

# POSITION PAPER



## COMMENTS ON THE REGULATIONS ABOUT ECODESIGN AND ENERGY LABELLING REQUIREMENTS FOR AIR HEATING AND COOLING PRODUCTS

Brussels, January 2024

### INTRODUCTION

We welcome the long-awaited review of the Ecodesign regulation of air heating and cooling products covered by EU 2016/2281 and similar products that could also be in the scope of Ecodesign rules, originally supposed to happen in January 2022. The products in the scope of EU 2016/2281 are driven by electricity or fired by gas or oil. These are:

- Products heating air, including air-to-air heat pumps lower than 1 MW capacity<sup>1</sup>,
- Air conditioners with a capacity from 12 kW to 2 MW<sup>2</sup>.
- Water cooling products with a capacity no exceeding 2 MW<sup>3</sup>,
- Fan coil units.

Appliances using solid fuels, cogeneration units and specific types of high-temperature chillers<sup>4</sup> are excluded from the scope of this regulation. This product group has a significant energy consumption and, for some products, emissions. If comparing current energy efficiency requirements with BATs, there is considerable potential for energy savings and GHG emissions reductions.

We look forward to valuable outcomes that hopefully can boost energy efficiency and reduce the environmental impacts of such appliances.

### SCOPE

#### ECODESIGN

Generally, we believe the efficiency and emission requirements currently regulated in this product lot should be kept, avoiding double regulation with, e.g. Medium Combustion Plant Directive (EU) 2015/2193.

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<sup>1</sup> Excluding smaller heat pumps with a capacity of up to 12 kW (included in the local space heating regulation).

<sup>2</sup> Smaller air-conditioners are regulated by EU 206/2012.

<sup>3</sup> Such as chillers with a temperature range of 2-12°C: comfort chillers (mainly used in central air conditioning and air handling systems) and high-temperature process chillers (used in industry).

<sup>4</sup> The ones using exclusively evaporating condensing and using an absorption process via heat as an energy source (i.e. working with absorption refrigeration).

According to the presentation<sup>5</sup>, reversible heat pumps  $\leq 400$  kW are only covered by heating requirements in Lot 1, and  $>400$  kW are covered by cooling requirements in Lot 21. In the latter, reversible heat pumps that cool water are covered for their cooling function from 0 to 2 MW, so the intention of the statement cannot be that they are only covered for cooling  $>400$  kW: we reiterate the need to extend the scope of space heaters (lot 1), up to 1 MW, to avoid loopholes in the regulation.

However, we propose that *the scope of this directive should be extended to:*

- Chillers using evaporative condensing.
- Chillers using free cooling, wholly or partly.

Additionally, we think that the ongoing review study should consider including:

- Absorption process-based refrigeration chillers, typically using heat as the energy source.
- Chillers operating within different temperature ranges are not included in the current regulation<sup>6</sup>.
- Products using solid fuels, including biomass.
- Products that co-produce power as cogeneration or trigeneration for heating and/or cooling purposes.

Regarding the inclusion of *IT cooling equipment*, we support keeping the exact requirements for comfort cooling, specifically for a capacity above 12 kW, within this regulation<sup>7</sup>.

*Combination warm air heaters*, producing heated air and warm water, are in the scope of this regulation. If embodied with a water heating function, they should be aligned with the water heating regulation (lot 2).

Regarding *products that heat and cool simultaneously* (e.g. polyvalent units / 4-pipe units as well as VRF units – currently covered by lot 1 for heating production and by this lot for cooling production), we do not see the need for a special category for them regarding performance. However, having the STER index for combined seasonal efficiency for heating and cooling for polyvalent units in the information requirement is helpful, as proposed by Eurovent.

We support the most logical division of products among regulations. Additionally, we would support moving the *fan coil units* product category to a (revised) ventilation regulation.

## ENERGY LABELLING

Currently, there is no energy labelling regulation for such appliances. However, **we firmly believe that the most used products covered by this regulation should be labelled** as air heaters, as the market forecast is expected to sell above 50,000 units/year until 2050, according to the [Ecodesign Impact Accounting Report 2021](#). Particularly:

- Air conditioners, including reversible ones above 12 kW, are to be aligned with smaller appliances, as in EU 626/2011.
- Comfort and process chillers with the same operating temperatures, avoiding suppliers to categories without any constraints.

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<sup>5</sup> At slide 45

<sup>6</sup> Although, they might have different test requirements and MEPS, given their different operating temperatures.

