The
Federal Government

15.11.2021

Preliminary German comments following the Consultation Forum on space and water heaters

General remarks

We appreciate the extensive work done by the Commission. For example, we welcome the introduction of third-party testing and of monitoring requirements, introducing the compensation method as well as the label rescaling.

We welcome the opportunity to comment on the recent drafts of the Ecodesign and Energy-labelling regulations for space heaters and combinations heaters, as well as for water heaters. We would like to point out that not commenting on several issues of the drafts does not mean Germany agrees with the proposed revisions. Germany reserves to submit further substantiated comments at a later point.

The product group of space and water heaters will play an important role for achieving the climate goals in the European Union. Given the lifespan of the products concerned, it seems reasonable to make the existing technologies as efficient as possible, while leaving the regulation of different energy sources to other instruments. Yet, during the consultation forum, it has already become apparent, that every member state has a different idea of how to reach climate neutrality in 2050 when it comes to heating.

It is of high importance that the regulations on space and water heaters contribute to the „Fit for 55“package for 2030 and beyond towards decarbonisation. Decarbonisation options should follow the Ecodesign principles of least life cycle costs and affordability.
The improvement of climate protection and air quality has to be achieved in equal measure. Therefore, Germany asks the Commission to review the drafts in respect to higher-ranking policies like the European Green Deal and the “Fit for 55” package as well as the NEC-Directive ((EU) 2016/2284) and the Directive on ambient air quality and cleaner air (2008/50/EC) that is to be revised soon. The reduction of methane, to which the EU obligated herself in the Global Methane Pledge, should be taken in to account as well.

We are available for further discussions with the Commission and the stakeholders on how to increase the use of renewable energy for space and water heaters by Ecodesign and Energy Labelling as well as other proposed directives and instruments like Renovation Wave, review of EPBD, EED and RED-review and a potential European emissions trading system for road transport and buildings.

Comments on the draft ecodesign-regulation for space and combination heaters

Art. 1 Scope

Paragraph 1:

We do not consider increasing the scope from 400 kW to 1 MW to be expedient and ask the Commission to refrain from this proposal.

Paragraph 2

- **e-g):** The exemptions e-g may be useful for clarification. However, they may not be necessary as the definitions already exclude these products (if not, the definitions should be refined).
- **f+j):** Reversible heat pumps should remain in the scope of the regulation as they have been since 2013. Removing them from the scope would affect that they are entirely unregulated as regulation 2016/2281 on the cooling function excludes them as well. On the contrary, the heating function of reversible heat pumps should be regulated in the space heater regulation (where the requirements are moderate) and the cooling function in the cooling products regulation.

Art. 2 Definitions

- **(19):** The value of the conversion coefficient for electricity should reflect present time and thus preferably be derived from a more recent source when updating the drafts. **2.1** from the last EED has been determined in 2018 for historic data (about 2016/17). This figure would have become 9 years old when the requirements of the new regulation will enter into force from about 2025.

Art. 3 Requirements + timetable

We propose a general transitional period of 2 years; single exemptions may be possible where appropriate.

Art. 4 Conformity assessment

- We support to introduce third party testing for space and combination heaters. It should also be applied to hybrid heaters.
- However, during the impact assessment the impact on the competitiveness of small and medium enterprises (e.g. will the purchase price for products from small series increase? Are disadvantages to be expected if SME have to commission external laboratories in contrast to

larger manufacturers with own "inhouse" laboratory capacities?), on the availability of testing capacities (e.g. will the availability of test rigs increase in the course of time quickly enough?) as well as on the speed of innovation (e.g. are delays in the product development process to be excepted?) should be further investigated.

- During the impact assessment, it should further be investigated if the effort of manufacturers can be reduced by applying third party testing only for new products whose conformity is declared after entering into force of the new regulation; re-testing should be avoided or granted with a longer transitional period.
- The principle should be maintained that the market surveillance authorities are able to carry out tests independently or have them carried out by testing institutes they have commissioned themselves.
- For clarification: Does the 70 kW limit apply for heat pumps only or for all heaters? We prefer the first option.
- Manufacturers should be free to choose also from modules F+G of decision 768/2008/EC.

Art. 6 Circumvention and software updates

The current definition of circumvention is restricted to the detection of testing and the deterioration of efficiency due to software updates. We ask the Commission to assess how the definition of circumvention can be expanded. Processes such as worst interpretations of existing standards or the negative use of tolerances should also be addressed. The results from the project "ANTI-Circumvention of Standards for better market Surveillance - ANTICSS"[1] should be considered.

Annex I

- **(31+32):** We welcome to stress the importance of the sustainable origin of biomass fuels. However, this is not a physical characteristic of the fuel nor of the heater and should be removed.
- **(33):** It does not make sense to supply the hydrogen kit already with the gas boiler as it will have to be stored for an unknown time as it may age or be lost. Instead, it should be available as spare part (e.g. with article number) from the time of placing on the market.
  Further, *"within at the most 2 hours"* and the voucher should be specified in more detail (e.g. how to test/verify the max. duration of 2 hours by MSA? How to redeem the voucher and by whom?), if they are intended to be binding requirements.

Annex II

1.) Requirements for seasonal space heating efficiency

- **a):** Base case inputs of the preparatory study (task 5, table 7) suggest a smaller impact of the updated PEF than 2 %-points for B1 fuel boilers; a change of the recent requirements by 1 %-point seems more appropriate. However, independently from the general decarbonisation a mid-term perspective for these outdated applications should be given.
- **a+c):** For hybrid heat pumps, the share of ambient heat could be increased to 30 % or the seasonal energy efficiency raised to 125 %. We propose to set a requirement only on the

[1] https://www.oeko.de/forschung-beratung/projekte/pr-details/anti-circumvention-of-standards-for-better-market-surveillance-anticss

seasonal energy efficiency and not the share of ambient heat since the latter could be prone to different interpretations.

2.) Requirements for water heating energy efficiency

- The current regulation does not allow water heating by electric combination boilers of load profiles 3XL and 4XL as there are alternatives with lower life cycle costs (esp. heat pumps). The wording „not applicable“ can be misunderstood as not setting requirements at all. We ask to maintain the current state and to express this in a clear way. They might be improved to meet the recent requirements as packages with solar devices.
- „Hybrid (space heater)“ should get an own row.
- The thresholds for B1 fuel combination boilers may be adapted to ensure safe evacuation of flue gases.
  Cogeneration combination heaters should achieve at least the efficiencies of conventional fuel combination boilers (this refers to the load profiles up to XXL).

3.) Requirements for sound power level:

As we mentioned after the preparatory study, the sound power levels of AHP have not been investigated at all. Thus, the sound power level limits in the Regulation draft are the same as in the current regulation from 2013. Lower noise emissions could be important to increase acceptance and facilitate market penetration.
Therefore, we ask the Commission to reassess the proposed values taking into consideration the state-of-the-art of the technologies and product groups.

4.) Requirements related to emissions:

- **a):** In line with our general remarks and the comments regarding the extension of the scope of the regulation, we ask the Commission to reassess the proposed values taking into consideration the state-of-the-art of space heaters and combinations heaters and the water heaters respectively.
- **d+e):** All boilers should be able to modulate to lower part loads. This means to delete *„combination“*. We ask the Commission to set the modulation requirement for B1 boilers to a level that still ensures the removal of flue gases with natural draught.
- **f):** The requirement could be extended to other fuel using heaters like heat pumps, hybrid and cogeneration heaters.
- **g+h):** Minimum shares of biomass fuels should be deleted. For gas, there are no physical differences between natural gas (methane) and purified biogas (“biomethane”) so that there are no technical changes of the boilers necessary. New oil boilers are already capable to use up to 30 % biofuels.

