(Draft) Minutes 2\textsuperscript{nd} meeting

Working Group 4 'Water heaters'

Meeting date: Thursday 25 June 2020, 10:30–17:00

Place: Webmeeting (Webex)

The webmeeting was attended by a maximum of 56 participants. The list of participants is shown in Annex I. Annex II shows comments made in the chat window.

Note: The topics below follow the structure of the presentations (available at www.ecoboiler-review.eu) and do not repeat the substance of the slides (unless required for context).

1 Opening

Martijn van Elburg (VHK, chair/presenter of meeting) starts the meeting, welcomes everybody and presents the draft agenda. Veerle Beelaerts (policy officer EC) explains that Consultation Forum meetings (together with space/combination heaters) are scheduled for the first quarter of 2021, and that access to the EPREL database will not be possible to until at least after the summer. Martijn van Elburg continues with a quick introduction of the study and today’s topic: the draft interim report for the revision of ErP regulations for water heaters.

2 PEF

Martijn van Elburg (chair) explains that this study is not meant to revise the pef (pef = primary energy factor, or conversion coefficient). Paolo Basso (EHI) explains that EHI’s comments regarding the pef relate to (the impacts of) the setting of minimum requirements based on a revised pef and not to the calculation of the pef value itself.

3 Scope

As regards the suggestion to exclude from the scope products capable of 3XL and 4XL (but with Prated < 70 kW) Laure Meljac (NIBE) replies that the consequence of this, if applied to combination heaters as well, that such products either remain completely unlabelled (excluded for both water heating and space heating), or only is labelled for the space heating part (and information also relates to space heating only).

4 Technology specific requirements

Martijn van Elburg (chair) presents the proposal for \textit{technology specific minimum} requirements, starting with electric WH, then fuel WH and ending with combination heaters.

Gunnar Olesen (ECOS) prefers the \textit{technology neutral} approach as the proposed requirements for large ESWHs are weaker, whereas a cost-effective efficiency level of 60-64\% was identified before.
William Walker Rosevinge Rode (Norway) disagrees and says that besides lower costs, ESWHs also serve a purpose in maintaining grid stability etc. Norway can accept the 44% for XL and larger provided the Qcor is maintained.

Hans-Paul Siderius (The Netherlands) disagrees with a technology specific approach, as this weakens requirements for certain products without the possibility to rescale. If requirements need revising only because of a change in pef, then technology specific requirements are not necessary. He added that if there seems to be flexibility to deviate from the core principle of having technology neutral requirements, this flexibility should then also apply to (the date set for) rescaling.

Jérôme Martel (Groupe Atlantic) reiterated the significance of having requirements using two decimal points. Carlos Lopes (Sweden) is supportive of the change, but would like to see possible benefits or drawbacks calculated.

Paolo Basso (EHI) says that the pef correction and rescaling should be kept separate and repeated that rescaling should occur in 2016, not before. He added that the impacts of weaker requirements for larger ESWHs would be limited due to low sales.

Carlos Lopes (Sweden) is surprised by the position of The Netherlands and adds that the technology specific approach allows setting relevant limits for every technology. Sweden accepted a ban on larger ESWHs as analysis showed that alternatives have lower costs. If requirements are weakened Sweden would like to see a thorough analysis for that.

Christian Koch (Clage) asked why the requirements for small EIWH were made more stringent; a direct pef-conversion would result in the present 32% limit (3XS to S) to be converted into 38.09%, not 42%.

Martijn van Elburg explains, following a question by Stéphane Rossato (AFGAZ/ENGIE), that within the group of fuel WH the FIWH with permanent ignition burners are not directly banned, but the efficiency requirements are on a level that generally cannot be reached by such appliances. Pedro Abrantes (Bosch TT) agrees. Paolo Basso (EHI) explains a typo in the table for liquid fuel fired water heaters in XXL class: the value of 59% should be 60%.

Paolo Basso (EHI) warns that the products remaining after removal of FIWH with permanent ignition burners are more costly. Martijn van Elburg (chair) replies that when assessing possible cost effects he was not able to find evidence that there is a strong relation: consumer prices appear dependent on size, brand, promotions, etc. rather than ignition burner technology.

Wilhelm Wall (Vaillant) says the market for FSWH is a declining market, and models with a permanent ignition burner have been redesigned, also because of NOx requirements.

Gunnar Olesen (ECOS) states that it makes no sense to have minimum energy efficiency requirements for thermally driven HPs that are lower than those for FIWH.

Regarding combination heaters William Walker Rode Rosevinge Rode (Norway) states that Joule electric combination heaters should be included with values identical to the dedicated equipment.

Martijn van Elburg (chair) asks for more information on performances of B1 combination boilers specifically.
Gunnar Olesen (ECOS) supports setting requirements at such levels that require PFHRD to meet them, and asks for an LCC analysis to support this.

## 5 Requirements for heat generators

Martijn van Elburg (chair) discusses possible requirements for heat generators for water heater packages.

Michèle Mondot (CETIAT) says that minimum efficiency requirements should not be proposed as there is not sufficient information on actual performances and efficiencies. She proposes to start with information requirements first.

Martijn van Elburg (chair) mentions the possible loophole of not regulating such products (when placing a heat generator and separate tank on the market is easier than meeting requirements for fully configured water heaters).

Hans-Paul Siderius (The Netherlands) is not convinced this loophole will materialise, and if so, it can be addressed in forthcoming revisions.

## 6 Test conditions

### 6.1 Peak temperature

Ingo Seliger (Viessmann) states that the definition in the present regulation is adequate and that performance aspects can be handled in EN 13203-1.

Alain Xhonneux (APPLiA) adds that the proposed definition in the interim report changes the test conditions (for ESWH as regards duration of peak temperature reached, for HPWH as regards the actual temperature being reached).

François-Yves Prévost (Aldes) states that certain types of WHs cannot reach the 55ºC. Hans-Paul Siderius (The Netherlands) argues that such products are subsequently no water heaters in the meaning of the regulation. Gunnar Olesen (ECOS) agrees.

