Brussels, 31 March 2020

WG3 - Calculation
Position on the discussion paper

These comments reflect the position of ECOS, the EEB and the Coolproducts campaign regarding the discussion document shared in the context of the study providing technical assistance for the revision of space and water heater regulations.

1.3 – Discussion on the current calculation method

1.3.1 – Streamlining and clarifying the structure

Question 1: *Given that the approach and parameters in the Regulation(s) can now be considered largely proven, would it not be clearer and legally more robust to describe and integrate the complete test and calculation method as much as possible in the Regulation(s) instead of several source documents?*

The test and calculation methods should be described in the regulation as much as possible to avoid loopholes and to provide clarity. As much as possible, the elements of the transitional method should be included in the regulations.

1.3.2 - Accommodating hybrids

Question 2: *Independent of the exact method (e.g. as proposed hereafter or otherwise), would the experts agree that the issue should be handled comprehensively?*

We believe that hybrids (heat pumps and gas boilers) is a technology that is likely to be used more in the future and should be addressed comprehensively in the revised regulation. The definition of what the hybrid appliance is should be clarified, and clear efficiency requirements should be set: requirements should be defined with regards to the most efficient element of the hybrid appliance, so a hybrid appliance consisting of a heat pump combined with a boiler should be following efficiency requirements for the heat pump.[1]

1.3.3 – Calculation with harmonized test points

Question 3: *Do the experts support the logic (assuming that problems of costs etc. can be solved) of working with harmonised testing points for central hydronic space heaters that should perform the* same *function? If not, what is the alternative and how should we accommodate hybrids in the future?*

We agree with the principle of having the same 4 test points in the capacity range of 15-88% for all heaters as a short-term solution. The precise temperatures and weights will then have to be set based on best available data. In the example, it seems that return temperatures are set quite high for the

1 Given the current, lenient ecodesign requirements for heat pumps, a hybrid appliance with a heat pump that covers 90% of heat load, has a SCOP of 2,9 and combined with a boiler with 90% efficiency will meet the current ecodesign requirement for heat pumps of 110% efficiency. There is no air-water HT heat pump on the Danish market with such low SCOP (the heat pump with the lowest efficiency has a SCOP of 3). Even if the efficiency is lowered for heat pumps with the change to the compensation test method, most heat pumps on the Danish market will still meet current ecodesign requirements with a combination of heat pump and a boiler, as long as the heat pump provides 90% of the heat.

54% and 88% test points for normal temperature (HT) heaters. If there is no test at 100%, there should be a test to prove that the heater can supply 100% capacity on a continuous basis.

As a long-term test, the dynamic method that is under development by the German Federal Institute for Materials Research and Testing (BAM) should be considered.

1.3.4 – Inter- and extrapolation of test results for boilers

Question 4: *Do stakeholders find it acceptable to limit boiler testing to the suggested 4 points and derive the missing points through inter-/extrapolation? Are there suggestions for alternatives, e.g. further simplification at lowest temperature test point of HT and LT?*

To answer this question, we would need to know which extrapolation is needed and for what purpose? In general, interpolation based on 4 measuring points seems reasonable, but extrapolation must always be done with considerable care. This should be clarified before the next WG3 meeting.

1.3.6 – Solar and Energy Labelling

Question 6: *Do stakeholders agree using the SHE method, based on look up tables for the solar contribution.*

We support the method in general but would like to see some more evidence for how precise it is. There should be minimum requirements for storage and the controller.

1.3.7 – Cogeneration with supplementary heater

Question 7: *It seems preferable to have one method for assessing the efficiency of a cogeneration package and not two. It also seems preferable to weigh the efficiency in one way or another by using the relative proportion of the rated powers of the cogeneration heater and the supplementary heater. Do stakeholders agree? Discussion?*

We agree to keeping a single method to assess the efficiency of cogeneration packages instead of two.

1.4 – Calculation method for hybrids revisited

1.4.3 – Separate package method

Questions 9 (separate method): *Would stakeholders agree that despite the disadvantages and problems to be solved, it appears that the separate method is currently the most robust way forward? If not, what would be the alternative? What do stakeholders think of the proposed calculation method in the Task 6 report? Where is agreement and where are disputes?*

We would like to see results of a discussion on a combined method and the timeline to introduce it, before supporting a new, separate method.

1.5 – Ecodesign limits

1.5.2 – Limits for packages

Question 10 (short term limit): *What is the stakeholder's opinion of the proposed limit-calculation for packages? Alternative suggestion?*

See our answer to question 2 above.

1.6 – Other issues

1.6.1 – NO_X limits

Question 11 (NOx limits): *Are the corrections of the limit value by 1.30 for appliances tested with reference gas G30 and 1.20 for appliances tested with reference gas G31 acceptable? Should these corrections extend to gas-driven heat pumps (or cogeneration)?*

We would like to see the actual impact on air quality of having different correction factors for different gases concerning NO_X emissions.
NO_X emissions of gas driven combined heat and power appliances with internal combustion engines are significant, and the NOx limit of 240 mg/kWh should not be increased for different gases.

1.6.2 – Temperature control factors F(1)

Questions 12 (temperature controls): *Do experts agree with the proposals on the temperature control factor F(1), in principle?*

We agree in principle and would like to see proposals and evidence for setting higher and more realistic F factors for controls.

1.6.3 – Test conditions for sound power

Question 13 (sound power test conditions): *What is the practical proposal for the test conditions for sound power, i.e. how can it be defined clearly and without the risk of loopholes?*

Sound levels are usually higher when power is higher, but manufacturers (and suppliers) should ensure that sound levels are kept low when the appliance functions at lower power or at lower fan speed. A proposal could be to measure the sound levels at full load and set a requirement specifying that sound levels should not be higher at any lower power.

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