<sup>7</sup> For smaller capacities, they should be in the scope of EU 2012/206.

Moreover, air heaters can use a label, similar to space heaters, with additional parameters, e.g. noise level. While the impact accounting report concluded that fossil fuel-fired heaters will remain on the market until 2050, it is likely that the market will move towards heat pump air heaters. A label that covers all products with the same function of air heating (oil and gas fired, electric, heat pumps) will support this move.

## ENERGY EFFICIENCY REQUIREMENTS

Overall, the energy efficiency requirements should be revised, aligning the requirements with similar products, such as space heaters (lot 1) and air conditioners / air-air heat pumps below 12 kW (lot 10).

The EPREL database includes several high-efficient reversible air conditioning products with SEER (Seasonal Energy Efficiency Ratio) above 6 and with SCOP of 4,0, as depicted in Table 1.

Highest efficiency air conditioning products in EPREL according to energy labelling regulation - EU2011/626	SEER	SCOP	Energy class
Haier – 26 kW	8.5	4.6	A+++
Baltur – 12.3 kW	6.6	3.8	A++
Mundoclima MUCSR – 15.3 kW	6.3	4.0	A++
Midea MTI48 – 14 kW	6.1	3.8	A++
MDV – 15.5 kW	6.1	4.0	A++
Midea MCD55 – 15.7 kW	6.1	4.0	A++
Azuri – 12 kW	6.1	4.0	A++
AUX – 12.1 kW	6.1	4.0	A++
INVENTOR – 15.7 kW	6.1	4.0	A++
Fisher – 15.7 kW	6.1	4.0	A++

Table 1: Selection of 10 best performing reversible air conditioning products above 12 kW according to EPREL database, visited January 2024

- For *electric air conditioners* (above 12kW):
  - With a PEF of 2,5, the current Ecodesign requirements set the minimum efficiency of 189%, equal to a SEER of 4,7. Considering that many air conditioners can achieve a SEER above 6, we propose **to increase SEER to 6**.
- For *reversible heat pumps* (above 12kW):
  - The current ecodesign requirements set a minimum efficiency of 137% (equal to SCOP of 3,4). The EU206/2012 sets a minimum SCOP requirement of 3,8 for 6-12 kW reversible air conditioners with GWP>150. Given that a large number of reversible air conditioners, working as air-to-air heat pumps, can reach SCOP of 4, similar to **an efficiency of 208% with CC=1,9**, we believe that this could be the new energy efficiency requirement.

- For *roof-top air conditioners and heat pumps*, the efficiency requirements are considerably lower than for other configurations. Hence, **alignment on the requirements is needed**.

Moreover, it is crucial that the review study includes considerations for increased efficiency of all the other products covered by this regulation. as benchmarks for efficiencies listed in EU2281/2016 are well above the current minimum efficiency requirement, not only for air conditioners and heat pumps, but also for warm air heaters and chillers, including C2 and C4 warm air heaters. Hence, for warm air heating, we propose to **increase the minimum efficiency requirements to above 100%**, discontinuing the production of new fossil fuel-based appliances and leaving only clean alternatives in the EU single market.

Lastly, we propose to include efficiency requirements for fan coils regarding their ventilation function.

## EMISSION REQUIREMENTS

The current regulation allows higher NO<sub>x</sub> emissions for warm air heaters compared to boilers of the same capacity, such as:

- For gas-fired equipment, the limit for warm air heaters is 70 mg/kWh fuel input, compared to 56 mg/kWh fuel input for boilers.
- For liquid fuel-fired equipment, the limit for warm air heaters is 150 mg/kWh fuel input, compared to 120 mg/kWh fuel input for boilers.

Hence, **we call for a reduction of NO<sub>x</sub> emissions limits for warm air heaters**, aligning the ambition with boilers' requirements. Regarding tolerances, we propose that the review team consider reducing verification tolerances to 10% for NO<sub>x</sub> emissions.

We support the limits of greenhouse warming potentials of refrigerants included in the F-gas regulation for air-to-air heat pumps shall be applied to the products in the scope of this review. We find that the phase-out of PFAS should also include refrigerants that break down to PFAS if released into the air.

## MEASUREMENT AND CALCULATIONS

We propose that air conditioners and heat pumps should be tested with the *compensation method*. This testing method is currently in the requirements revision for space and water heaters (lot 1 and 2), and it needs to be reflected in this initiative, too.