Jérôme Martel (Groupe Atlantic) says that the method in standard EN 16147 does not give credits as the COP assumed for the ‘missing’ part is just COP=1. He adds that the ‘out-of-the-box-mode’ for testing could even lead to higher energy consumption as customers may not reduce the storage temperature when putting the appliance into service.

Michèle Mondot (CETIAT) says that the 55ºC is a ‘basin-type’ tapping and no user will use 55ºC water. She adds that a similar situation (correction of supplied heat) exists for space heating where the design temperature may not be reached and the ‘missing heat energy’ is added in the calculation.

Martijn van Elburg (chair) says it is mainly a matter of principle that products that offer the same functionality (the load profile indicated) should be rated according to the same rules. He says the products should be capable of being set at higher storagee temperatures when tested.
6.2 Test conditions for heat pumps

Pia Rasmussen (Denmark) asks why it is proposed to change the exhaust air condition to 20/15ºC. François-Yves Prévost (Aldes) replies that this is because in dwellings moisture is added to indoor air, raising the humidity level. Pia Rasmussen (Denmark) asks if the extra costs for adding another brine temperature have been taken into account. The chair replies that HPWHs using brine are tested at 0ºC and the same product often is tested using water of 10ºC and that it is proposed that during a transition period the required 5ºC brine temperature can be based on the average of the performance in the above two conditions.

Gunnar Olesen (ECOS) states that the ventilation rates currently proposed for exhaust air heat pumps are too high (ventilation is often at much lower air flow rates).

Paolo Basso (EHI) says that further work is needed.

Valérie Lammerant (Daikin) asks whether the cost aspect has been considered and whether the same test conditions will apply to Lot 1 products. The chair replies that having the same test conditions for Lot 1 products is logical, but this needs to be discussed in that context as well.

Jérôme Martel (Groupe Atlantic) is concerned for small HPWH using "indoor air". He proposes to limit the applicable flow rates etc. A proposal will follow.

Michèle Mondot (CETIAT) highlights that the "unheated space" 15/12ºC condition is indeed for unheated space and reflects on the 'chicken-and-egg' situation where a regulation ideally is based on existing test standards, and test standards are ideally based on existing regulations. Having no test conditions in standards should not mean that it cannot be regulated, because standards can suggest/describe test conditions.

6.3 Test conditions for separate storage tanks

The chair explains that although in the regulation reference is made to a test condition of storage tanks this test condition does not exist. The condition is however needed to ensure that the minimum requirements are indeed based on a test in accordance with the correct test conditions. Comments in written form are welcomed.

[Lunch break from 12:30 to 13:30]

7 Calculation of water heating efficiency - Qcor

The chair explains the proposal to remove Qcor as it simplifies the calculation and is not a parameter influenced by Ecodesign.

Laure Meljac (NIBE) notes that removal would level the playing field as there is no Qcor for combination heaters.

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1 See Definition 6 in 814/2013: (6) ‘standard rating conditions’ means the operating conditions of water heaters for establishing the rated heat output, water heating energy efficiency, sound power level and nitrogen oxide emissions, and of hot water storage tanks for establishing the standing loss; [emphasis: VHK]
William Walker Rosevinge Rode (Norway) disagrees and says that removal of Qcor requires reassessment of ecodesign limit values.

Alain Xhonneux (APPLiA) states that the removal of Qcor has little benefits and big impacts on efficiencies calculated and advises to keep the Qcor. This is supported by François-Yves Prévost (Aldes).

8 V40, Sound requirements

No change in requirements proposed, no comments received.

9 NOx requirements

There was some confusion about the correctness of the correction factors for G30 and G31 but both Nourreddine Mostefaoui (CETIAT) and Malgosia Rybak (Liquid Gas Europe) confirmed they are correct as shown in the presentation.

Nourreddine Mostefaoui (CETIAT) asks if an appliance can use multiple types of gas, which requirement applies. Martijn van Elburg (chair) responds that the appliance would need to meet all the limit values for gases the appliance is declared fit to use.

Malgosia Rybak (Liquid Gas Europe) states that for biogases the same emission limit values would apply.

10 Standing loss requirements for storage tanks

Paolo Basso (EHI) disagrees with the stricter limits for storage tanks from class C to B. This is supported by William Walker Rosevinge Rode (Norway), Valentina D’Acunti (Immergas), Wilhelm Wall (Vaillant), Jérôme Martel (Groupe Atlantic) and Melanie Auvray (EHPA).

Hans-Paul Siderius (The Netherlands) asks where the least life cycle point is situated.

Mélissa Zill (ECOS) supports the stricter requirements. Gunnar Olesen supports the correction applied to multivalent tanks and asks for the life cycle costs of the tanks for higher requirements.

11 Information requirements

The chair is asking for written comments. Laure Meljac (NIBE) says that if colder and warmer climates are optional the information may be lost. The chair says this may not have been intentional and will look into it.

Michèle Mondot (CETIAT) remarks that we should not go from mandatory information to optional (for RACs it went from optional to mandatory and we should be consistent).

Pedro Abrantes (Bosch TT) mentions that in FIWH there is a test for 25ºC temperature raise.
12 Verification tolerances

Martijn van Elburg (chair) states that conclusions of the ECOtest project will be relevant for deciding on revised verification tolerances (the presentation mentions that tolerances for storage tanks may need to be increased). Written comments are welcome.

13 Conformity assessment procedures

Paolo Basso (EHI) states that EHI prefers 3rd party conformity assessment for the space heating function only, also because the energy consumption of water heaters is less than for space heating.

Laure Meljac (NIBE) and Melanie Auvray (EHPA) ask why 'module C1' was selected instead of 'C' and why a different regime was proposed. Martijn van Elburg (chair) thinks the C1 must have been a typo in the draft report. The difference in approach for SMEs was to allow a simpler procedure for them.

Some discussion arose regarding the coverage of gas (fuel) appliances. The proposal is to cover these appliances for energy efficiency by 3rd party conformity assessment module B+C, as is already the case for gas safety.

