



# EHPA – Amendments EPBD recast proposal

## About EHPA

The European Heat Pump Association (EHPA) promotes awareness and deployment of heat pump technology in Europe. All activities aim at creating a market environment that facilitates a faster deployment of heat pump technology to unleash its benefits on a European level: efficient heating and cooling using renewable energy. EHPA also coordinates the Heat Pump Keymark – a European certification scheme for all heat pumps, combination heat pumps and hot water heater.

## Introduction

The fit for 55 package is an important opportunity to further expand the energy efficiency benefits and renewable energy contribution of heat pump technologies, as well as to support their large-scale deployment following the EU Strategy for Energy System Integration. Most recently, the REPowerEU communication includes a fast forward target of 10 million hydronic heat pumps to be installed by 2026 aiming at doubling the installation rate, and a total of 30 million newly installed hydronic units by 2030/31. Extrapolating this to all heat pump technologies covered in EHPA statistics, would represent more than 20 million heat pumps by 2026 and nearly 60 million heat pumps by 2030.

An ambitious Energy Performance of Building Directive is important for decarbonizing our heating sector by fully unlocking the potential for heat pump deployment in the EU. Heating still accounts for 28% of all energy used in the EU, this also represents 12% of EU GHG emissions, so shifting to renewables in this sector is very important. Recognizing the full potential of heat pump technologies enables the fit for 55% package to be ambitious and to increase ambition in the future, as heat pump technology is at once available and will become more impactful with the decarbonisation of the electricity mix.



## Summary – EHPA Position

### Give visibility to heat pumps and the role they play in achieving the REPowerEU objectives:

- **Art. 2 – Definition of Heat Pump:** Reintroduce the definition of heat pump
- **Art. 2 (40)– Definition of heat generator:** Add a definition that focuses on the process used in a heat pump but does not limit the sources and sinks to allow for possible future technological developments
- **Art. 9a:** Add the numerical targets from REPowerEU to the solar mandate in the EPBD
- **Art. 15:** Moving forward in time that Member States shall not provide any financial incentives for the installation of boilers powered by fossil fuels (1 January 2025 at the latest) and redirect these financial incentives to heat pumps
- **ANNEX I:** Remove the weighting factors to improve consistency in the article and avoid misleading interpretations of PEFs

### Highlight the role of heat pumps in zero emissions buildings:

- **Art. 2 (2) – Definition of zero emission buildings:** Insert the renewable sources from the grid among the listed energy sources to fully unlock the heat pump potential. The emissions of the energy delivered should be the defining criteria rather than proximity of the grid that delivers the energy
- **ANNEX III and Article 7 (2) – GWP:** Replace the GWP with the calculation of the life-cycle greenhouse gas emissions expressed in CO2 equivalent, as it is considered a more appropriate calculation method for buildings
- **ANNEX III and article 7 (2):** Apply an incremental approach on the whole life carbon calculation, focusing first on those construction materials and technical equipment with the highest carbon intensity to avoid disruption which may delay the needed acceleration



## EHPA PROPOSAL

EPBD 2010/31/EU	EPBD Recast Proposal COM(2021)802	EHPA Proposal
<b>Art 2 – old definition 18</b>		
<p>18. ‘heat pump’ means a machine, a device or installation that transfers heat from natural surroundings such as air, water or ground to buildings or industrial applications by reversing the natural flow of heat such that it flows from a lower to a higher temperature. For reversible heat pumps, it may also move heat from the building to the natural surroundings;</p>	<p><del>18. ‘heat pump’ means a machine, a device or installation that transfers heat from natural surroundings such as air, water or ground to buildings or industrial applications by reversing the natural flow of heat such that it flows from a lower to a higher temperature. For reversible heat pumps, it may also move heat from the building to the natural surroundings;</del></p>	<p><b>18. ‘heat pump’ means a machine, a device or installation that transfers heat from/to sources/sinks such as air, water or ground to or from buildings, for the purpose of providing heating, cooling or domestic hot water.</b></p>
<p style="text-align: center;"><i>Comment</i></p> <p>In the EPBD Recast Proposal, the definition of “heat pump” has been deleted but the definitions of boiler, district heating, heating system and heat generator have not been adapted or deleted. Heat pumps deserve their proper definition in this Directive because they have been recognized as essential to achieving climate targets and developing efficient energy systems. The role that has been conferred to heat pumps by the System Integration Strategy and the very recent REPowerEU communication demonstrates their importance.</p> <p>In 2020, the EU Strategy for Energy System Integration suggested the need for electrifying heat of a large part of Europe’s residential and commercial buildings, leading to a target of around 50 million heat pumps installed by 2030 (and requiring an annual growth of about 16%</p>		



