How to consider hybrid units (i.e. hybrid heat pumps, hybrid boilers)?

This paper aims to provide feedback from EHI to the ongoing review study of Lot 1 and 2, specifically to the questions raised in VHK WG3 (Calculation). It replies to question number 2, VHK discussion document for 1st WG3 meeting, p. 3.

First of all, we need to differentiate between ‘combined heating solutions’ that are put together on site, for example by installers, and the case of ‘hybrid units’ placed on the market by suppliers, clearly identified as a single product equipped with a common controller.

The package label has the merit to provide clear rules to determine the energy label of combined heating solutions. This applies, for example, when two or more heat generators and devices are put together, i.e. by installers or wholesalers, to create the so-called “package”, as defined by Regulation 811/2013.

When it comes to packages, we suggest that:

- The Ecodesign limits should be met by each heat generator, according to the technology. This guarantees that only efficient heating appliances are installed;
- For the label: apply the package label. The energy efficiency of the package should be calculated, based on a preferential heat generator;
- The supplier should provide the package label, as well as the individual product labels.

On the other hand, we need to consider the case of hybrid units (i.e. also referred to as hybrid heat pumps or hybrid boilers) that are placed on the market by suppliers (i.e. manufacturers), as one single product equipped with a common controller. The consideration of such product ultimately requires the definition of a new product category in the respective Ecodesign regulation. In any case, the current regulatory loophole concerning the definition of what corresponds to a hybrid appliance needs to be closed accordingly. The current rules have led to uncertainties in the market and raised questions over what is still permitted and what not.

Per definition, this new product (i.e. hybrid unit) shall meet the following requirements:

- combine the heat pump, the boiler and a common controller (without the need to define a preferential heater) as one product in one or multiple casings;
- fulfil (a) new specific Ecodesign minimum efficiency requirement(s) of hybrid units – see explanatory note below*;
- still apply the Ecodesign limit of boilers (i.e. integrated gaseous or liquid fuel heat generator) when the heat pump is in off mode (ηs≥86% + current NOx limits) to avoid a regulatory loophole for inefficient appliances;
• fulfil the minimum water heating efficiency requirements $\eta_{WH}$ as valid for boilers with a combi function, divided into “storage” and “instantaneous technologies”;
• fulfil the same sound power requirements currently valid for heat pumps;
• and be provided with a specific Energy Efficiency Label.

*Please note that it remains to be evaluated whether a single threshold value for the Ecodesign minimum efficiency requirement of hybrid units is the right approach, or if policymakers should also consider a rather variable approach (i.e. individual threshold to be adapted to specific hybrid configuration). However, this question requires further technical analysis and a sound assessment.

As regards testing, EHI supports the use of the new standard EN 14825:2018; comprising both, the separate and combined testing method. The evolution of the testing method to include some hybrids not covered yet is examined in the joint CEN/CENELEC TC 113 / TC 109 WG.