5.) Requirements for material resource efficiency:

- We generally support the proposed requirements. However, we would like to ask the Commission to re-evaluate them in the light of the durability of the products concerned. Is it

really reasonable to require the availability of spare parts for only 10 years, when the gas and oil boilers easily last up to 25 years? On the other hand, is it responsible to require manufactures to stock spare parts for longer than 10 years?
We therefore ask the Commission to reassess the requirements for providing spare parts and put forward a solution, that finds a way to balance the legitimate interests of end-users with those of the manufacturers.

- Additionally, the deadline for providing spare parts should be reduced as during the heating period there may be high urgencies and in these cases 15 days seem too long.
- Furthermore, the requirements should also be applied to temperature controls and parts of solar installations which are not covered yet.
- During the AdCo-Meeting in the summer of 2021, it has become apparent, that there are different understandings of the standard text on spare parts. To avoid further confusion and to foster legal certainty, a revised phrasing is necessary and should be included in this regulation. Moreover, the delivery time of spare parts needs a clear definition of how to count the days: Does the day of the order count or does the count start the day after? Does the day of delivery count or not? Is counting in hours (divided by 24h) or in whole days? These questions can become of considerable importance for MSA and manufacturer, the shorter the period becomes.

6.) Requirements for product information:

The high-temperature level that is proposed as information for the label should also be applied as ecodesign product information for larger products.

7.) Requirements related to monitoring:

We welcome the introduction of these requirements. This is important as the requirements of the inspection of space heaters up to 70 kW in the EPBD has been dropped in 2018. The focus should be on self-monitoring. Monitoring can open a market for optimisation services and simplify consumer advice. The requirements provide a minimum framework while offering flexibility in implementation. It may make sense to describe design principles in a guideline. We welcome the intention of the Commission to develop the requirements further after the Consultation Forum.

Annex III

For heating appliances of very high capacity on site testing might be a future option for market surveillance. However, we are not aware of any available standards. Therefore, we propose that the Commission launches a standardisation request for on-site testing. The test procedure could be introduced with the next revision or preferably earlier, if possible.

2.) Compensation method

- We very much welcome that the compensation method (CM) is included in the draft regulation. However, the current proposal provides for a purely voluntary introduction with both test methods permissible in parallel. Firstly, this would lead to an unfair comparison on the label since appliances tested according to the CM method rate lower. Secondly, it is unclear whether the incentive to test according to the CM is strong enough or not. Both BAM round robin tests (A/W and W/W units) show appropriate reproducibility of the CM of about 3-4 % on SCOP

values. Therefore, we are confident that the method is mature enough to allow for a mandatory introduction and we propose a two-tier approach.

- Tier 1 (entry into force): The CM becomes mandatory for models placed on the market for the first time. For older models which were already placed on the market before entry into force the CM is voluntary to avoid retesting. However, declaration according to EN14825 goes along with a malus2 to account for the higher measured COP values and to allow for comparison of differently tested appliances on the energy label.
- Tier 2 (two years after entry into force): The CM becomes mandatory for all, new and old, models placed on the market.
- Standardisation Request (Q1 2022 launch of the process): Following the example of M572 (taps and showers) the Commission launches a standardisation request before the regulatory committee (as soon as possible). This would allow sufficient time until tier 2 for standardisation to convert the CM developed by BAM in a harmonised standard (1 year to issue the SReq (Q4 2022) and 4 years of standardisation work).

5.) control, auxiliary energy and standby heat loss corrections Σ F(i)

- **a.):** For brine circulators a correction of 5 %-points seems no longer appropriate as only high-efficiency circulators are available. 1.5-2 %-points are more feasible. For ground-water pumps 5 %-points is appropriate due to the open water loop.

7.) water heating energy efficiency ηwh of a combination heater

- **(h):** heat pump water heaters shall be able to reach T_{peak} of the declared load profile, if not by the refrigerant cycle alone then by the help of an (integrated) auxiliary/backup heater. Allowing lower T_{peak} is not desirable due to higher risk of legionella contamination. The level playing field for efficiency should be established on the base of a sound health protection level.

[2] Its magnitude can be derived from the two round robin tests organised by BAM and further tests by BAM according to the CM. BAM will provide past data very soon and is planning more tests until Q2 2022.

Comments on the draft energy-labelling regulation for space and combination heaters

General comments

Changes in the labelling of space heaters should also be applied as soon as possible to the label of solid fuel boilers (regulation 2015/1187) to maintain comparability.

Art. 1 Scope

Drain water heat recovery devices should explicitly be included in the scope as they are for water heaters. At the moment, they are just mentioned in the text.

Art. 3 Suppliers

It should be ensured that the label is also shown during trade fairs.

Art. 4 Dealers

- The draft does not yet give a clear picture about the responsibilities to issue a package label by the supplier/manufacturer or dealer/installer. In principle, it is desirable to issue a package label for any combination of one or more heaters with or without additional components, regardless who combines the appliances (supplier or dealer). However, the calculation of the package label was considered too complicated. However, today this burden could be taken off dealers/installers with the introduction of the database EPREL. We propose that the Commission provides a very easy to use package label generator in form of a public website, which would generate the package label based on the model numbers of the combined heaters and components and a minimum of additional input parameters (e.g. the solar collector area). This would allow to keep the number of input parameters and calculations as complex as desired while keeping it simple for dealers/installers.
- **(b):** The selling situation differs significantly from other products: There is no exhibition of products at the point of sale. It is the regular case that the end-user does not to see the product bearing the label. The reference to the information in Annex VI is by far not appropriate: it rather fits to advertisements and promotional material but not a personal selling situation. So as a principle, the complete label with the accompanying technical information should be provided at the latest with the offer for a specific product.

Art. 8 Review

The next review should investigate if combinations of space/water heaters with photovoltaic modules, e.g. heat pump or storage water heater with PV, should be supported by showing benefits by self-consumption to the energy efficiency of the local installation. Impacts on the overall system efficiency could be considered (e.g. benefits in load management vs. storage losses when using batteries).

Annex II

- We welcome the common scale for all technologies as it serves the principle of same measure for the same service. We also support to re-scale the label to A-G in one step.
- The difference of 65…80 %-points between the energy class limits of medium and low temperature regime does not reflect the difference between products properly. In consequence, products can be rated in a lower class in LT regime than in MT regime although they are more efficient. It should be considered to lower the class limits of the LT regime somewhat in order to reduce this difference. The framework regulation 1367/2017 sets the two highest energy efficiency classes as eligible for providing incentives by the member states but allows to define more classes (art. 7 para. 2). The large range of heating technologies that contribute to decarbonisation recommends an extension of the eligible classes. We propose to distinguish between the technologies: A-B for brine heat pumps and water heat pumps, A-C for air-source heat pumps, A-D for hybrid heaters and cogeneration heaters.
- 3. The classes for tanks could be removed from this regulation and be referred to the water heaters labelling regulation.

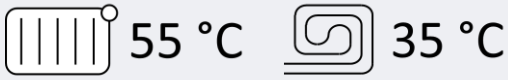
Annex III

- In principle, we accept a higher complexity of the labels for this product group: Complex products need complex labels that are a platform for dialog between installer and consumer.
- We support to remove separate layout for the package label.
- We support to show the space heating efficiency on the label in addition to the efficiency class. For water heating by combination heaters, the energy efficiency value should be given instead of the energy consumption (as it is for water heaters). This would be more in line with the information on the space heating efficiency and avoid misunderstandings when the actual consumer behaviour deviates from the loading profiles.
- Noise is considered important. As consumers can hardly assess the meaning of the absolute values of the noise emission levels, the EU Commission introduced noise classes for at least washing machines and tumble dryers with the latest Energy Label Regulations. According to the classes in these Regulations we recommend the following noise classes for AHP to be stated in the Energy Label.

