooftop heat pumps – Ductable heat pumps

The Regulation's Annex I defines rooftop heat pumps as:

'rooftop heat pump' means an air-to-air heat pump, driven by an electric compressor, of which the evaporator, compressor and condenser are integrated into a single package

The Ecodesign requirements of rooftop heat pumps are set in the Regulation's Annex II.

The Regulation's article 7 'Review' states:

The Commission shall review this Regulation in the light of technological progress made in connection to air heating products, cooling products and high temperature process chillers. It shall present the results of this review to the Ecodesign Consultation Forum no later than 1 January 2022. The review shall include an assessment of the following aspects:

…

(i) the appropriateness of setting stricter ecodesign requirements for rooftop and ductable air conditioners and heat pumps;

We would like to point out that the Regulation does not set any definition for the ductable heat pumps.

In our opinion ductable heat pump means:

Air-to-air heat pump, driven by an electric compressor, designed to work with air ducts, both the indoor side and the outdoor side. It can be featured as a packaged version, in which the indoor heat exchanger, the compressor and outdoor heat exchange are integrated into a single package, or as a split version, composed by two packages joined by refrigerant lines: one corresponding to the indoor unit, integrating the indoor heat exchanger, and another corresponding to the outdoor unit, integrating the outdoor heat exchanger and the compressor.

Based on the above definition, we hold that the ductable heat pumps (both packaged and split versions) belong to the family of rooftop heat pumps.

Moreover, we believe that the original Commission's intent was to group together rooftop heat pumps and ductable heat pumps (both packaged and split version), and this is why the Regulation's article 7 puts together rooftop and ductable heat pumps.

Further to the above analysis, we would like to ask the Commission to clarify that:

1. Ductable heat pumps, both packaged and split version, belong to the rooftop family
2. Ductable heat pumps, both packaged and split version, should comply with the same ecodesign requirement set in the Regulation Annex II for rooftop heat pumps.

Rooftop air conditioners - Ductable air conditioners

The Regulation's Annex I defines rooftop air conditioners as:

'rooftop air conditioner' means an air-to-air air conditioner, driven by an electric compressor, of which the evaporator, compressor and condenser are integrated into a single package

The Ecodesign requirements of rooftop air conditioners are set in the Regulation's Annex II.

The Regulation's article 7 'Review' states:

The Commission shall review this Regulation in the light of technological progress made in connection to air heating products, cooling products and high temperature process chillers. It shall present the results of this review to the Ecodesign Consultation Forum no later than 1 January 2022. The review shall include an assessment of the following aspects:

…

(i) the appropriateness of setting stricter ecodesign requirements for rooftop and ductable air conditioners and heat pumps;

We would like to point out that the Regulation does not set any definition for the ductable air conditioners.

In our opinion ductable air conditioner means:

Air-to-air air conditioner, driven by an electric compressor, designed to work with air ducts, both the indoor side and the outdoor side. It can be featured as a packaged version, in which the evaporator, compressor and condenser are integrated into a single package, or as a split version, composed by two packages joined by refrigerant lines: one corresponding to the indoor unit, integrating the evaporator, and another corresponding to the outdoor unit, integrating the condenser and the compressor.

Based on the above definition, we hold that the ductable air conditioners (both packaged and split versions) belong to the family of rooftop air conditioners.

Moreover, we believe that the original Commission's intent was to group together rooftop air conditioners and ductable air conditioners (both packaged and split version), and this is why the Regulation's article 7 puts together rooftop and ductable air conditioners.

Further to the above analysis, we would like to ask the Commission to clarify that:

1. Ductable air conditioners, both packaged and split version, belong to the rooftop family.
2. Ductable air conditioners, both packaged and split version, should comply with the same ecodesign requirement set in the Regulation Annex II for rooftop air conditioners

Multi-split heat pumps

The Regulation's Annex II sets, inter alia, the seasonal space heating energy efficiency of air heating products.

Concerning multi-split heat pumps, it states:

'For multi-split heat pumps, the manufacturer shall establish conformity with this regulation based on measurements and calculations according to Annex III. For each model of outdoor side unit, a list of recommended combinations with compatible indoor side units shall be included in the technical documentation. The declaration of conformity shall then apply to all combinations mentioned in this list. The list of recommended combinations shall be made available prior to the purchase/lease/hire of an outdoor side unit.'