Valérie Lammerant (Daikin) asks why other modules are not proposed and whether the same proposal will be made for Lot 1 as well. Martijn van Elburg (chair) responds that the risks involved are different. Regarding other modules, written comments are welcomed.

14 Material efficiency requirements

Louis Oillon (EuRIC) repeats the issues identified in the previous study regarding the presence of substances with ozone depletion potential (ODP) in foams and refrigerants, and problematic separation of foam from metal. Regarding ODP the chair replies that this is a legacy issue, relevant for old equipment that currently is treated as waste, but the equipment that now enters the market has no ODP issues anymore. As regards separating the foam from metals the chair would like to see a product specific standard in place that allows regulating on recyclability aspects. Jérôme Martel (Groupe Atlantic) adds that the foam-metal bond is necessary as it increases product rigidity – making it more durable.

Valérie Lammerant (Daikin) asks for caution for making spare parts available to end-users. Melanie Auvray (EHPA) agrees with Valérie Lammerant and would like to see a clearer proposal on recyclability and recoverability and questions whether it can be handled in this revision. Martijn van Elburg (chair) repeats his request for assessments of recyclability and/or recoverability based on current generic standards, even if only provisional.

Hans-Paul Siderius (The Netherlands) accepts the proposed material efficiency requirements but questions the need to have spare parts available for end-users.

Paolo Basso (EHI) says repairs should be limited to professionals and that product specific standards for recyclability/recoverability (and for any requirement) a product-by-product assessment is needed.. Martijn van Elburg (chair) repeats a request for results of material efficiency testing.
Mélissa Zill (ECOS) says that recyclability should be handled in the regulation. She reminds everyone that the generic (horizontal) standards have been published recently and says that the European Commission needs to issue a request for product specific standards. Regarding spare parts she asks for caution in ruling out availability of spare parts for end-users (some repairs may be possible), for F-gases she believes ecodesign can be complementary to the F-gas regulation.

Various other experts from industry question the requirement to make certain parts available to non-professional buyers. The chair invites the stakeholders to come up with suggestions for improvement of the text.

15 Labelling requirements – label design

Pia Rasmussen (Denmark) accepts the introduction of three climate conditions on the label and the indication of the efficiency value. She questions the need for the ‘smart symbols’ (put in product fiche).

Michèle Mondot (CETIAT) would like to see information regarding NOx emissions shown on the label. According Hans-Paul Siderius (The Netherlands) such information can be presented on the label, following the 2017 framework revision. Michèle Mondot (CETIAT) does not think using the "ice-symbol" for a heating product is a good idea.

Jérôme Martel (Groupe Atlantic) states that the label should be kept simple and proposes to put the information on ‘smart’ aspects and the V40 on the fiche.

Valérie Lammerant (Daikin) agrees with the efficiency values on the label, but not the three climate efficiencies (as these are already in the fiche) and thinks the ‘smart symbols’ are an overload.

Gunnar Olesen (ECOS) agrees with the three climate conditions on the label and would accept one simple symbol for ‘smart grid’ as this can mean the product can use cheaper power. He would also support a rescaling of label classes.

Paolo Basso (EHI) proposes to limit the number of extra label classes on the label to maximum A++ and not A+++ as this would mean that a lower class would be removed, thus effectively rescaling the label (A+++ is okay for packages). He adds that the off-peak definition should remain, as it is important in certain markets and determines how products are tested. He furthermore does not agree with showing the efficiency values, favouring instead the annual consumption values, and prefers keeping the label simple.

Ingo Seliger (Viessmann) agrees with the climate conditions for heat pumps and adding NOx on the label. He asks whether the package calculation can take into account PV and batteries supplied with the water heater. The chair replies that the latter is difficult to cover in the present study.

Melanie Auvray (EHPA) supports the efficiency value (%) on the label, for average conditions, but not for the other conditions. She prefers the label to be kept simple. She does not support adding the A+++ class as this results in rescaling. And she mentions a need to define off-peak (so that it can be considered in the label).
Laure Meljac (NIBE) says that either etas_wh or $\eta_{wh}$ may be too complicated to understand and that it could be easier for the end-user if the efficiency was written in the arrow.

Alain Xhonneux (APPLiA) does not support the indication of the storage volume on the label, as the load profile already provides relevant information. He does not support the inclusion of the 'smart symbols' and supports the indication of the water heating efficiency value.

Valentina D’Acunti (Immergas) prefers a simple label without 'smart symbols', keeping annual energy consumption (instead of $\eta_{wh}$), and the EU climate map (as opposed to the simplified warmer/colder symbols), and only an additional A++ class (as A+++ is empty).

Mélissa Zill (ECOS) says the rescaling of label classes should start as soon as possible as most products are present in max. 4 classes.

Carlos Lopes (Sweden) also agrees with faster rescaling, agrees with the efficiency value on the label, the 3 climate conditions and NOx values. As regards 'smart' symbols he is generally positive but prefers a horizontal approach as the issue exceeds the water heater scope.

Wilhelm Wall (Vaillant) says the storage volume has relevance for EPBD related calculations and should be in the fiche but not on the label. As regards the 'smart grid' he finds this too early as there is no infrastructure yet in place. He disagrees with the efficiency value on the label.

The chair reminds all that for instance the A label in the popular XL class is spaced apart by approximately 43% efficiency points, the difference between an 80% or 123% efficient appliance. The best product in class A has a much lower consumption than the worst product in the same class (actually, the best product has a consumption of only 2/3 of the worst).

Hans-Paul Siderius (The Netherlands) agrees with earlier rescaling, mentions that 'where applicable' the energy consumption should be shown on the label and prefers less symbols on the label. He rather sees a proper rescaling rather than a 'cosmetic' change on the short term and another revision just two years later.

Paolo Basso (EHI) argues against early rescaling as 1) heaters are usually not sold in a shop-floor situation with different competing products next to each other; 2) efficiency comparison is already possible with the current classes; 3) there is a large group of installed inefficient appliances that needs to be replaced, which would be hindered if current best products are downgraded.