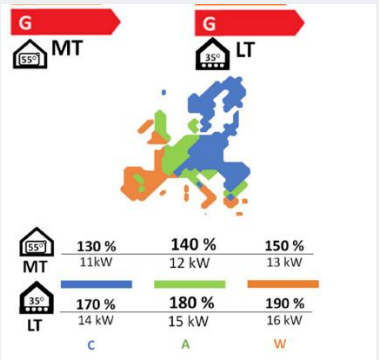
Rated heat output		*≤ 6 kW*	*> 6 kW and ≤ 12 kW*	*> 12 kW and ≤ 30 kW*	*> 30 kW and ≤ 70 kW*
Sound power level (L_{WA}) classes, **outdoors**	**A**	≤ 52 dB	≤ 52 dB	≤ 53 dB	≤ 55 dB
	B	> 52 dB, ≤ 55 dB	> 52 dB, ≤ 55 dB	> 53 dB, ≤ 57 dB	> 55 dB, ≤ 63 dB
	C	> 55 dB, ≤ 61 dB	> 55 dB, ≤ 61 dB	> 57 dB, ≤ 63 dB	> 63 dB, ≤ 71 dB
	D	> 61 dB, ≤ **65 dB**	> 61 dB, ≤ **70 dB**	> 63 dB, ≤ **78 dB**	> 71 dB, ≤ **88 dB**
Sound power level (L_{WA}) classes, **indoors**	**A**	≤ 51 dB	≤ 56 dB	≤ 61 dB	≤ 71 dB
	B	> 51 dB, ≤ 54 dB	> 56 dB, ≤ 59 dB	> 61 dB, ≤ 64 dB	> 71 dB, ≤ 74 dB
	C	> 54 dB, ≤ 57 dB	> 59 dB, ≤ 62 dB	> 64 dB, ≤ 67 dB	> 74 dB, ≤ 77 dB
	D	> 57 dB, ≤ **60 dB**	> 62 dB, ≤ **65 dB**	> 67 dB, ≤ **70 dB**	> 77 dB, ≤ **80 dB**

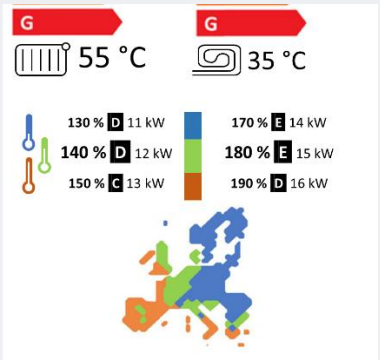
Split AHP consist of two different units. Both units generate different noise and therefore touch two areas of protection – the consumers' homes and the environment (other people's homes). That is, there are two values for outdoor and indoor noise on the current Energy Label. Whereas, the draft for the new label only contains one declared value, without stating if it shall be the outdoor or indoor value. We strongly recommend to label both, the outdoor and indoor value on the new label. For outdoor noise, we used data for market distribution to determine the class ranges. For indoor noise, we have no data at hand and set the class range at 3dB. Dependent on data availability, we recommend a revision of the class ranges for indoor noise.

- **4.)+5.):** Low/Medium temperature regimes:
  We acknowledge to express the relation to the insulation of the building, The abbreviations MT/LT will be hard to understand for consumers, and 35 °C might be misunderstood as an indoor temperature. We propose to indicate the LT/MT regime by using just an icon for a radiator or a floor heating loop and the dedicated feed temperature:



- **4.)+5.):** table on climate zones:
  The abbreviations „w", „a" and „c" for the three climate zones may be hard to understand. We propose either to stick to the colors of the map only or to use a thermometer symbol indicating warm, medium or cold outdoor climate.
  As far as there is enough space, the efficiency classes or arrows could be shown in the table, too. The information to the temperature regimes is given in two rows. This could be converted to two columns. This would better fit to the two stacks of efficiency classes per temperature regime above.





- **5.):** For packages, it should be possible to show multiple suppliers or model identifiers on the Label (as far as the composition is not clearly described in additional documents or in the product information sheet).
- **6.)+7.):** The indication of hydrogen classes does not make sense in the proposed way. Instead, a pictogram would be sufficient to show that the product is able to use a certain share of hydrogen, either immediately without upgrade or with a later upgrade (then accompanied by the requirement of providing the hydrogen conversion kit).
- Some of the icons should be re-designed because they are too abstract, especially the grey bar for electricity generation and for the controller class.
- As far as the labels will be considered as overloaded, we could imagine to split the label between MT and LT application, e.g. to provide two separate labels for products declared for both temperature levels.

Annex IV:

- In our interpretation the information of this annex has to be provided to EPREL. Clarification is welcome.
- We welcome the introduction of a third (voluntary) temperature regime. There is a growing number of heat pumps that claims to reach higher temperatures than the medium-temperature level. In principle, this is very useful for application in existing buildings that have not yet been partially renovated. Usually, efficiencies are not given with those claims. We propose to request manufacturers to give the corresponding information together with those claims.
- For heat pumps, information on the type and amount of refrigerant should be given. This would support the strong phase-down of HFC refrigerants by 80 % until 2030 according to the f-gases-regulation by making this information searchable in the product database EPREL.

Annexes VI+VII:

- There should be a specification which class is to be shown: climate (warm, average, cold), function (space heating, water heating), temperature level (low, medium) provide numerous possibilities. As within the arrow only the range of classes can be shown, the other options should be printed by using the respective icon from the label (function, temperature level) or in the applicable national language (climate) next to the arrow in the same size.
- Any information given according to these annexes should be complemented by the QR-code to EPREL.

Annex VIII:

5.) control, auxiliary energy and standby heat loss corrections Σ F(i)

There should be a clear formula how to consider the impact of a temperature controller in F(1) instead of a description only.

8.) temperature controls

The classes of temperature controllers should be defined using letters A-H instead of roman numbers. This allows a rating that is easier to understand.

Comments on the draft ecodesign-regulation for water heaters and storages

General comments

Many of the comments on space and combination heaters apply for ecodesign and energy labelling of water heaters, too. They are not repeated in the following sections.

Art. 3 Ecodesign requirements:

- **1 b):** We do not understand why circulation water heaters are introduced as a new product category that only has to meet information requirements. According to the definitions, they should have already been in the scope of the existing regulation (as combination heaters can be linked to a tank and circulation system as well) and are expected to meet the requirements of the respective water heater type.

Art. 8

- Storage tanks become more efficient if mixing of the natural stratification is avoided during loading and unloading. This is not yet covered, neither by measurement standards, methods or requirements. BAM is working on a new test method for storage tanks which allows for better differentiation between conventional and stratified tanks. We propose to address the stratification of storage tanks in the next review.
- Grid flexibility provided by water heaters using electricity should be investigated for the next review. Preferably this should focus on heat pumps that can convert 2.5-3 times as much electricity to heat as electric storage water heaters.

Annex II

1.1) Energy efficiency requirements

- We support separate requirements for different types of water heaters. One “catch-all” category should be defined (the most cautious would be that of electric storage water heaters); further differentiation is provided by the energy label.
- We ask to check if the requirements on fuel water heaters ensure the evacuation flue gas.
- The current regulation does not allow water heating by electric storage water heaters of load profiles 3XL and 4XL as there are alternatives with lower life cycle costs (esp. heat pumps). „not applicable“ can be misunderstood as not setting requirements at all. We ask to maintain the current state and to express this in a clear way. They might be improved to meet the recent requirements as packages with solar devices.

1.2) Requirements for sound power level

(see above on space heaters)

1.3 and 1.3 a) Requirements related to emissions

(see above on space heaters under 4 and 4 a)

1.4) Functional requirements

- **1+2):** We propose to maintain the functional requirement on the storage volume to assign water heaters to a load profile more explicitly.
- **3):** We support to define indoor air heat pumps as in principle. Distinction to exhaust air heat pumps could be made more explicit by a specific definition in Annex I. However, avoiding overventilation is a critical issue.