In our opinion the above requirement should be intended as:

'For multi-split heat pumps the manufacturer shall establish conformity with this regulation based on measurements and calculations according to Annex III. For each model of outdoor side unit, a list of compatible indoor side units shall be included in the technical documentation. The declaration of conformity shall then apply to all indoor side units mentioned in this list. The list of compatible indoor side units shall be made available prior to the purchase/lease/hire of an outdoor side unit.'

We would like to ask the Commission to clarify this point within its guideline document.

Multi-split air conditioners

The Regulation's Annex II sets, inter alia, the seasonal space cooling energy efficiency of cooling products.

Concerning multi-split air conditioners, it states:

'For multi-split air conditioners, the manufacturer shall establish conformity with this regulation based on measurements and calculations according to Annex III. For each model of outdoor side unit, a list of recommended combinations with compatible indoor side units shall be included in the technical documentation. The declaration of conformity shall then apply to all combinations mentioned in this list. The list of recommended combinations shall be made available prior to the purchase/lease/hire of an outdoor side unit.'

In our opinion the above requirement should be intended as:

'For multi-split air conditioners the manufacturer shall establish conformity with this regulation based on measurements and calculations according to Annex III. For each model of outdoor side unit, a list of compatible indoor side units shall be included in the technical documentation. The declaration of conformity shall then apply to all indoor side units mentioned in this list. The list of compatible indoor side units shall be made available prior to the purchase/lease/hire of an outdoor side unit.'

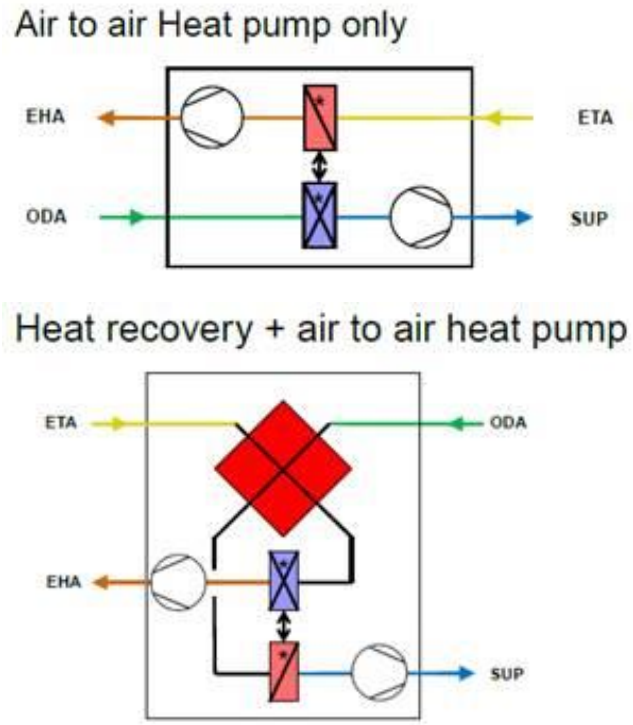
We would like to ask the Commission to clarify this point within its guideline document.

Ventilation units – Heat recovery units

It is not clear to us whether the air handling units equipped with a build-in air-to-air heat pump of

rated heating capacity over 12 kW are included in the scope of this Regulation.

Typical design of these units is shown in the pictures below:



Where:

3. EHA= Exhaust air
4. ETA= Extract air
5. ODA= Outdoor air
6. SUP= Supply air

Although ventilation units typically are not a part of an air-based heating system, yet an incorporated heat pump still delivers heat to increase the temperature of the ventilation air stream.

Heat pumps are usually incorporated in the ventilation units only to recover the heat of the extract air. This allows an additional transfer of energy from the warm extract air stream to the cold fresh air stream. Heat pumps are used in particular when the evaporator is located downstream the heat recovery exchanger and the air temperature is too low to enable further heat exchanger (recovery). Without the use of heat pumps, the portion of energy still carried in the extract air after the heat recovery exchanger would be lost (it would be extracted to the atmosphere).

We would also like to point out that usually the ventilation air is not used to maintain the desired indoor temperature of an enclosed space for thermal comfort of human beings, and the temperature of the supply air temperature is more or less equal to indoor one.

Moreover, in most cases the heating output of the heat pumps are not capable to reach the desired supply air temperature, and an additional heater (water heating coil or electrical heater) must be applied.