Gerard van Amerongen (Solar Heat Europe) agrees with the introduction of three conditions and says that a solar water heater can achieve A+++ in a warmer climate.

Matteo Rambaldi (APPLiA) opposes earlier rescaling, disagrees with the 'smart symbols' except for the existing 'off peak' symbol, does not agree with storage volume (V40) on the label (fiche only), and does not agree with the efficiency value on the label and prefers the annual consumption (and mentions this is required by 1369/2017).

Martijn van Elburg (chair) asks manufacturers that have applied for the "SG ready" label (in Germany) to come forward with how this works in practice (definitions, verification) as the regulation should include this even if it is only information for the fiche.
16 Package calculation

16.1 Solar / two methods

Martijn van Elburg (chair) gives the floor to Pedro Dias (Solar heat Europe), followed by Alessandro Fontana (Assotermica) to present proposals for a simplified method to calculate the solar contribution and the combined product efficiency (presentations available online).

The Solar Heat Europe method requires the GTY of a collector unit in a climate zone, system size, storage tank efficiency, combined with the load profile and the (back-up) water heater efficiency. Tables allow an easy identification of the value to calculate the solar package efficiency.

The Assotermica method is implemented (by the dealer) using an equation which includes the GTY of a collector unit in a climate zone, system size, storage volume size, storage tank efficiency, and correction of pump/natural circulation, combined with the load profile and the (back-up) water heater efficiency. Alessandro Fontana (Assotermica) explains that the lookup tables (as shown on the slide) is not how Assotermica sees the method implemented (the equation is preferred).

Assotermica’s method makes visible the possible effects of choosing a wrong storage volume (can be an existing tank). Solar Heat Europe experts state that there is a range in store volume (per m$^2$ collector or specific GTY) that has only limited effects on overall efficiency. The relevance of using the actual storage volume instead of a volume based on rules is heavily discussed by experts, both sides agreeing however that a 'good supplier/installer' would choose the correct/reasonable tank size.

Ingo Seliger (Viessmann) repeats he prefers a comprehensive method that takes into account the actual tank size.

Stefan Abrecht (Solar Heat Initiative) assumes that large companies offer packages with correctly sized storage tanks, so there is no need to have it as variable in the calculations. He mentions that the selected tank size can be shown on the table. Tank losses are covered in a correction factor.

Martyn Griffiths (WaterHeatingUK) says that software will replace the lookup table and expects that installers will want to select a tank that is "good enough", therefore he prefers the consideration of exact tank size in the equation.

Gerard van Amerongen (Solar Heat Europe) suggests to put limits to the size of tank in relation to system size.

Valentina D’Acunti (Immergas) prefers the Assotermica method as the tank size is an input. In general she also would like to see guidelines on how the system should be sized (system size in relation to load profile, etc.).

Pedro Dias (Solar Heat Europe) says a balance needs to be found in simplicity for the installer/dealer, and consistency for the manufacturer. The tables shown are just to show how the equation works. He mentions that the Excel file with the calculations is public.

16.2 Separate heat generators

Laure Meljac (NIBE) asks for clarification. Martijn van Elburg (chair) explains it is based on the Guidelines 2018 that are limited to solar packages. The proposal is to include heat generators and
add tanks but without solar. She confirms that the equation for heat pumps preferably includes the heating capacity ($P_{\text{rated}}$). Michèle Mondot (CETIAT) says that TC113/WG10 is discussing the calculation. Valentina D'Acuti (Immergas) will send a proposal. Ingo Seliger (Viessmann) agrees to include such heat generators.

François-Yves Prévost (Aldes) says a distribution loop has a considerable influence on efficiency. Laure Meljac (NIBE) says the 60/45°C (outlet/inlet) test conditions reflect application in a DHW distribution circuit (‘loop’). Michèle Mondot (CETIAT) also mentions the CO2 heat pump conditions of 60/15°C.

16.3 DWHRD drain water heat recovery

Gunnar Olesen (ECOS) supports the inclusion but would like to receive more documentation or evidence of the performance. Paolo Basso (EHI) does not support the inclusion of the DWHRD in a package calculation as it is more a matter of building regulations and there is no EU standard yet available. Ingo Seliger (Viessmann) would like to see the LCC. Martijn van Elburg (chair) replies that, since this is for information only, the life cycle costs of the application are not relevant.

Martijn van Elburg (chair) says the basic performance of the device is tested using a national standard and asks stakeholders for comments on which tappings they feel are eligible for heat recovery by such devices.

William Walker Rosevinge Rode (Norway) is cautious as there are issues with fouling and costs. Alessandro Fontana (Assotermica) doubts the cost benefit of such devices.

16.4 PFHRD passive flue heat recovery

[This discussion provides input for the Working Document for combination heaters]

Martijn van Elburg (chair) mentions that the combination heater is probably the most significant water heater in the EU with annual sales of approximately 4 million units per year. The PFHRD can save a significant amount of energy if made mandatory (by increasing the minimum water heating efficiency), due to its scale of application.

Paolo Basso (EHI) supports the inclusion of the PFHRD in a package calculation, but says the technology should not be made mandatory, because of low savings.

Gunnar Olesen (ECOS) supports the inclusion and would like to see it mandatory for class L and larger.

Gideon Blij (ATAG) says the technology is implemented in many products of ATAG but he does not want to see it made mandatory as there are more solutions for good DHW efficiency. Nonetheless he supports / confirms the position as presented by Peter Cool of Intergas (see position papers for WG4 on the project website). The standard for PFHRD assessment is at CEN enquiry and close to finalisation.
Pedro Abrantes (Bosch TT) mentions the position paper of Bosch TT\(^2\) and does not support this as mandatory technology as it is not cost-effective according Bosch TT.

Martijn van Elburg reminds all that the combination boiler is the most important water heater in the EU with over 4 million sales annually. Knowing that the goals of the EU for 2030 (less than a decade away!!!) are to reduce GHG emissions by 40%, increase the share of renewables by 32% and efficiency by 32.5%, it seems of utmost importance to apply all relevant technologies in order to achieve these goals.

