

**Template for comments**

<b>Date: 7.11.2016</b>	<b>Document: Eurovent Association Comments on CDM-MP71-A01 Draft methodological tool: Methodological framework for standardized baseline for energy efficient appliances - refrigerators and air conditioners Version 01.0</b>
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**TABLE FOR COMMENTS**

**Name of submitter: Francesco Scuderi**

**Affiliated organization of the submitter (if any): Eurovent Association**

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0	1	2	3	4	5	6
#	Para No./ Annex / Figure / Table	Line Number	Type of comment ge = general te = technical  ed = editorial	Comment (including justification for change)	Proposed change (including proposed text)	Assessment of comment (to be completed by UNFCCC secretariat)
1	NA	NA	te	There is not any reference to the European regulations regarding residential air conditioners: (EU) No 206/2012 and (EU) No 626/2011. It is suggested to add these references		
2	NA	NA	ge	It may be necessary to take into account the recent agreement of Kigali regarding the global phase down of HFCs		

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3	2.1	12	te	<p>This standard covers energy-efficient appliances for residential/household application (i.e. air conditioners, refrigerators).</p> <p>The subject matter, as it is proposed in this draft standard, is too general and it is not clear which product falls and which does not fall within the definition of residential air conditioners.</p> <ul style="list-style-type: none"> <li>• Are air conditioners with a rated capacity &gt;12 kW (for cooling and/or heating) covered by this standard?</li> <li>• Which is the upper capacity limit?</li> <li>• Are VRF units covered by this standard?</li> </ul> <p>It is suggested to better define the products in the scope of this standard.</p>		
4	2.2	14	te	See the above comment 3		
5	16	(e)(g) (h) (l) (j)	te	The majority of air conditioners are reversible, and used for both cooling and heating functions. Not only the cooling function, but also the heating one should be in the scope of this standard.		
6	16	(h)	te	There is not any reference to the related European standards. The definition of EER shall refer also to the EN 14511.	All-EER information refers to a test standard (EN 14511 or ISO 5151)	
7	16	(i)	te	There is not any reference to the related European standards. The definition of SEER shall refer also to the EN 14825.	The EU's SEER definition reflects average climate conditions in Europe and it refers to the test standard EN 14825, the Indian definition reflects...	

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8	16	(j)	te	The SCOP is not defined (see the above comment 5); it shall refer to the EN 14825.	Add: <b>Seasonal Coefficient of Performance (SCOP) for air conditioners is derived from the COP by weighing for different part load periods of the year. It is a legally required parameter in Europe, referring to EN 14825, reported in Watt/Watt.</b>	
9	16	(k)	te	The refrigerant charge should be expressed in kg and not in litre. We suggest to amend accordingly this draft standard		
10	16	(k)	te	The values of GWP differ between different IPCC assessment reports. It should be mentioned which value is used. It should be the same GWP as used in the global phase down of HFCs under the Montreal Protocol		
11	16	(k)	te	HFOs are not used for household /residential air conditioners (they are candidates for large chillers). As for GWP values of HFCs, R-32 represents 675 and R-410A 2088. 5% average leakage rate means 5 units out of 100 need full refilling because of accidents. So, 95% of units do not need refilling to run 10 to 15 years. The refrigerant charge should be expressed in kg and not in litre (see the above comment 9).	Refrigerant - chemicals circulating in a thermodynamic process in refrigeration or air conditioning equipment. GWP of refrigerants currently used vary between 10,000 for CFCs, <del>700-1,900</del> <b>675-2100</b> for HFCs and 1-10 of Hydrocarbons. An average household air conditioner contains about one litre <b>kg</b> of refrigerant and an average refrigerator 0.1 litre <b>kg</b> . <del>Refrigerants leak slowly out of the appliance so it needs to be refilled periodically. Air conditioners need this maintenance every one or two years, while</del> and refrigerators leak so little that they run for 10 or 15 years before the refrigerant needs to be refilled; “	