2.) ecodesign requirements for hot water storage tanks

- Storage tanks: (see below on the label)

Annex III

4.) Calculation methods

We welcome the intention to address the difference between electric instantaneous water heaters that may be hydronically controlled with 1 or 2 stages or electronically with continuous stages. The latter ones provide energy savings that have not been reflected yet. Instead of a 5 % malus for hydronic instantaneous water heaters with F_{ctrl} we would prefer to eliminate the original cause: Switching the load profiles from energy content to water quantity would make hydronic instantaneous water heaters provide hotter water and consume more energy. This will result in a worse rating by measurement and not by a default factor and thus be more realistic. This approach could be applied to all load profiles or only those relevant for instantaneous water heaters up to S or M.

Comments on the draft energy-labelling regulation for water heaters and storages

Art. 1 Scope

- We support to include load profiles up to 4XL as well as the inclusion of storages up to 2,000 litres.
- Passive flue water heat recovery devices could be included into the scope as for space heaters.

Art. 2 Definitions:

The definition of *"drain water heat recovery device"* is missing; Annex I includes just a definition of a *"drain water heat recovery device factor"*.

Art. 4 Obligations of dealers

- **1. b):** (see above for space heaters)

Annex II

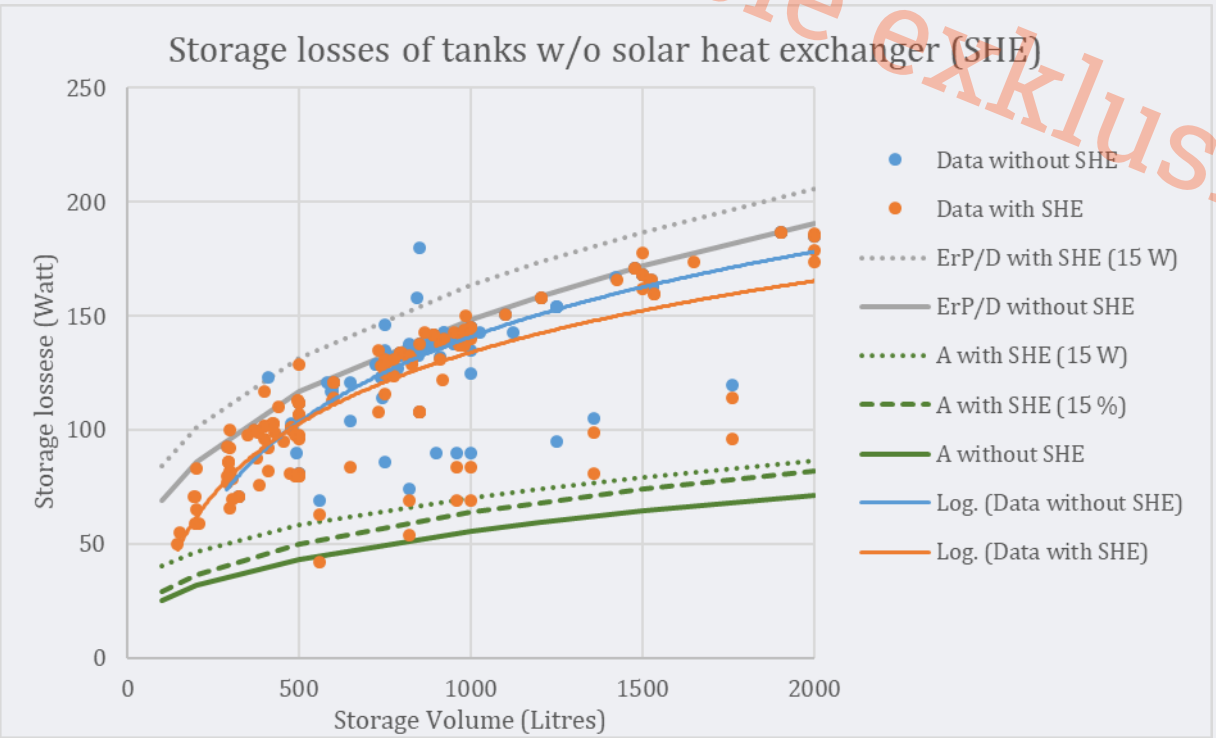
Energy efficiency classes

- We support to introduce the load profiles of 3XL and 4XL into the label and to combine some of the load profiles. we support to maintain the technology neutral approach for the Energy Label.
- The framework regulation requests class A to be empty. However, we fear that it is technically impossible to reach this class for (at least) the two smallest load profiles within the method described in annex III.
- What technologies are expected to reach classes C+D of load profiles XS+S? According to our estimations, these classes would be empty; so the gap could be filled by moving electric water heaters up. This would result in a more even rating compared to the load profiles 3XS+S.
- The energy efficiency classes eligible for providing incentives by the member states should be extended to A-C for load profile M and to A-D for load profiles L and above.

2. Energy label classes of hot water storage tanks

- The minimum requirements on storage losses are equivalent to class D. Classes E-G would be empty and wasted space. We suggest to set class G to the minimum requirements and to refine the classes in order to improve the product distinction.

- We welcome the consideration of multivalent tanks that enable contribution of renewable energies. However, a fix bonus of 15 W is not appropriate as analysis of 2016 data shows: First, the trend lines (blue/orange) merge for smaller storages. Second, the bonus exceeds the class sizes for small volumes. Instead, a relative bonus of max. 15 % fits the product characteristics better (as indicated in the diagram for class A).



(Source: excerpt of "Sonne Wind & Wärme" database 2016)

Annex III

2.) Label for water heater or packages of water heater with solar device, hot water storage tank and/or drain water heat recovery device (climate dependent)

We prefer indication of the seasonal efficiency over indication of the annual energy consumption. One of both values is sufficient on the Label.

3.) Additional pictograms for the label

- The icon for solar device differs from that for space heaters; it should be uniform.
- Indicting sound emissions outdoor and indoor should be maintained and transferred to space heaters. For sound classes see above on space heaters.
- The arrow for exhaust air should be complemented by a fan symbol.
- There is no definition for *"energy smart"* – are all functions of def. 26/28/29 needed or just one of them?
- The modular approach is quite interesting; it may be transferred to space heaters.

5.) Label gas fired water heater, H2-ready

(see above for space heaters)

Annex IV

2.) water heater

- The field *"H2-ready"* is not applicable to electric water heaters; a third option *„not applicable"* should be allowed.
- A row for the indoor sound power level is missing.

Annexes VI+VII:

(see above for space heaters)

Annex VIII:

- Formulas to calculate the annual energy/fuel consumption (AEC/AFC) are missing.
- The reference to the test setup and the tolerances of the measuring instruments should be included in the table. Both considerably increase the quality of the measurement results.

Disclaimer and Contact

We agree to have these comments uploaded to CIRCABC. For further information please contact: ebpg@bam.de.

The Federal Government

June 2023

German Comments

following the Ecodesign and Energy Label Consultation Forum on space and water heaters on 27th April 2023

General remarks

We appreciate the extensive work done by the Commission. The working documents show great steps forward. However, we would like to make some comments to further improve the texts. Most of our comments to space heaters also apply correspondingly for water heaters and storages.

Certain exemptions, which are currently proposed in the negotiations of the EPBD (e.g. the option to use H2-ready heaters) seem to contradict the planned ecodesign requirements on space heaters. We ask COM to ensure that the relevant European regulations are harmonized and legal certainty is guaranteed. European regulations have to ensure that H2-ready heaters are not banned in any de jure or de facto way.

Ecodesign for Space and combination heaters

Art. 1 Scope:

Germany mostly agrees with the scope of the Ecodesign working document. We see the need for a change regarding large heat pumps to keep a level playing field among technologies.

Par. 2 e)-g): The exemptions **e)-g)** may be useful for clarification. However, they may not be necessary as the definitions already exclude these products (if not, the definitions should be refined).

Par. 2 j): If the scope is extended to **1 MW**, reversible heat pumps **above 400 kW** should not be exempted but be in the scope of this regulation with their heating function.

