



Brussels, 13 March 2020

WG4 - Water heaters Position on the discussion paper

ECOS, the EEB and the Coolproducts campaign followed the preparatory study for the review of the water heater Ecodesign and Energy Labelling Regulations and provided [written comments](#) in May 2019. The following comments focus on the aspects discussed at the first meeting of the WG4 on the technical and impact assessment [study](#) carried out by VHK in 2020.

1.3 - Scope

Question 1: We are in favour with the proposal to define the scope based on the maximum load profile. However, the maximum load profile is declared by the manufacturer, but no test allows to verify whether a load profile higher than the maximum declared one can be met. Such tests should be developed to avoid misclassifications, as lower load profiles may have slightly lower efficiencies but also lower thresholds on the energy label. If the load profile declared by the manufacturer is below the maximum load profile that can be reached by the appliance, then this appliance could be misclassified on the energy label.

1.4- Definitions

Peak temperature

An improvement of this unclear definition is necessary, and we agree with the suggestion that the peak temperature should be the **minimum average temperature** over the tapping. The value of the peak temperature can be further discussed.

Off-peak products or hours

We agree to introduce a definition for both “off-peak water heaters” and “off-peak hours”. We however believe that electrical water heaters for which these definitions are relevant will progressively be replaced by smart products that will be operated during power generation peaks. A definition related to smart products should therefore be added too.

1.5 – Storage tanks

1.5.1 Storage tank test standard

Question 1: We are in favour of using only the standard EN 15332 as a storage tank test method. Standing losses should be measured at a fixed agreed temperature (we propose 55°C) for all applications. In case of extra renewable connections, 5W per pair of extra connection can be deducted from the measurement, allowing to reduce the maximum allowed heat loss over all storage vessels and thus avoiding the ban of storage vessels with additional renewable connections.

1.5.2 Minimum storage tank temperature

Question 1: Anti-legionella requirements should be aligned across the EU. Until then, we support the introduction of a voluntary test to assess the suitability of storage appliances for legionella thermal disinfection, indicating the additional annual energy consumption. We do not support the introduction of a minimum storage temperature requirement as it would discourage energy friendly anti-legionella innovations.

1.5.4 Storage tanks with better stratification

Question 1: Improved stratification is only a benefit to consumers if it enhances comfort or reduces energy consumption. Comfort is linked to the V40 value and energy consumption is linked to the 24-hour tapping test. We believe that there is no need to regulate stratification parameters.

1.6 – PFHRT – Passive Flue Heat Recovery Technology

Question 1: We support introduction of the PFHRT technology as it enables energy savings when heating water with central heating activated. The current standard (EN 13203-7) considers a 200 days winter without distinguishing climate zones (cold, average, warm). We propose to reconsider the number of winter days to 200 for colder climates, 150 for average climates and 100 for warmer climates. This will favour the technology without overestimating its benefits.

1.7 – Solar device – simpler package label calculation

Question 1: We are in favour of a simplified approach for the package label for solar, in the form of a look-up table, but would like a clarification about which method is used to translate the collector performance into the look-up table.

1.8 – Solar water heaters – label design

Question 1: Efficiencies of solar water heaters should be defined per climate zone, and this principle should also be applicable for heat pump water heaters applying different temperatures per climate zone.

Question 2: We are in favour of introducing three label zones on the solar label. This should then also be introduced for hot water heat pumps.

1.9 – Technology-specific ecodesign requirements

Question 1: Minimum efficiency values for instantaneous water heaters should be set in a way that would effectively ban the use of pilot flames. This technology cannot be considered anymore as “state of the art” and other technologies exist. Subsidy schemes could be introduced at Member State level to ease the transition towards more efficient technologies.

1.10 – HP test conditions

Two generic comments on the testing of heat pumps:

- **Ventilation air as heat source**

With the general improvement of the insulation of buildings, the parameter of ventilation becomes more significant in the calculation of heat loss for dwellings, and over-ventilation is not considered in existing standards. Standards should be improved to penalize units requiring a high air flow and rewarding units requiring low ventilation air flows.

- **Non heated space and indoor air**

Heat pumps should not be considered to operate in a non-heated space with a limited amount of air that will automatically cool down below 15°C (for example a garage). Indoor air should not be a source for heat pump water heater and should not be considered to be renewable because the cooling effect from the heat pump needs to be compensated by a heater.

1.10.2 - Brine temperatures

Question 1. The regulation should introduce multiple brine temperatures per climate. It was proposed to increase the brine temperature from current 0/-3 °C to 5/2 °C and maintain this brine temperature set for all climate zones. This will give an advantage to heat pumps using brine as a source compared to air source heat pumps. During the coldest winter days, the COP of an air source heat pump reduces dramatically, and brine source heat pumps have a more constant COP. This avoids overloading of the electricity grid in cold winter days.

1.10.3 DHW HP combinations not (sufficiently) covered by regulation

Question 1. Heat pump generators combined with an existing storage are an excellent solution from the material efficiency point of view but assessing the performance of the final assembly is very difficult. The heat pump generator should be rated based on its performance as a generator only, to allow comparison with other heat pump generators.

1.11 - NO_x requirements

1.11.1 For 3rd family gases

We are in favour of the proposal to set different NO_x emissions limits per gas types.

Question 1-a: We are in favour of using the corrections of the limit value by 1.30 for appliances tested with G30 and 1.20 for appliances tested with G31.

Question 1-b: These corrections should extend to gas-driven heat pumps and cogeneration water heaters.

1.11.2 NO_x limits for solar water heaters or combination heaters

Question 2: NO_x emissions of combination heaters operating in water heating mode should be regulated. The water heating mode of a combination heater can represent up to 25% of the annual

gas consumption of a combination heater. Double NO_x testing is not expected to be problematic, as the unit only needs to be switched to water heating mode to perform the measurement.

Other issues we would like to raise to the WG

Heat recovery units

In newly built houses a heat recovery unit is often installed, which uses the drained hot water to preheat cold water for showering. CLC/TC 59X WG 4 on water heaters discussed the possibility to include such units in the standards, allowing to improve the efficiency of the electrical hot water. A separate standard should be requested by the European Commission and developed to assess the performance of these units.

Fictitious heaters

Heat pump water and space heaters standards consider fictitious electrical heaters. This undermines the definition of a maximum load profile: the heat pump heats up to a certain temperature, and the fictitious heater takes care of the peak temperature. The fictitious heater should be included into the test and the additional electrical heat input be measured rather than just be calculated theoretically.

Instantaneous water heaters and water saving taps and showers

It has come to our attention that some instantaneous gas fired water heaters need a minimum flow to be fired, up to 5L/min. When using certain types of taps or shower designed specifically to save (hot) water this minimum flow is not reached, and the water heater does not heat the water. This issue should be considered in the regulation as water saving taps and showers are a good solution to save energy and water.

Contact:

ECOS – European Environmental Citizens' Organisation for Standardisation
Mélissa Zill, melissa.zill@ecostandard.org