17 Any other business

Gunnar Olesen (ECOS) asks:
- requirement for minimum continuous flow, for instance in combination with low flow shower heads;
- consideration of circumvention, for instance that test conditions and settings for establishing the energy efficiency should be the same as for establishing the water performance;
- certain verification tolerances made stricter if shown possible by the ECOtest project;
- for reconsideration of maximum air flow rates for exhaust air heat pumps (appear to be too high, should be combination of indoor and outdoor air).

Ingo Seliger (Viessmann) says that in light of the 2030 targets the possibility of a package with PV and batteries should be considered. Martijn van Elburg (chair) says this request is probably too late for this revision.

Nourreddine Mostefaoui (CETIAT) reminds stakeholders that in the beginning of ErP the V40 was measured with burner 'off', but current tests allow the burner to be 'on' during a V40 test, possibly resulting in infinite V40's. Martijn van Elburg (chair) asks for opinions of stakeholders in written form whether the burner should be 'on' or 'off'.

William Walker Rosevinge Rode (Norway) repeats that ESWHs should remain on the market, also as thermal 'batteries' for the grid. Alain Xhonneux (APPLiA) says, in the context of banned large ESWHs, that both gas (fuel) and electricity have a role in cleaner warm water production.

18 Closure

The chair says the next step is a Consultation Forum meeting foreseen for the 1\(^{st}\) Quarter of 2021, possibly combined with a meeting for space and combination heaters. A third WG4 meeting is currently not foreseen. It may be that bilateral meetings on specific topics will take place.

For the space/combination heaters dealt with by WG1/2/3 we hope to have a face-to-face meeting end September / begin October 2020, possibly combined with bilateral meetings as well.

Deadline for written comments on this meeting (and/or the Draft Interim Report) is one month: **Friday 24 July 2020**, end of business hours.

The meeting is closed.

\(^2\) [https://www.ecoboiler-review.eu/downloads/20200221_WG4_BoschTT_comments-info_on_PFHRD.pdf](https://www.ecoboiler-review.eu/downloads/20200221_WG4_BoschTT_comments-info_on_PFHRD.pdf)
## Annex I – List of participants

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<thead>
<tr>
<th>Present</th>
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<td>Adeline Wagner</td>
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<td>Alain Xhonneux</td>
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<td>Alan Clarke</td>
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<td>Alessandro Fontana</td>
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<td>Alexandra Tudoroiu-Lakavice</td>
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<td>Andreas Bohren</td>
<td>SPF/Solar Heat Europe</td>
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<td>Angelo Mancini</td>
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<td>David Zijdemans</td>
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<td>Ivan Malenković</td>
<td>Fraunhofer</td>
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<td>25</td>
<td>Jérôme Martel</td>
<td>Groupe Atlantic/EBI/EBP</td>
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<tr>
<td>26</td>
<td>Kirsti Hind Fagerlund</td>
<td>Norway representative</td>
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<tr>
<td>27</td>
<td>Laure Meljac</td>
<td>NIBE/EHPA</td>
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<td>28</td>
<td>Louis Oillon</td>
<td>EuRIC (recyclers Europe)</td>
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<td>29</td>
<td>Malgosia Rybak</td>
<td>Liquid Gas Europe</td>
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<td>30</td>
<td>Marie Baton</td>
<td>CLASP</td>
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<td>31</td>
<td>Martyn Griffiths</td>
<td>WaterHeatingUK/EBI</td>
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<td>32</td>
<td>Matteo Rambaldi</td>
<td>APPLiA</td>
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<td>33</td>
<td>Melanie Auvray</td>
<td>EHPA</td>
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<td>34</td>
<td>Mélissa Zill</td>
<td>ECOS</td>
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<td>35</td>
<td>Michèle Mondot</td>
<td>CETIAT/EBI/EHPA</td>
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<td>36</td>
<td>Niels Smeets</td>
<td>Belgium representative</td>
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<td>37</td>
<td>Noureddine Mostefaoui</td>
<td>CETIAT/EB1</td>
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<td>38</td>
<td>Paolo Basso</td>
<td>EHI</td>
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<td>39</td>
<td>Pedro Dias</td>
<td>Solar Heat Europe</td>
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<td>40</td>
<td>PedroMiguel Abrantes</td>
<td>BBT/EBI</td>
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<td>41</td>
<td>Pia Rasmussen</td>
<td>Denmark representative</td>
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<td>42</td>
<td>Ralf-Rainer Nolte</td>
<td>Stiebel Eltron/APPLiA</td>
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<td>43</td>
<td>Sandrine Devos</td>
<td>Eurofuel</td>
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<td>44</td>
<td>Stéphane Rossato</td>
<td>AFGAZ / ENGIE</td>
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<td>45</td>
<td>Spyridon Pantelis</td>
<td>REHVA</td>
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<td>46</td>
<td>Stefan Abrecht</td>
<td>SolarHeatInitiative/Solar Heat Europe</td>
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<td>47</td>
<td>Stephan Fischer</td>
<td>Uni Stuttgart/SHE</td>
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<td>48</td>
<td>Valentina D’Acunti</td>
<td>Immergas/EBI</td>
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<td>49</td>
<td>Valérie Lammerant</td>
<td>Daikin/EBI</td>
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<td>Name</td>
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<tr>
<td>50</td>
<td>Wilfried Linke</td>
<td>BDH</td>
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<tr>
<td>51</td>
<td>Wilhelm Wall</td>
<td>Vaillant Group/EHI</td>
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<tr>
<td>52</td>
<td>William Walker Rosevinge Rode</td>
<td>Norway representative</td>
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<td>53</td>
<td>René Kemna</td>
<td>VHK</td>
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<td>54</td>
<td>Martijn van Elburg</td>
<td>VHK</td>
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<td>55</td>
<td>Pepijn Wesselman</td>
<td>VHK</td>
</tr>
<tr>
<td>56</td>
<td>Veerle Beelaerts</td>
<td>EC, DG ENER, C4</td>
</tr>
</tbody>
</table>
Annex II – Chat of webmeeting WG4

(private messages, ‘asking for the floor’ and non-relevant messages about, mic's, audio and webcams have been removed)

10:17 AM from Martijn van Elburg to everyone: Good day everybody. The session presentations will start at 10:30.