For heat pumps, we question the need to have the option of a water loop with an inlet *temperature on the primary side* of 20°C<sup>8</sup>. Testing with this high primary side temperature gives a very high efficiency, only because of the temperature specifications, providing confusion and misinformation on energy efficiency, as it allows products on the market that cannot meet efficiency requirements with lower primary temperatures.

We propose that the review team examine the *part load ratios* specified in EU2016/2281<sup>9</sup>. Products tested with this inlet temperature will show a very high efficiency without having a better efficiency for other temperature sets, potentially leading to confusion among consumers and allowing low efficiency products to remain on the market.

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<sup>8</sup> Currently in EU2016/2281, Annex III, table 19

<sup>9</sup> Annex III, table 21, where it is determined that both heating and cooling loads are 21% of the full nominal capacity at an outdoor temperature of 20°C

The specified indoor temperature for air conditioners is 27°C; we propose that the review team consider a lower temperature as the standard indoor temperature for air-conditioned spaces.

If changes are made to measurement and calculation methods, the minimum energy efficiency requirements should be amended accordingly.

We support the introduction of **third-party conformity assessment**.

Regarding tolerances, we propose that the review team consider the reduction of verification tolerances to 5% for energy efficiency.

## CIRCULAR ECONOMY REQUIREMENTS

The revised regulation shall introduce circular economy requirements, which we fully support.

### REQUIREMENTS FOR MATERIAL RESOURCE EFFICIENCY

We believe that access to **spare parts and information for repairs** should at least be allowed for all independent operators, defined as “a natural or legal person, other than an authorized dealer or repairer or remanufacturer, who is independent of the manufacturer and the producer and is directly or indirectly involved in the repair, maintenance and installation of heating appliances”, as it is currently the case in other [EU policy measures](#). For spare parts, where the exchange requires authorisation, the supply can be limited to repairers that are authorised to work on, for instance, gas appliances or electric appliances, as applicable.

In a context where professional repairers must provide evidence of their professional status to manufacturers before accessing repair and maintenance information, requiring manufacturers to motivate their rejection is necessary.

However, we actively support the end of the distinction between professional repairers and end-users in terms of access to spare parts and repair information: all the parts currently listed for professional repairers should be made available to everyone, together with repair information necessary to conduct repair operations as safely as possible. This distinction is purely discriminatory and based on unsubstantiated safety issues. Analysis of data from community repair initiatives shows that the range of repairs performed by end users at repair cafes is wide, requiring access to all the same spare parts used by [professional repairers](#). At least, end-users should be able to replace the control buttons on their own.

Repair information must contain the level of detail necessary to replace parts. Besides, we think there should be **no fee for repairers** to receive information on products, provided that this information is accessible in a digitalised form.

Given its relevance for metal consumption and the carbon-intense production chain linked with heating technologies, and building on the EU’s Green Deal Industrial Plan and the EU’s Circular Economy Action Plan **we strongly support the insertion of recyclability criteria** in this products group. For this reason, we suggest that from 48 months after entry into force, all heating technologies that contain copper, aluminium, lead, and steel will have to contain a share of at least 50% recycled content for those material streams coming from manufacturing waste or post-consumer waste.

Equally important, from 48 months after entry into force all products regulated by the present act will need to have at least a 90% recyclability score for metal and plastics.

## REQUIREMENTS RELATED TO SPARE PARTS

We support the required availability of spare parts, but given the lifetime of the heaters, we find that spare parts should be available for the lifetime of the product, **17 years**.

For the maximum delivery time of spare parts, we consider that 15 working days to deliver spare parts is too long for heating appliances as consumers cannot be expected to live without a functioning appliance for over 3 weeks during the coldest season. Following what has been proposed for mobile phones, smartphones, cordless phones and tablets, we suggest having it as short as **5 working days** for delivery to the repairer in charge or to the end user. We recommend that products are assembled with standard seals and connection means. If this is not the case, the suitable tools to disassemble the proprietary seals and connection means should at least be bundled with the product at the time of sale.

## INFORMATION REQUIREMENTS

We propose that, for polyvalent units, the STER<sup>10</sup> parameters should be included in the information requirements. For fan coil units, we propose to include information for air flow rate at maximum and minimum settings, as well as overall efficiency according to ecodesign regulation (EU) 2011/327 on fans or according to an update of that regulation.

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<sup>10</sup> The index better cover the combined efficiency of a polyvalent unit than the individual heating and cooling efficiencies.