Art. 3 Ecodesign requirements and timetable

The requirements in this article only address *placing on the market* while **Article 1** also mentions *putting into service*. We suggest using *"placed on the market and/ or put into service"*.

The date when the *"first unit is placed on the market"* must be verifiable for market surveillance when encountering any unit of the model. It should be defined how the proof is to be provided. An EPREL entry, which would contain this date is only required for devices **up to 70 kW** rated power. This issue applies also to **Article 4**.

Art. 4 Conformity assessment

In principle we agree to introduce third party testing in order to create a level playing field and to support market surveillance authorities.

However, accredited laboratories may be missing, especially for large space heaters. Third party testing may be applied for space heaters **above 400 kW** after a transitional period of 2 more years, i.e. from **01.09.2027**.

After 4 years, the old directive **92/42/EEC** is to be withdrawn. This means that after **01.09.2029** there is no requirement for "old" heaters anymore whose first units have been placed on the market before **01.09.2025** and which still might be on the market. We propose to clarify that after **01.09.2029** also the conformity of "old" heaters has to be declared according to the new rules.

Art. 8 Review

- **1.**: In a future revision there should be considered an emission limit value for **total C** for Cogeneration space heaters with internal combustion engine gaseous fuels which is implicitly addressing the methane slip of motor engines. Methan gas emission is a climate driver and should be reduced[1]. In particular, the review shall assess:

  (e) Leakage of methane (total carbon) for cogeneration space heaters with internal combustion engine for gaseous fuels and if it is appropriate to set emission limit values for methane or total carbon emissions;

  (f) Possible use of hydrogen (current and in future) and if hydrogen slip is possible.

- **2.**: We are not in favour to postpone the decision on introducing the compensation method to an early review. To display real efficiencies to users, allow fair comparison of products and enable market surveillance the compensation method should be introduced in a second tier. This would allow manufacturers and labs to prepare now and support the RePower EU targets for heat pumps.
  The compensation method was developed over a couple of years by BAM with a consortium of leading test and research institutes. Based on the findings from the two round robin tests by BAM the method has been refined and a proof-of-concept was successful in three different labs, proving maturity. A revised test guideline is available and was shared with **CEN/TC113/WG8**, which can refine it in the coming months. Further, the compensation method is more developed than the control verification procedure of **Annex III, section 12.**

  Therefore, we ask the Commission to
  a) make the compensation method mandatory for heat pumps and hybrids two years after application
  b) Include the latest BAM test guideline as transitional method which can be replaced soon by (pr)EN14511-5.
  Compared to the compensation method the CVP for heat pumps is a completely new and unvalidated methodology. We do not understand why the CVP should be considered more robust.

[1] https://www.umweltbundesamt.de/publikationen/unterschaetztes-treibhausgas-methan

Annex II

1. Energy efficiency requirements

1. c) 115 % by 01.09.2029:
We see the need to decarbonise the building stock and to transform the space heaters market to renewable energies carbon neutrality. We also need preventive policies to protect consumers from severe fuel price increases and stranded investments. Ecodesign can contribute to meet this purpose and push the market further. Solutions for particular situations like buildings with B1 boilers may today not yet be state-of-the-art, however this is going to change in the course of this decade as these solutions are currently being developed – like the project of IEA Annex 50 showed.[2] So this requirement is a matter of available solutions, of timing and of supportive boundary conditions set by the EU and its member states. Moreover, the wider focus should be decarbonising the heat energy supply with renewable electricity, green gases and other forms of renewable heat. It is important that changes to energy efficiency requirements are considered in this context and an overall calibrated approach is found.

Germany follows an approach of technological openness and aims for high overall energy efficiency and low operation and investment costs. However, a way should be found how to maintain H2-ready space heaters and space heaters based on biomethane, blue or green hydrogen and biomass on the market. Furthermore, the transformation of the space heaters market can only succeed if the transformation process takes into account affordability and feasibility for all building owners and tenants, that are affected.

Germany is preparing a national law ("Gebäudeenergiegesetz"; GEG) that establishes a minimum share of 65 % renewable energies for newly installed heating systems (possibly in force progressively from 01.01.2024; legislative procedure not yet finalized). This level is more ambitious; however, it will be still allowed to install conventional boilers, e.g. in these particular situations:

- for shared chimney installations (single replacements allowed; then 3-10 years for transition),
- for sudden permanent damage (3 years transition),
- for elderly building owners,
- in special hardship cases,
- if a connection to renewable district heating or to a H2-network is planned (until 2034),
- boilers which are able to use both natural gas and blends of 50 %, 65 % and 100 % H_2,
- boilers using biomethane and biomass.
- In cases of hardship

Currently, we need to discuss and clarify some critical issues before we can decide if and to what extent we may accept the (possibly modified) 115 % requirement. Germany cannot support any regulation for conventional space heaters and boilers that does not allow for exemptions in particular situations, such as those mentioned above.

In addition, on European level, certain exemptions, which are currently proposed in the negotiations of the EPBD (e.g. the option to use H2-ready heaters) seem to contradict the planned ecodesign requirements on space heaters. Furthermore, the EP has already submitted its position,

[2] Overview of solutions: https://heatpumpingtechnologies.org/annex50/solution-matrix/, case studies at https://heatpumpingtechnologies.org/annex50/case-studies/

that also includes several aspects regarding heating. This process and the further discussions in this regard have to be taken into account when deciding on the Ecodesign requirements. We therefore ask COM to ensure that the relevant European regulations are harmonised and legal certainty is guaranteed, providing for an approach of technological openness.
In addition, we underline the need to have clear and unambiguous legal coherence which prevent any contradictions, especially between possible exemptions and the prohibition of placing certain products on the market.

2.) The requirements for B1 boilers are higher than the benchmarks. This should be corrected.

The caption of the **water heating efficiency table** reads *"S to XXL"*, while it has entries up to *"4XL"*.

3. Sound power requirements

The preparatory study[3] of 2019 for the amendment of the **Commission Regulations (EU) No 813**[4] and **No 814**[5], focuses on the noise impact of air source heat pumps. Not only the consumers, but especially the consumers' neighbours suffer from the noise impact of increasing heat pump operation in sensitive areas. Thus, the technical abatement of noise emissions from heat pumps has become very important for the last years. The manufacturers of air source heat pumps developed feasible measures to lower the noise of their products. Today, the market offers very efficient heat pumps which are nearly inaudible by their users or the neighbourhood.

Incomprehensibly, the study did not analyse the noise emissions available on the market, even though the COM has a very sophisticated database[6]. That is why, the proposed sound power level limits for space heaters and water boilers with air source heat pumps in the Regulation draft are the same as in both **Regulations of 2 August 2013**. These values, however, are based on preparatory studies for the eco-design of air conditioners (Lot 10) by the COM published in 2009[7]. Thus, these limits are very far from the realistic noise behaviour of air source heat pumps 14 years later.

Based on our extensive investigations of sound power values on the market we propose the following new set of limits for space heaters and water boilers with air source heat pumps:

Heat output at part load condition C, as set out in Annex III, Table 4	**Sound power level (L_{WA}), indoors**	**Sound power level (L_{WA}), outdoors**
≤ 6 kW	~~**60**~~ **40 dB**	~~**65**~~ **60 dB**
> 6 kW and ≤ 12 kW	~~**65**~~ **45 dB**	~~**70**~~ **65 dB**
> 12 kW	~~**70 (> 12 and < 30) / 80 (> 30)**~~ **50 dB**	~~**78 / 80**~~ **70 dB**

[3] Review study of Commission Regulation (EU) No. 813/2013 [Ecodesign] and Commission Delegated Regulation No. (EU) No. 811/2013 (Energy Label)
[4] https://eur-lex.europa.eu/eli/reg/2013/813/oj
[5] https://eur-lex.europa.eu/eli/reg/2013/814/oj
[6] https://eprel.ec.europa.eu/screen/product/spaceheaters
[7] TECHNICAL ANALYSIS OF EXISTING PRODUCTS: Preparatory study on the environmental performance of residential room conditioning appliances (airco and ventilation) Contract TREN/D1/40-2005/LOT10/S07.56606; Draft report of Task 4; March 2009

Combined heaters and boilers like hybrid heat pumps can emit other noise levels than single space heaters or water boilers. It is advisable to develop a separate proposal for combined heaters and boilers. We urge the COM to develop a proposal of reasonable sound power level limits from present data from their own EPREL database.