10:46 AM from William Walker Rode to everyone: Norway has comments on limit, Qcor and combi heaters


10:48 AM from ECOS - Mélissa Zill to everyone: Here’s the source

11:02 AM from William Walker Rode to everyone: The reason the Norwegian Government welcomes technology specific requirements: This issue is cost-effectiveness over the lifetime, LCA consideration. ESWH in Norway have an average life expectancy of 25 years, I’m sending the analysis to Martijn van Elberg

11:12 AM from Gunnar Olesen to everyone: Why do VHK propose lower efficiency for fuelled HPWH size XL than for FIWH?

11:16 AM from Groupe AFG - BNG - Certigaz to everyone: Martin: what is the conclusion on Pilot Flame? thks

11:19 AM from Gunnar Olesen to everyone: We find that there is no need to keep fuelled HPWH on market if they are less efficient than the cheaper FIWH

11:22 AM from William Walker Rode to everyone: Norway: as you have a new table for electric (joule) COMBI I think it is sensible to keep them in line with the ESWH. It does exist as an entry level into hydraulic heating and water heating

11:30 AM from William Walker Rode to everyone: Norway: the consequence of banning these electric combi boilers will be that consumers need to buy to boilers, one for heating one for water heating. Most likely developers ans consumers will use direct electric heating, as this will be much more affordable, but as investment and in use, LCA calculations will probably show much more GWP with two boilers and HP or solar ready

11:30 AM from Gunnar Olesen to everyone: I just want to say that we support use of PFHRT for larger combin to increase efficiency,. We think stakeholders want to see a LLC calculation for this.

11:48 AM from Christian Koch CLAGE GmbH to everyone: 55°C are not applicable for 3SX to 5X.

11:50 AM from Alain Xhonneux Applia to everyone: Don’t forget the problem for ESWH!

11:52 AM from William Walker Rode to everyone: Guidelines from Health Authorities in Norway is that there is at least 70 degrees C in the tank, and possible to have 60 degrees at the tapping point within 1 minute. Then at the tapping point it should be mixed down to 55 degrees for all building categories except for kindergartens and care homes, where the temperature must not exceed 38 degrees

11:55 AM from William Walker Rode to everyone: This temperature in the tank is possible as 95% of Norways water supply is surface water, no problem with scaling above 55 degrees as with many EU member states water supply

12:05 PM from PJ Siderius to everyone: It is not about the efficiency, but about the performance

12:09 PM from Alain Xhonneux Applia to everyone: Changing design of products to meet the test means design products for the test and not for the usage! Far from optimisation...

12:09 PM from Nourreddine to everyone: if the peak temperature is reached only for few seconds, the test is penelyising the heat pumps because the calculation is done for 55 for the whole drawing

12:10 PM from mondot to everyone: So a heat pump for space heating not achieving Tdesignh (because TOL=-7°C) is not fulfilling the performance required which is to be able to pride temp. in radiators at 55°C.

12:15 PM from François-Yves Prévost to everyone: François-Yves Prévost: I can answer for the Exhaust air question

1:33 PM from William Walker Rode to everyone: Norway: removal of Qcor requires change of limits, and full retest of all models. It does not make sence

1:33 PM from mondot to everyone: we also want to harmonise DHW for both WH and HPWHs