Further to the above analysis, we hold that, in a vast majority of cases, the heat pumps incorporated in the ventilation units are not used to maintain the desired indoor temperature of an enclosed space for thermal comfort of human beings.

In the industry's opinion, the ventilation units are not covered by this Regulation. However, we would like to ask the Commission to clarify this point within its guideline document.

Seasonal space heating energy efficiency – Seasonal space cooling energy efficiency – Conversion coefficients

The Regulation's Annex III 'Measurement and calculation' sets how to calculate the seasonal space heating energy efficiency and the seasonal space cooling energy efficiency of the products in the scope of the Regulation. These calculation methods are described without providing any formula or calculation example. The same applies to the Conversion coefficients (CC).

We hold that the Regulation would benefit from clarifying how to calculate the seasonal space heating/cooling energy efficiency. In this respect we would like to ask the Commission to provide in its guideline document the related formula as well as the calculation examples.

Conclusion

Eurovent and its Members believe that above comments represent a precious support for the development of the European Commission Guideline Document on the European Commission Regulation 2016/2281. This Guideline document would represent an interpretation of the requirements set out in this Regulation to ensure the level-playing-field.

Yours sincerely,

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Eurovent and transparency

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Eurovent's structure rests upon democratic decision-making procedures between its members and their representatives. The more than 1.000 organisations within the Eurovent network count on us to represent their needs in a fair and transparent manner. Accordingly, we can answer policy makers' questions regarding our association representativeness and decisions-making processes as follows:

1. Who receives which amount of votes?
At Eurovent, the amount of votes is never related to organisation sizes, country sizes, or membership fee levels! No matter if SMEs or large organisations, each company receives one vote within our technical working groups. In our General Assembly or Eurovent Commission ('steering committee'), our national member associations receive two votes per country.

2. Who has the final decision-making power?
The Eurovent Commission acts as the association's 'steering committee'. It defines the overall association roadmap, makes decisions on horizontal topics, and mediates in case manufacturers cannot agree within technical working groups. The Commission consists of national association Members, receiving two votes per country independent from its size or economic weight.

3. How European is the association?
More than 90 per cent of manufacturers within Eurovent manufacture in and come from Europe. They employ around 150.000 people in Europe largely within the secondary sector. Our structure as an umbrella enables us to consolidate manufacturers' positions across the industry, ensuring a broad and credible representation.

4. How representative is the organisation?
Eurovent represents more than 1.000 companies of all sizes spread widely across 20+ European countries, which are treated equally. As each country receives the same amount of votes, there is no 'leading' country. Our national member associations ensure a wide-ranging national outreach also to remote locations.

Check on us in the European Union Transparency Register under identification no. 89424237848-89.

We are Europe's Industry Association for Indoor Climate, Process Cooling, and Food Cold Chain Technologies – thinking beyond 'HVAC&R'

Eurovent is Europe's Industry Association for Indoor Climate, Process Cooling, and Food Cold Chain Technologies. Its members from throughout Europe, the Middle East and Africa represent more than 1.000 companies, the majority small and medium-sized manufacturers. Based on objective and verifiable data, these account for a combined annual turnover of more than 30bn Euros, employing around 150.000 people within the association's geographic area. This makes Eurovent one of the largest cross-regional industry committees of its kind. The organisation's activities are based on highly valued democratic decision-making principles, ensuring a level-playing field for the entire industry independent from organisation sizes or membership fees.

Eurovent's roots date back to 1958. Over the years, the Brussels-based organisation has become a well-respected and known stakeholder that builds bridges between manufacturers it represents, associations, legislators and standardisation bodies on a national, regional and international level. While Eurovent strongly supports energy-efficient and sustainable technologies, it advocates a holistic approach that also integrates health, life and work quality as well as safety aspects. Eurovent holds in-depth relations with partner associations around the globe. It is a founding member of the ICARHMA network, supporter of REHVA, and contributor to various EU and UN initiatives.

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Our Members are national associations from Europe, the Middle East and Africa that are representing manufacturers in the area of Indoor Climate, Process Cooling, and Food Cold Chain technologies.

The more than 1000 companies within their networks (Eurovent 'Affiliated Manufacturers') can directly participate in Eurovent activities in a democratic and transparent manner.

Member types

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