4. Requirements related to emissions

The new proposal leaves the requirements at the same values. This is not state of the art because the old emission limit values are more than 10 years old. This aspect is all the more important the longer fossil fuelled boilers remain on the market.

Fuel boiler space heaters and fuel boiler combination heaters using gaseous fuels
The recent limit value is **56 mg NOx/kWh**. For installations above 400 kW this value is quite ambitious and leads the right way. The emission limits should set closer to the benchmark value of 35 mg/kWh or closer to the results of the Review study. Therefore, fuel boiler space heaters and fuel boiler combination heaters using gaseous fuels should have a maximum of **40 mg NOx/kWh** fuel input[8,9].

Fuel boiler space heaters and fuel boiler combination heaters using liquid fuels
The recent limit value is **120 mg NOx/kWh**. For installations above 400 kW this value is quite ambitious and leads the right way. The emission limits should be set closer to the benchmark of 50 mg/kWh or closer to the results of the review study. The NOx emission limits at the test stand in 2011 were already on average 56 mg/kWh; none of the oil boilers had emissions above 120 mg NOx/kWh.[10] A value of 60 mg/kWh would be achieved by more than the half of the 2011 available boilers, and significantly more of the today available products. Therefore, fuel boiler space heaters and boiler combination heaters using liquid fuels should have a maximum of **60 mg NOx/kWh** fuel input

Cogeneration space heaters with internal combustion engine gaseous fuels
For cogeneration with internal combustion engines the **813/2013 regulation** gives relatively lenient limit values of **240 (gas) and 420 (liquid fuel) mg/kWh GCV**, whereas the **MCP** gives relatively more stringent values of **95 (gas) and 195 (oil) mg/m³** for new engines. Lambda-1 motor engines with 3-way catalyst – which are state of the art – can achieve the emission level of condensing boilers. With 2009 data, more than one third of the available units would meet this level[11]; with progress in state of the art until today even more. This would lead to a reduction of NOx but also of methane. A limit of 40 mg/kWh could also be a stimulus for the MCPD as well as for a national regulation. Therefore, cogeneration space heaters with internal combustion engine for gaseous fuels should have a maximum of **40 mg NOx/kWh** fuel input.

[8] This value was the proposed value for the blue angel for gas boilers from DE UZ 61 65% of the sample complied with this value; see M. Bost et al.: Überarbeitung der Vergabegrundlage für das Umweltzeichen „Gas-Brennwertgeräte“ (RAL-UZ 61) sowie Überprüfung des Rahmens für ein Umweltzeichen für Öl-Brennwertgeräte - 2011). [Revision of the basis for awarding the eco-label ‘Gas condensing appliances’ (RAL-UZ 61) and review of the framework for an eco-label for oil condensing boilers], June 2011
[9] The Benchmark value is 14 mg/kWh. The former support programme from city Hamburg to exchange gas boilers was with 20 mg/kWh on the same level.
[10] Same source as footnote 8
[11] Analysis of the list of cogeneration units eligible for funding in the German programme on mini cogeneration units.

5. Requirements for material resource efficiency

We support the requirements for material resource efficiency.

(1) (a) More spare parts should be defined, e.g. heat exchangers, impellers, control elements (displays, coverings, buttons), parts of self-monitoring equipment (storages, sensors).

(1) (new point) Software and -firmware updates shall be provided over a period of **10 years** after placing the product on the market and these updates need to be **free of charge**. We therefore propose a new point on software updates:

"Manufacturers, importers or authorised representatives of space and water heaters using software shall make available software and firmware updates for a minimum of 10 years after placing the product on the market. These software and firmware updates shall be provided free of charge."

(1) (new point) In line with the smartphone regulation (Art 2.1 (5)), the **price for spare parts** should also be included. We propose to use the wording from the smartphone regulation:

"During the period referred to in point 1(b), manufacturers, importers or authorised representatives shall provide indicative pre-tax prices at least in euro for spare parts listed in point 1(a), including the pre-tax price of fasteners and tools, if supplied with the spare part, on the free access website of the manufacturer, importer or authorised representative."

(1) (new point) Repair information should also address intellectual property concerns. In line with the smartphone regulation (Art 2.1 (4) (f)), the following wording should be added:

"Without prejudice to intellectual property rights, third parties shall be allowed to use and publish unaltered repair and maintenance information initially published by the manufacturer, importer or authorised representative and covered by point (b) once the manufacturer, importer or authorised representative terminates access to that information after the end of the period of access to repair and maintenance information."

(2) 10 working days for delivering spare parts is too long. This means that consumers would have to spend over two weeks, including repair services, without heat in the cold winter months. The maximum delivery time should be **5 working days**.

6. Requirements for product information

6.) The high-temperature level that is proposed as information for the energy label should also be applied as ecodesign product information and in this way cover heaters **> 70 kW**.

7. Requirements related to self-monitoring

Overall, we support these requirements.

2) For energy efficiency analysis, hourly or even daily values are sufficient. This would reduce the amount of data stored. In contrast to this, functional analysis (cycling behaviour, connections) requires much higher resolved data like every minute for the last two…four weeks. A *"functional analysis mode"* could be automatically activated for this period by default when putting the heater into service; if another functional analysis is necessary, it could be re-activated manually. However, those analysing tools have to be in line with data protection laws, since recording of the heating behaviour allows for significant conclusions about lifestyle habits of the end-users.

2) We are not sure how useful instantaneous data are. They highly depend on the recent situation that may not be representative for efficiency or functional analysis. It may be more promising to display data at the intervals specified in **point (b)**.

2) *"cumulative"* could be interpreted as the sum of these values. *"average"* data for each specified period could be more useful.

5) It is not sufficient to provide information how to access the stored data – this procedure can still be highly complex or require special equipment. Instead, it should be required that data shall be accessible by a standardised interface (e.g. USB, SD-card, Wifi) in machine-readable format (e.g. csv file). Also, the format of the data should be made available.

Annex III

(h): heat pump water heaters shall be able to reach $\mathbf{T_{peak}}$ of the declared load profile, if not by the heat pump process alone then by the help of an (integrated) auxiliary/backup heater. Allowing lower $\mathbf{T_{peak}}$ is not desirable due to higher risk of legionella contamination. The level playing field for efficiency should be established on the base of a sound health protection level. This issue effects all four regulations.

Qref in the water heating efficiency calculation: the reference to the load profiles should be **Table 8**, not Table 9.

References to the product information sheet should include a reference to the regulation the sheet is defined in, alternatively the term needs a definition in this regulation.

Annex V

Tolerances for $\boldsymbol{\eta_1}$ and $\boldsymbol{\eta_4}$ (for boilers > 70 kW) are missing, these boilers have no requirement on $\boldsymbol{\eta_s}$

Annex VI

3) Please set the benchmark closer to the related products; meaning, there are 10 product types listed in **Annex II Nr. 4** but there are only 2 products types listed in **Annex V**.

Energy Label for Space and combination heaters

General

The new label may enter into force within 3 years. Solid fuel boilers shall be comparable to this label. However, the preparatory work hasn't even started. In consequence, the full range of hydronic space heaters will not be comparable for years. We ask to include these into the ongoing review of the energy label of space heaters or to update as soon as possible. In this way we would maintain comparability.

We understand the proposal as deleting the installer label from the market. Are installers still allowed to issue a label for a hybrid heater they put together from different manufacturers – and would they become suppliers in the sense of this regulation?