1:34 PM from Jerome MARTEL to everyone: As Applia, The ambient correction Qcor was proposed to be deleted with the reason of the complexity to the calculation without real benefits and with only a slight reduction of the calculated efficiency. The calculation of this correction is rather simple in comparison with the implementation of the test
<table>
<thead>
<tr>
<th>Time</th>
<th>From</th>
<th>To everyone</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:34 PM</td>
<td>François-Yves Prévost</td>
<td>I would like to keep Qcor</td>
<td>I would like to keep Qcor.</td>
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<tr>
<td>1:34 PM</td>
<td>Jerome MARTEL</td>
<td>As Applia, keep Qcor</td>
<td>I would like to keep Qcor.</td>
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<tr>
<td>1:34 PM</td>
<td>mondot</td>
<td>No issue for sound power level of HPWHs</td>
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<tr>
<td>1:37 PM</td>
<td>malgosia.rybak</td>
<td>Yes, the factors are correct</td>
<td>Yes, the factors are correct.</td>
</tr>
<tr>
<td>1:41 PM</td>
<td>Groupe AFG - BNG - Certigaz</td>
<td>i confirm (CEN standardization)</td>
<td>I confirm the deletion of the ambient correction will decrease the efficiency of products.</td>
</tr>
<tr>
<td>1:42 PM</td>
<td>William Walker Rode</td>
<td>Norway does not agree to move minimum requirement from class C to class B</td>
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<tr>
<td>1:42 PM</td>
<td>dacunti_v</td>
<td>move to class B is a big change at this stage, keep class C</td>
<td>Move to class B is a big change at this stage, keep class C.</td>
</tr>
<tr>
<td>1:43 PM</td>
<td>Wilhelm Wall</td>
<td>keep class c. due to the fact, that the step to class B is a big step.</td>
<td>Keep class c. due to the fact, that the step to class B is a big step.</td>
</tr>
<tr>
<td>1:43 PM</td>
<td>Jerome MARTEL</td>
<td>Moving to class B is a big step (nearly 30%)</td>
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</tr>
<tr>
<td>1:44 PM</td>
<td>PJ5 Siderius</td>
<td>Is class B the least life cycle point?</td>
<td>Is class B the least life cycle point?</td>
</tr>
<tr>
<td>1:44 PM</td>
<td>ECOS - Mélissa Zill</td>
<td>we support the proposal made by VHK</td>
<td>We support the proposal made by VHK.</td>
</tr>
<tr>
<td>1:45 PM</td>
<td>Gunnar Olesen</td>
<td>We support move and correction for multivalent tanks, let us see LLC for higher requirements.</td>
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</tr>
<tr>
<td>1:45 PM</td>
<td>Martyn Griffiths</td>
<td>Agree that step between C and B is too big, a lot depends on timescale for implementation.</td>
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</tr>
<tr>
<td>1:46 PM</td>
<td>Melanie Auveray - EHPA</td>
<td>sorry something is wrong with my microphone .... EHPA agree with Jerome Martel, the class B will lead to an increase of performance by nearly 30%. EHPA is strongly against limiting the market to storage tank achieving at least the threshold corresponding to B class</td>
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</tr>
<tr>
<td>1:51 PM</td>
<td>Gunnar Olesen</td>
<td>We support the minimum flow rate, preferably as requirement.</td>
<td>We support the minimum flow rate, preferably as requirement.</td>
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<tr>
<td>1:51 PM</td>
<td>Nourreddine</td>
<td>V40</td>
<td>V40</td>
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<tr>
<td>1:54 PM</td>
<td>Groupe AFG - BNG - Certigaz</td>
<td>TPCA is to be considered as “quality” for consumers</td>
<td>TPCA is to be considered as &quot;quality&quot; for consumers.</td>
</tr>
<tr>
<td>1:56 PM</td>
<td>Jerome MARTEL</td>
<td>Module A should be the only one implemented for water heaters working with electricity as main energy source. Third party verification would have several strong disadvantages including higher costs and time-to-market for this category of product already disadvantaged by the comparison in final energy. Differences between small and larger enterprise would not be fair</td>
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</tr>
<tr>
<td>1:57 PM</td>
<td>Matteo Rambaldi</td>
<td>There is no need to add third party in the process that makes it more costly and lengthy. In addition is it legal to to discriminate small and large companies?</td>
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</tr>
<tr>
<td>2:00 PM</td>
<td>dacunti_v</td>
<td>No need to add TPCA for water heaters (working with any kind of energy source). Module A is appropriate for water heating efficiency for the reasons expressed by EHI. B+C can be considered standard modules for safety of gas appliances (GAR) ... nothing to do with water heating efficiency</td>
<td>No need to add TPCA for water heaters (working with any kind of energy source). Module A is appropriate for water heating efficiency for the reasons expressed by EHI. B+C can be considered standard modules for safety of gas appliances (GAR) ... nothing to do with water heating efficiency</td>
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<td>2:01 PM</td>
<td>bbailera</td>
<td>For Gas Appliances it’s possible B+C2; B+D; B+E</td>
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<tr>
<td>2:01 PM</td>
<td>Paolo Basso - EHI</td>
<td>We are also against differentiation of requirements between companies. But again, TPCA should be limited to Lot 1.</td>
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<td>2:01 PM</td>
<td>dacunti_v</td>
<td>Not excluded by VHK, but covered by B+C. Compulsory TPCA. It’s worse than for electric appliances</td>
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<tr>
<td>2:06 PM</td>
<td>Groupe AFG - BNG - Certigaz</td>
<td>Module to be used must give sufficient assurance to the customers on performance of the appliances, nothing to do with safety ...</td>
<td>Module to be used must give sufficient assurance to the customers on performance of the appliances, nothing to do with safety ...</td>
</tr>
<tr>
<td>2:17 PM</td>
<td>ECOS - Mélissa Zill</td>
<td>horizontal stds on recyclability and repairability are published</td>
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<td>2:17 PM</td>
<td>ECOS - Mélissa Zill</td>
<td>the product specific one have to be developed still</td>
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</tr>
<tr>
<td>2:17 PM</td>
<td>Jerome MARTEL</td>
<td>Following the comment of M. Ollion</td>
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<td>2:17 PM</td>
<td>Jerome MARTEL</td>
<td>We would like to point out that the use or/and ban of F-Gases is already sufficiently regulated under the F-Gas regulation and because of this we do think that it is not appropriate to suggest here any kind of guidance or regulation under Ecodesign. The majority of the ozone depleting greenhouse gases have been already eliminated according existing regulations and we should strongly avoid to create any kind of double regulation under Ecodesign.</td>
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</table>
(Draft) Minutes WG4 meeting of 25 June 2020 – Revision of ErP regulations for water heaters

2:17 PM from Valérie Lammerant to everyone: not yet product specific standards available for this

2:28 PM from mondoot to everyone: For gas/fuel boilers NOx is as important as sound power level is for HPWH. Why is NOx not on the label?

2:28 PM from Alain Xhonneux Applia to everyone: + should be added only if corresponding classes are populated, which is not the case in all WHL!

2:29 PM from Ingo Seliger to everyone: I would propose to add PV and batteries also to packages, can I explain the reasons?

2:31 PM from PJS Siderius to everyone: This is not true [MVE: about the FWC not allowing NOx on the label]

2:33 PM from Andreas Bohren to everyone: I would share the concerns about smart control/monitoring/grid on the label: In best case this is obsolete until publication of the revised regulation as technical progress is faster than what we are. Overload of information - simplify to make it understandable.

2:33 PM from Christian Koch CLAGE GmbH to everyone: However, adding a "A+++" to the "product" label is a rescaling, because every single product is moving one stage down.

2:34 PM from William Walker Rode to everyone: Norway supports the use of pictogram of Smart Appliances, as water heaters is one of the cheapest energy storages available, already rolled out. It can be smart to support bottlenecks situation that creates voltage problems in grid or as system support for frequency regulation.

2:36 PM from Jerome MARTEL to everyone: Do we speak later of "off-peak", please? Otherwise, I would have a comment of this point.

2:36 PM from William Walker Rode to everyone: Norway supports the use of all climate zones, now we see challenges that suppliers and resellers are economical with the truth and promote equipment with average values and labels.

2:37 PM from Groupe AFG - BNG - Certigaz to everyone: new "A+++" means rescaling with impact on existing labelling, where as VHK report indicates that "...the interim report clearly states that a rescaling is not the mandate of VHK for the current study". Please clarify.