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12	16	(l)	te	See the above comment 11	Delete “others need to be refilled with refrigerant periodically, some up to 30% refilling per year”	
13	16	Table 1	te	Every reference to COP and SCOP is missing (see the above comment 5)	COP and SCOP to be added	
14	28	Equation 7	ed/te	Definition of EFgrid is missing for eq. (7)		
15	28	Equation 7	te	Source of default values of βL is missing		
16	28	Equation 7	te	It seems there is a misunderstanding of the meaning of SEER Note that $hrs_y \times \beta_L / EER_{avr,y}$ is “equivalent” to $1/SEER_{avr,y}$	Divide in (7) in two equations (7.1 and 7.2):  $BE_y = \sum_i EF_{grid} \times n_{p,i,y} \times hrs_y \times \beta_L \times \frac{P_{BL}}{EER_{avr,y}} \quad (7.1)$ $BE_y = \sum_i EF_{grid} \times n_{p,i,y} \times \frac{P_{BL}}{SEER_{avr,y}} \quad (7.2)$	
17	28	Equation 7	te	Every reference to COP and SCOP is missing (see the above comment 5)	Introduce two new equation taking into consideration both COP and SCOP	
18	29		te	EU doesn't use ISO 5151. Refers also to EN 14511 Accuracy of conversion factors are questionable. It could influence final results by several % if not realistic.	All national testing standards use ISO 5151 <b>as well as other testing standards (i.e. EN 14511)</b> , except the one from South Korea, <b>the EU</b> , and USA with a small variation of in a parameter related to ambient temperature. Add if available conversion coefficients for the EU data.	
19	30		te	Every reference to COP and SCOP is missing (see the above comment 5)		

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20	30		te	To be modified accordingly to the above comment 16		
21	34	(d)	te	SCOP to be added (see the above comment 5)	(d) COP – Coefficient of performance (e) SCOP - Seasonal Coefficient of Performance (f) FS/V – fixed-speed, inverter (variable speed drive) ...	
22	36		te	EU doesn't use ISO 5151. Refers also to EN 14511 (see the above comment 18)	Refers also to EN 14511	
23	37		ge	Eurovent Market Intelligence (EMI) ( <a href="http://www.eurovent-marketintelligence.eu">http://www.eurovent-marketintelligence.eu</a> ) is the European Statistics Office on the HVAC&R market, and provides key market data since 1994. The guiding principle of EMI is to establish a detailed map of the European, Middle-East and African market thanks to the manufacturers' participation in the data collections.	Include Eurovent Marketing Intelligence in the list of Marketing data providers	
24	47		te	Every reference to COP and SCOP is missing (see the above comment 5)	COP and SCOP to be added	
25	48		te	Every reference to COP and SCOP is missing (see the above comment 5)	COP and SCOP to be added	
26	49		te	Every reference to COP and SCOP is missing (see the above comment 5)	COP and SCOP to be added	
27	Parameter table 9		te	Every reference to COP and SCOP is missing (see the above comment 5)	The $\beta_L$ shall be defined also by considering COP and SCOP	
28	Parameter table 10		te	Every reference to COP and SCOP is missing (see the above comment 5)	Heating capacity to be added	

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29	Parameter table 11		te	Every reference to COP and SCOP is missing (see the above comment 5)	COP <sub>avr,y</sub> to be added	
30	Parameter table 11		te	EU doesn't use ISO 5151. Refers also to EN 14511	Modify line regarding "Measurement Procedures" according to modifications suggested above.	
31	50	1	ge	Air conditioner replacement seems to be missing completely		
32	63	4	Te	HFC-134a is not used for household/residential air conditioners.	Delete HFC-134a	
33	70	Equation 11	te	Every reference to COP and SCOP is missing (see the above comment 5)	Average heating capacity of air conditioners sold in year y in KW shall be added	
34	73	Equation 13	te	Every reference to COP and SCOP is missing (see the above comment 5)	Average heating capacity of the project air conditioners in KW shall be added	
35	Parameter table 19			Every reference to COP and SCOP is missing (see the above comment 5)	Average heating capacity of air conditioners sold in year y in KW shall be added	
36	Appendix 3		te	Every reference to COP and SCOP is missing (see the above comment 5)		
37	Appendix 3		te	Accuracy of tables given in Appendix 3 are questionable. It could influence final results by several % if not realistic.		