In line with the smartphone regulation and the almost completed negotiations on tumble driers, we propose to assess if a repair score as part of the energy label is feasible and useful for space and water heaters, too.

Art. 1 Scope

(9) We welcome the more general definition of a heat pump as using a *"thermodynamic cycle"* (before: "vapour compression cycle") and assume that also new developments like magnetocaloric or sonic heat pumps fall under this definition provided they can be tested according to the defined methods. If these devices could be fit for market before next review of the regulation they should not be excluded from the benefits of the energy label. We ask to check if this interpretation is applicable.

Art. 4 Dealers

The selling situation differs significantly from other products: There is no exhibition of products at the point of sale. It is the regular case that the end-user does not see the product bearing the label. The reference to the information in **Annex VI** when a product is offered is not appropriate: it rather fits to advertisements and promotional material but not a personal selling situation. So as a principle, the complete label with the accompanying technical information should be provided with any offer for a specific product.

Art. 7 Review

Regardless of our comments on introducing the compensation method in the ecodesign regulation, an early review should be mentioned for introducing the compensation method for heat pumps **3 years** after entry into force also in the energy labelling regulation.

Art. 10 Entry into force

3rd sentence: We did not find provisions to apply four years after date of application – so this sentence can be omitted.

Annex I

The terms *"solar device efficiency factor for space/water heating"* (121+122) are defined as factor but get a formula symbol for efficiency η – this should be corrected.

Annex II

1.: The longer fuel boilers are permitted, the more important is the rating on the energy label. In this view, fuel boilers not using renewable energies or cogeneration can be sorted into **class G** (MT regime) only – providing one more class for better differentiation of the other products.

1.: The introduction states that the classes shall apply for average climate conditions. However, **Annexes VI and VII** allow class arrows with other climate conditions. Thus, we understand the introduction as an explanation for the Consultation Forum but not part of the final legal text.

Annex III

We support to show the space heating efficiency on the label in addition to the efficiency class. For water heating by combination heaters, the energy efficiency value should be given instead of the energy consumption (as it is for water heaters). This would be more in line with the information on the space heating efficiency and avoid misunderstandings when the actual consumer behaviour deviates from the loading profiles.

We expected that COM would also classify the noise emissions of air source heat pumps – comparable to dishwashers[12] and washing machines[13]. This would be a strong market instrument for supporting both, EU manufacturers' progressiveness and customer decision. According to our proposal for the limits, we propose the following noise classes:

Rated heat output		***≤ 6 kW***	***> 6 kW and ≤ 12 kW***	***> 12 kW***
Sound power level (L_{WA}) classes, **indoors**	**A**	≤ 31 dB	≤ 36 dB	≤ 41 dB
	B	> 31 dB, ≤ 34 dB	> 36 dB, ≤ 39 dB	> 41 dB, ≤ 44 dB
	C	> 34 dB, ≤ 37 dB	> 39 dB, ≤ 42 dB	> 44 dB, ≤ 47 dB
	D	> 37 dB, ≤ 40 dB	> 42 dB, ≤ 45 dB	> 47 dB, ≤ 50 dB
Sound power level (L_{WA}) classes, **outdoors**	**A**	≤ 51 dB	≤ 56 dB	≤ 61 dB
	B	> 51 dB, ≤ 54 dB	> 56 dB, ≤ 59 dB	> 61 dB, ≤ 64 dB

[12] https://eur-lex.europa.eu/eli/reg_del/2019/2017/oj
[13] https://eur-lex.europa.eu/eli/reg_del/2019/2014/oj

C	> 54 dB, ≤ 57 dB	> 59 dB, ≤ 62 dB	> 64 dB, ≤ 67 dB
D	> 57 dB, ≤ 60 dB	> 62 dB, ≤ 65 dB	> 67 dB, ≤ 70 dB

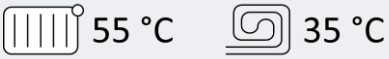
The Energy Label shall contain the classified sound power level comparable to the label for dishwashers and washing machines:

In addition, the specification of an indoor sound power level has been omitted in the draft Regulations. Thus, customers will be deprived of the simple possibility to inform themselves sufficiently about possible noise nuisances caused by their heating system. We propose that, as in the present **Regulations 813 and 814 of 2013**, both noise levels - indoors and outdoors - shall be marked and classified on the labels if a heating system consists of several units that produce different noises (e.g. split units).

The examples of the labels should be consistent: The arrow **B** does not match **90 %**.

The unit of rated heat output should be kWh_{th} (in contrast to kW_{el}).

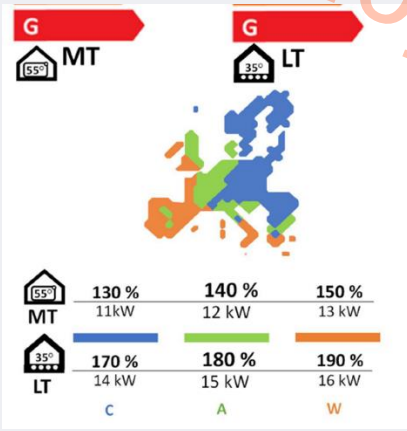
In the proposal, **labels 4+5** have different icons. The space heating function should be always marked with the same icon, preferably a radiator (for MT regime) and floor loops (for LT regime), possibly combined with the design supply temperature:

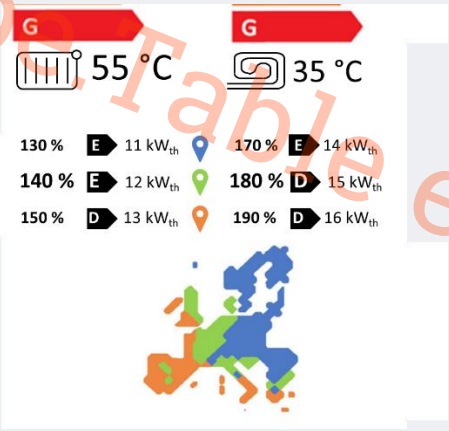


The entries for the electricity generation (grey bar only → electricity arrow with output indication) and control class (Roman numerals → hand with control panel) are too abstract and nearly impossible to understand.

The annual energy consumption for water heating should be replaced by the water heating efficiency (as it is for dedicated water heaters). This would be more consistent to the efficiency of the space heating function.

4.: The bottom table with additional data should be redesigned: use the same heating icons as **labels 1-3**, remove the abbreviations **c – a – w**, replace the colour bars by location indicators and add the efficiency classes in the three climates:





It should be clarified where the QR-code refers to: "I. QR code **to EPREL entry**"

Annex IV

It is important that advertorial claims of high temperature heat pumps are guided with efficiency data. It should be clarified that the high temperature regime is only applicable if the product is technically able to meet the required inlet/outlet temperatures set out in **Annex VIII**.

For heat pumps, information on the type and amount of refrigerant should be given. This would support the strong phase-down of HFC refrigerants by 80 % until 2030 and beyond according to the F-gases-regulation by making this information searchable in the product database EPREL.

The wording in **paragraph 1** is confusing: It is not clear whether the product information sheet will replace the fiche and whether is to be provided (also) via EPREL. The reference to the current labelling delegated regulation seems out of place.

Annexes VI+VII

Fig. 2: We welcome to integrate the climate into the arrows. However, *a)* just the word *"average"* does not explain that climate is meant and *b)* the language should be adopted to the country the product is marketed in. Because the efficiency class for the water heating function can differ from the space heating class, it is important to indicate also the function for that the efficiency class is given. The same applies for the space heating temperature level.

As an easier approach, the **QR code** from the energy label should be printed next to the arrows. This would make all information in EPREL available.

Annex VIII

Controls play an important role in the energy efficiency of a space heater. Hence, they should be rewarded by the energy label. This would mean to replace the **F(1)** by the effect of the control that is delivered together with the space heater. Showing the control class on the label with roman numerals only provides less incentives for better control strategies.

