

Position for Ecodesign ENTR Lot 6/ENER Lot21 (Central air conditioning & heating)

January 2015

JBCE believes that there is a clear need for reliable and comparable data for all products on the market, for this reason JBCE would like to strengthen its proposal for VRF in Ecodesign requirements.

In JBCE's previous position paper, we suggested that the inclusion of the power input of the indoor units would create a great deal of complexity to an already complex system such as a VRF. JBCE would like to reiterate the importance to exclude these power inputs from the energy efficiency calculations because there are too many combinations to be shown and to ensure flexibility towards building engineers. To achieve above goals, JBCE proposes to amend the working document (A) and transitional methods (B) as follows, considering rationale as explained in the background later on (C):

A. THE WORKING DOCUMENT

----- Working Document Annex II Ecodesign requirements -----

◆ Revising in Annex II clause 6) a) item i) (proposed by EPEE during consultation forum):

i) The ~~instruction manuals for installers and end-users, and free access websites of manufacturers, their authorised representatives and importers shall contain the following elements:~~

◆ Revising in Annex II clause 6) a) item i) (proposed by EPEE during consultation forum):

x) For heat generators or cold generators designed for air heating or cooling products, and air heating or cooling product housings to be equipped with such heat or cold generators, their characteristics, the requirements for assembly, to ensure compliance with the ecodesign requirements for air heating or cooling products ~~and, where appropriate, the list of combinations recommended by the manufacturer;~~

◆ Including in Annex II clause 6) a) item xii) (additional proposal JBCE):

'xii) For multisplit appliances, an appropriate list of indoor units intended to be placed on the market.

◆ Including in Annex II clause 6) b) item iii) (proposed by JBCE during consultation forum):

'iii) where the information relates to multisplit air conditioners and heat pumps, the test results and performance data may be obtained on the bases of the performance of the outdoor unit.'

◆ Including in Annex II clause 6) item c) (revised proposal by JBCE during consultation forum):

c) The manufacturer of comfort chillers, air-to-air, water/brine to air conditioners, heat pumps and high temperature process chillers shall provide laboratories performing market surveillance checks, upon request, the necessary information on the setting of the unit, ~~and where applicable the type and number of indoor units as applied for the establishment of declared capacities, SEER/EER, SCOP/COP, SEPR/COP values where applicable and service values and provide contact information for obtaining such information.'~~

B. THE TRANSITIONAL METHOD

JBCE proposes to add an additional clause 3.4 to clarify the test method for VRF systems.

The test method shall limit the number of indoor units that needs to be selected and connected to the outdoor unit for the measurement of the capacity and power input of the outdoor unit. Since, depending on the choice of the indoor unit, energy efficiency values will vary. This effect is less when the power input of the indoor unit is excluded, but it is still present.

----- TRANSITIONAL METHOD CLAUSE 3 -----

◆ Revising the title of Clause 3 to include measurement set up for multisplits:

3. Additional elements for calculations related to the seasonal space heating and cooling efficiency of comfort chillers, air conditioners and heat pumps **and the testing for multispit systems.**

◆ Inclusion of clause 3.4 to add the additions to the test method for multisplit systems.

3.4 Test method for multisplit air conditioners and heat pumps

The choice of the indoor unit for multisplit units for related to the power input and capacity shall be limited to

- 1) the same type of indoor units for the test (for example, ducted, cassettes, wall mounted, ..., but not a mix of types.)
- 2) the same size of the indoor units if the connection ratio of 100 +/-5% can be reached. If the connection ratio of 100 +/-5% with same sizes cannot be reached, sizes as similar as possible to meet as near as possible to 100%.
- 3) Number of indoor units should be limited as follows:

| Capacity | Above 12kW up to 30kW | Above 30kW up to 50kW | Above 50kW | Above 50kW with multiple outdoor units |
|-----------------------|-----------------------|-----------------------|------------|--|
| Number of indoor unit | 4 | 6 | 8 | sum of the indoor units as defined for the single outdoor units* |

*A multiple outdoor of 14kw + 16kw shall be tested with 4+4 indoor units. A multiple outdoor of 35kw x 3 shall be tested with 6 x 3 indoor units.

Reasons for the above 3 limitations for indoor units:

- 1) Not to overcomplicate testing and to create some certainty for manufacturers.
- 2) To limit the possible difference in test results when different sizes are chosen.
- 3) The number of indoor units is not limited to the capacities of the test facilities in Europe today, they are chosen to represent a more realistic situation and to compensate as much as possible the more stringent approach for market surveillance.

Remark: JBCE’s VRF manufacturers are of the opinion, that the declared data should be identical to the data in the catalogue.

C. BACKGROUND OF JBCE PROPOSAL

Today, in the standard EN14511, there are no specification for the selection of the indoor unit, except for the capacity ratio, which should be 100%. A free choice of indoor units could be interpreted dually depending on the reader of the standard:

- Manufacturers: Manufacturers can choose the indoor units for testing
- Market surveillance authorities: market surveillance authorities can choose the indoor units for testing.

Up to now, the EN14511 standard was not used by market surveillance authorities for VRF, as there was simply no legislation to sets minimum energy efficiency requirements on VRFs. Therefore, the common interpretation was that the manufacturer could choose the indoor units for testing.

In the last year, with the introduction of the certification programme in Europe, VRF manufacturers have seen that there is some abuse with this interpretation. Instead of the standard's initial intention to limit the choice to commonly sold indoor units, some manufacturers simply chose the indoor unit which would give the best efficiency value.

As a result, the data which is presented to the market, is not representative for the common market situation. We believe that these practices will undermine the credibility of VRFs in the European market and this is unacceptable. For this reason, JBCE believes that there is a need to limit the choice of indoor units.

Consequently, and although more stringent than the current interpretation to test with commonly sold indoor units, we believe that more reliable and comparable data will be presented to the market if market surveillance authorities can choose the indoor units for testing. As such, manufacturers need to ensure that a market surveillance test with any indoor unit passes the requirements. We believe that this approach is also in line with the target of the commission.

Nevertheless, as VRFs are very complex systems, there should be some limitations concerning the size, type and number of indoor units. These limitations should be reflected in the legal text and the transitional method. Also, these limitations will consequently be forwarded to TC113WG8 for inclusion in EN14511.

About JBCE:

Created in 1999, **the Japan Business Council in Europe (JBCE)** is a leading European organization representing the interests of more than 70 multinational companies of Japanese parentage active in Europe. Our members operate across a wide range of sectors, including information and communication technology, electronics, chemicals, automotive, machinery, wholesale trade, precision instruments, pharmaceutical, railway, textiles and glass products. Together, our member companies represented in 2013 global sales of 1.4 trillion euros. Building a new era of cooperation between the European Union (EU) and Japan is the core of our activities. www.jbce.org