2:39 PM from SHE - Pedro Dias to everyone: Solar Heat Europe: We support the inclusion of climate zones on the label and the use of efficiency on the Label.

2:54 PM from William Walker Rode to everyone: Smart, mature or not? in France 3rd party aggregator has 100'000 customers, most with ESWH, Finland: Fortum Spring has more than 2500 ESWH, TIKO in Switzerland also in the thousands with ESWH.

2:55 PM from William Walker Rode to everyone: 3rd party aggregator in France is Voltalis.

3:01 PM from Alain Xhonneux Applia to everyone: But A+++ already existing on the package label.

3:03 PM from Stefan Abrecht to everyone: We need to unify the Classes for water heating of the package and the product label whether the best class is an A or A+++.

3:06 PM from Alain Xhonneux Applia to everyone: Unifying classes between WH is not possible due to wide range of products. In small WHL upper classes will remain empty.

3:06 PM from dacunti_v to everyone: No need to add Upper class for product label due to lack of population ... for solar contribution A+++ is already available package label.

3:10 PM from Christian Koch CLAGE GmbH to everyone: full support not to have A+++ on the product label!

3:11 PM from Paolo Basso - EHI to everyone: Quick note: the method presented by Assotermica is supported by EHI.

3:11 PM from Martyn Griffiths to everyone: I suspect that the Solar supplier will produce software to avoid the use of the "visual" lookup table. We need to be able to enter the tank size even if it is not optimal so we support the EHI preferred solution.

3:12 PM from Gerard van Amerongen to everyone: The influence of tank volume from 50 l/m2 to 150 l/m2 is really very small.

3:41 PM from SHE - Pedro Dias to everyone: Answering Martyn Griffiths comment: the look-up table should be part of the product documentation when placed in the market, facilitating the work of the installer and the market surveillance process.

3:42 PM from Alessandro Fontana to everyone: If we have a low quality panel it results in a low GTY. A bad tank will have high thermal losses, account by C thermal losses coefficient.

3:42 PM from Alessandro Fontana to everyone: so we will have low eta sol.

3:44 PM from Gerard van Amerongen to everyone: Perhaps we can state requirements on volumes that are allowed per m2? E.g. between 50 l/m2 and 150 l/m2.

3:45 PM from SHE - Pedro Dias to everyone: Paolo, the calculation with the current regulations requires 15 (fifteen) parameters. Indeed it is similar to a tax declaration!

3:47 PM from Alessandro Fontana to everyone: Paolo Basso is right about tables. Please don't forget we want to avoid the use of Qnon sol.
3:48 PM from Andreas Bohren to everyone:  
i) The ESTIF/SHE proposal assumes that the installer is intelligent enough to select a reasonable storage tank. For this reason it is not in. ii) It is foreseen to give recommendations about tank size and collector yield, but if possible not to include as a requirement. It can be misleading to have requirements on relation between m2 and volume. iii) Calculation is much simpler, so it is much easier to apply for SMEs who struggle a lot with the current method.

3:55 PM from ECOS - Mélissa Zill to everyone:  
ECOS supports the simplified method proposed by SHE and we will specify this in our written comments.

3:56 PM from Paolo Basso - EHI to everyone:  
Pedro, I politely highlight the same contradiction in your speech: don't you trust the installer to do the calculation, but you trust them to find the right sizing?

3:57 PM from Paolo Basso - EHI to everyone:  
Our method is also available publicly.

3:57 PM from Andreas Bohren to everyone:  
Please don't forget that m2 is not a unit for energy and m3 is not a unit for storage capacity. This mistake is not made in SHE but by the Assotermica proposal. There are other products on the market and there will be new products on the market than flat plate collectors and simple water storages. We should not adopt the calculation only to these standard systems. ESTIF/SHE proposal is completely open and prepared to new technologies.

3:57 PM from Paolo Basso - EHI to everyone:  
Please feel free to consult it and come back to us.

4:09 PM from Alessandro Fontana to everyone:  
Please note that sizing is a non dimensional coefficient. We shown just the diagram but not the formula to get the value.

4:22 PM from Christian Koch CLAGE GmbH to everyone:  
XS is "the" shower profile.

4:26 PM from William Walker Rode to everyone:  
A Norwegian ESWH producer had a product recovering drain water feeding preheating it into the ESWH. I think the product was dropped, they were not able to prove cost benefit, and the residual build up in the heat exchanger meant high service cost and diminishing heat transfer.

4:32 PM from Gideon Blij to everyone:  
Position not mandatory but stimulate technology.

4:33 PM from Gideon Blij to everyone:  
correct is in a standard.

4:33 PM from Nourreddine to everyone:  
it is 1323-2 not 3.

4:33 PM from Groupe AFG - BNG - Certigaz to everyone:  
EN 13203-7 covers that issue, the draft will be submitted soon for CEN enquiry (end 2020 may be).

4:34 PM from dacunti_v to everyone:  
Fully support to EHI position regarding PFHRD. Not mandatory req. but OK to package label.

4:34 PM from Christian Koch CLAGE GmbH to everyone:  
Mandatory or not should be a part of the EPBD but not of ErP.

4:40 PM from Paolo Basso - EHI to everyone:  
By accelerating the replacement of old and inefficient appliances you achieve exactly 40% GHG reduction in 2030.

4:41 PM from ECOS - Mélissa Zill to everyone:  
while locking in fossil fuel technologies.

4:41 PM from Paolo Basso - EHI to everyone:  
No Melissa, not that.

4:41 PM from Nourreddine to everyone:  
what is meant mandatory? Replacing all instantaneous combi par others integrating PFHRD (4 million units) is not easy to reach.

4:41 PM from Stefan Abrecht to everyone:  
Therefore we need a maximum of solar a soon as possible.

4:43 PM from Nourreddine to everyone:  
Wht.

4:45 PM from Nourreddine to everyone:  
Why V40 is measured with the appliance ON? For appliances designed with high input burners not compatible with the storage V40 could be infinite because the temperature does go below 40°C.

4:58 PM from Rene2018 to everyone:  
Can I say something on boiler meetings? Rene\"