Table 4 (p. 43): The figures in the columns **A(verage)** and **C(old)** may be mixed. We would expect the temperatures in the average temperature regime to be lower than in the cold regime.

7. (a) The reference to **Annex VIIa** should read **Annex IX** instead, as this annex lists the standards.

7. (c) Is the factor $\mathbf{f_{tank}}$ missing in the equation? It is used for water heating in **point (b) (3)**.

Annex X

The reference to the **Ecodesign directive** seems odd, as does the reference to **Table 8** or the responsibility of the *"manufacturer…"*.
We assume this is meant to refer to the **Energy labelling framework regulation**, to **Table 13** and to the *supplier*.

Ecodesign for Water heaters and storages

Annex I

(31) $\mathbf{F_{ctrl}}$: We understand the purpose of this factor to differ hydronically controlled electric instantaneous water heaters from electronically controlled ones. We have been told that a more sophisticated method is being developed. It is going to use the smart control factor. In consequence, distinction of the control of EIWH can be deleted from the regulations if the most recent standard is referred to.

(39): The definition of multivalent tank might be simplified: It is not necessary to refer to heat exchangers or multiple heat generators. Tanks can be loaded directly without heat exchanger, too. Instead, the number of connections is sufficient: A conventional tank needs two connections to load the storage and another two connections to draw the heat from the tank (each with or without heat exchanger) and possibly a fifth connection for the return of the hot water circulation. So a multivalent tank offers at least 6 connections?

Annex II

1.3: We prefer to give the NOx requirements in the same format, e.g. either as table as for water heaters or with factors for the reference gases as for space heaters.

1.5 Nr. 2): 10 working days for delivering of spare parts is too long. This means that consumers would have to spend over two weeks, including repair services, without heat in the cold winter months. The maximum delivery time should be **5** working days.

2.1: We support the intention to increase the requirements on storage losses. However, we ask the Commission to check if manufacturing of storages with these low losses may be limited by the planned PFAS phase-out which may remove blowing agents for insulation foams.

2.1: *"mvc"* is not used in the document and should be deleted.

Annex III

It should be clarified that multivalent tanks are not tested as monovalent tanks.

3. (d) Indoor air shall be used if <u>all</u> three options are fulfilled; and not be tested if <u>none</u> of these options is fulfilled. It remains unclear what to do if <u>some</u> of these options are fulfilled.

Table 9: Air from non-heated space may be added. This option is included in EN 16147.

The ambient correction term Q_{corr} should be available for the smallest load profiles, too, as it is in the recent regulations.

Annex V

Tolerance of **8 %** for η_s is a multiple of the actual uncertainty.

Tolerance of **5 %** for storage losses is very little especially for small losses. We propose a minimum tolerance of around **5 W** and for higher losses a relative tolerance of **5 %**.

Energy Label for Water heaters and storages

Annex III

We welcome the design of the labels and propose the following changes:

- We prefer to indicate the seasonal efficiency over the indication of the annual energy consumption as it is proposed in this document.
- The icon for sound power is missing; also here we prefer sound classes as for space heaters.
- **1)** The water heating function should be presented below the efficiency classes as in **labels 2+3**.
- **5)** An icon for multivalent storages is missing.

Annex VIII

Formulas to calculate the **annual energy/fuel consumption (AEC/AFC)** are missing.

The Federal Government

June 2023

Additional German Comments

in the aftermath of the technical-stakeholder-meeting regarding Ecodesign requirements for space and water heaters on 12th June 2023

Tier 2 Technical issues: "115 %-requirement"

As mentioned in our written comments, Germany is preparing a national regulation that establishes a minimum share of 65 % renewable energies for new heating systems. However, it will be still allowed to install conventional boilers, e.g. in particular situations as laid down in our written comments to the consultation forum. Also, for considerations regarding the interrelation to the EPBD review, please see the written comments to the consultation forum.

Currently, we need to discuss and clarify some critical issues before we can decide if and to what extent we may accept the (possibly modified) 115 % requirement. Germany cannot support any regulation for conventional space heaters and boilers that does not allow for exemptions in particular situations, such as those mentioned in our written comments to the consultation forum. Our questions are about how to establish possibly an acceptable regulation:

- Tier 3 of the lighting regulation 1194/2012 was linked to an assessment by the Commission whether a couple of conditions about the availability of products are met before entry into force. The result was presented to the Consultation Forum. How does the Commission estimate the reliability of this approach and its potential to address the particular situations with regard to space heaters and boilers?
- What technical and regulatory solutions do we have for shared chimney installations beyond extending the transition period? For example, accelerate market development, timing options or complementary EPBD measures.
- Is it possible that manufacturers have to meet the 115 % requirement only for a specific share of their delivered products for a certain period?
- Is it possible to ensure hydrogen-compatibility of boilers via ecodesign, that means to request new boiler models to operate with blends from 0 % to 100 % hydrogen (for example new models from 01.09.2025, all units from 01.09.2029)?
- Is a conversion coefficient for green hydrogen and biomethane possible? (Do Eurostat data on gas sources provide a sufficient database instead of EED?)
- Will a market for second-hand boilers develop?

Third Party Conformity Assessment (TPCA) provisions

In principle we agree to introduce third party testing in order to create a level playing field and to support market surveillance authorities.

Accredited laboratories may be missing in due time, especially for large space heaters. Is there proven knowledge about this? TPCA may be applied for first units of space heaters above 400 kW after a transitional period of 2 more years, i.e. from 01.09.2027.

After 4 years, the old directive 92/42/EEC is to be withdrawn. This means that after 01.09.2029 there is no requirement for "old" heaters anymore whose first units have been placed on the market before 01.09.2025 and which still might be on the market. We propose to clarify that after 01.09.2029 also the conformity of "old" heaters has to be declared according to the new rules.

Control of notified bodies is implemented independently from ecodesign and would have to be improved on national level.

We support to reconsider an adaptation of test points for heat pumps to meet the needs of EBPD calculations and planners leading to more reliable inter and extrapolation of performance. The needs of planners and installers should be taken into account to allow for proper product selection while ensuring also the comparison of product performance on the Energy Label. Furthermore, we support the Commission's proposal to randomly choose test points from the test conditions defined in EN 14825 for TPCA. This would strengthen the incentive for an overall efficient product design rather than an optimisation only on specific test points. However, the choice of test points should not delay the further preparation of the draft regulation.

The noise emissions of air source heat pumps regularly contain low-frequency components that can cause considerable annoyance during operation. Generally, there is no problem in measuring these components. To do this, the frequency range of the harmonised standard EN 12102 would first have to be extended downwards by one octave. This can be arranged by the EU Commission with a test mandate to the European standardisation organisation CEN. In order to make the information visible, a pragmatic parameter (e.g. LLF = LWC - LWA) shall be developed and made mandatory.

Scope definition for reversible heat pumps

We propose to define reversible heat pumps by their functions. This means that their heating function should be regulated as a space heater and their cooling function (by using the compression cycle) as a cooling product. As the efficiency requirement for the heating function of a heat pump is not so stringent, we do not expect problems to arise.

During the review of the ecodesign regulation on cooling products 2016/2281/EU it may be investigated if the energy efficiency of reversible heat pumps significantly differs from dedicated chillers – if so, we would support separate requirements for the cooling function of reversible heat pumps.

The passive cooling function of brine heat pumps should not be regulated but probably highlighted on the energy label.

Presentation of the heat pump action plan

We highly appreciate the plan.

The following issues could be in focus:

- How to reduce purchase cost of heat pumps (including installation)?
- Develop supportive financing opportunities for low-income and elderly owners.
- How to create planning security to trigger reliable and future-proof purchase decisions (which includes projectable energy cost)?
- How to share experiences in practise regarding efficiency (measured SCOP data), noise, refrigerants?

However, most important is to implement the plan.