

Joint paper on the benefit of applying the new Primary Energy Factor to Lot 1 and 2 of Ecodesign Directive

IN A NUTSHELL

The latest changes to the conversion factor for electricity in the Energy Efficiency Directive

- Electricity is a final energy carrier produced from different primary energy sources like fossil fuels (gas, coal), nuclear and renewables (hydro, wind, solar);
- Usually a coefficient is adopted to indicate how much primary energy is used to generate a unit of electricity or a unit of useable thermal energy;
- The EU institutions have recently updated this coefficient (Primary Energy Factor, PEF) in the new version of the Energy Efficiency Directive, to better reflect the EU energy mix;
- The value of the PEF decreased from 2.5 to 2.1 to reflect today's share of renewable energy in electricity generation. A 4 year regular review was also introduced to adapt this value to the expected strong increase in RES in the near future.

Why an update is needed also for the conversion factor of the Regulation on space and water heating?

- The same coefficient (Conversion Coefficient, CC) is applied to the regulation on space and combination heating and water heating (Lot 1 and Lot 2 of Ecodesign Directive) and is currently under review¹;
- This value allows to compare the primary energy consumption of heating products using different energy carriers. The lack of CC for fossil fuels and a high CC level (CC of 2.5) for electrical heating products puts them in a lower energy label class, impacting their sales and de facto hampering decarbonisation;

The signatories of this paper call for at least aligning the CC to the new value of the PEF (2.1) in order to reflect the accelerated greening of the electricity mix.

1. It is appropriate to apply the updated Primary Energy Factor from the Energy Efficiency Directive (EED) to the ecodesign regulations and beyond

The European Parliament, the European Commission and the European Council have rightfully revised the primary energy factor (PEF) in the energy efficiency Directive.

Based on a thorough and transparent scientific assessment, a comprehensive stakeholder consultation and an intensive debate in the different legislative bodies, **it was agreed to adapt the PEF to reflect the efficiency improvements in Europe's power generation, in particular today's share of renewable energy in electricity generation and its strong increase in the near future** and to review the factor every four years to reflect future changes.

The new PEF has been determined at a value of 2.1 as of today. The regular 4-year revisions should aim at lowering it more to reflect the evolution of the energy mix. **In order to accelerate the efficient electrification of large parts of society, the PEF of 2.1 (or lower) should now be applied to all relevant legislation, including the Ecodesign Directive implementing measures and related energy labels.**

¹ In June 2018, the European Commission has launched two review studies, one for the regulation on ecodesign and labelling requirements for [space heating boilers and combination heaters](#), another for [water heaters and tanks](#). The studies are carried out by VHK and BRG Building Solutions (for market data) and run for 22 months.

The undersigned parties welcome this decision as a timely move to provide a market signal in favour of available technologies for the efficient electrification of heating and cooling.

Updating the Conversion Coefficient (CC) from **Regulations 813/2013 and 814/2013 to a factor of 2.1 will be a necessary and transparent move to achieve this target. The connection between CC and PEF should also be maintained in the review process, to ensure coherence** and make sure that when the PEF within the EED is reviewed (in 4 years), the update will also feature in ecodesign regulations.

2. The current CC for electricity does not attribute the right value to electrical products and goes against the European energy and climate goals

Fraunhofer and al.² stress the impact of the PEF on the choice of electricity versus fossil fuel based technologies as it seeks to compare the primary energy consumption of products with the same functionality using different energy carriers (i.e. for space heating). In order to avoid misinforming the decision-maker, the CC factor should reflect the conversion efficiency. Using a CC factor, which is higher than this efficiency, distorts the message as, for instance, the primary energy savings of heat pumps in comparison to other fuels will be artificially lowered. This *de facto* misinforms consumers on the real efficiency of the different technologies.

The old CC of 2.5 applied to electricity (and the lack of any CC for fossil energy) gives a competitive advantage to fossil technology and thus encourages the use of more fossil fuels, despite the overall intention to incentivise a reduction in fossil fuel use and in GHG emissions by means of efficient products and systems. The Commission's communication "A clean planet for all" states that "today, more than half of Europe's electricity supply is free from greenhouse gas emissions. By 2050, more than 80% of electricity will be coming from renewable energy sources". Considering the increasing amounts of renewable sources in the future energy mix³, updating the conversion factors accordingly will be essential to decarbonise heating and cooling.

Applying the agreed upon PEF of 2.1 from the EED to the labelling and ecodesign measures will contribute to lowering both the energy consumption and the carbon footprint of space and water heating in the EU.

THE UNDERSIGNED PARTIES:



² [Final report Evaluation of primary energy factor calculation options for electricity](#), page 7

³ According to [Eurelectric](#), renewable energy sources will expand massively in the next three decades (and correspond to 80% of the energy supply by 2045). For [WindEurope](#), in the Paris-compatible scenario the share of renewable electricity generation in the power mix would need to grow from 34% today to at least 78% in 2050.