throughout this decade). With the REPowerEU Communication, the European Commission communicated the need to increase annual heat pump sales by a factor of 2 over the next 5 years.<sup>1</sup>

In discussions EHPA had with the EC, the EC was positive on reintroducing the definition of “heat pump”. The proposed heat pump definition is at the same time precise and does not limit the sources and sinks to allow for possible future technological developments.

**Art 2 definition 2 zero emission buildings**

2. ‘zero-emission building’ means a building with a very high energy performance, as determined in accordance with Annex I, where the very low amount of energy still required is fully covered by energy from renewable sources generated on-site, from a renewable energy community within the meaning of Directive (EU) 2018/2001 [amended RED] or from a district heating and cooling system, in accordance with the requirements set out in Annex III;

2. ‘zero-emission building’ means a building with a very high energy performance, as determined in accordance with Annex I, where the very low amount of energy still required is fully covered by energy from renewable **or recovery sources such as waste heat generated or recovered on-site, renewable sources from the grid**, from a renewable energy community within the meaning of Directive (EU) 2018/2001 [amended RED] or from a district heating and cooling system, in accordance with the requirements set out in Annex III;

*Comment*

Heat pumps are one of the key elements in achieving zero emission targets in the building sector. The definition provides a clear and ambitious perspective in achieving this goal. However, a building can still be “zero-emission” and have a very high energy performance if it uses a heat pump that captures on-site renewable energy from the environment and uses renewable energy from the grid as driving energy. Therefore, *renewable sources from the grid* should be included among the listed energy sources. The emission level of the energy consumed should be the defining criteria rather than proximity of the grid that delivers the energy. When looking at the geophysical diversity of the EU territories, taking into account that on-site generation is not possible everywhere and renewable energy communities are not yet widespread, it is

<sup>1</sup> REPowerEU Communication p. 6 : <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A230%3AFIN&qid=1653033742483>





appropriate that renewable sources from the grid are also included in this list. This will also be essential to unlock the full heat pump potential in order to achieve the energy and climate targets and the targets laid down in the REPowerEU Communication. In addition, the Directive should not discriminate any energy carriers. The EPBD revision proposal states that a building using energy provided by a district heating grid may be compliant with the zero emission building definition if the district heating grid fulfill specified criteria such as the use of waste heat. A similar treatment of the energy carrier electricity must be made. Some heat pumps in buildings use waste heat or recovered heat as a source, this is e.g. the case for exhaust air heat pumps, residential waste water heat pumps and a large share of all tap water heat pumps are recovering heat from either waste water or indoor air. The exhaust air heat pumps has a market share exceeding 80% of all new single family houses in Sweden and would with the current definition of zero emission building be banned by 2030. There are some actors that are marketing solutions with sewage water heat pumps in multi family and commercial buildings. This is a small niche at the moment but may increase. Therefore waste heat and waste heat recovery should be included in the definition as well. This can be justified by the Commission’s own wording in Annex 1 of the current EPBD: In the calculation of the primary energy factors for the purpose of calculating the energy performance of buildings, Member States may take into account renewable energy sources supplied through the energy carrier and renewable energy sources that are generated and used on-site, **provided that it applies on a non-discriminatory basis.**” In addition, the current proposal would lead to the absurdity that a building using a heat pump will not fulfil the requirements of a zero emission building unless by assistance of solar PV, but the very same building would fulfill the requirement without PV if the building is using district heat generated by an electric heat pump.

The phrase “generated on-site” also requires further clarification because a heat pump generates on-site renewable heat or cold. However, after having discussed with the Commission, it seems that the definition is also referring to the driving energy used for the heat pump (a heat pump captures around 80% geothermal or ambient energy and uses 20% driving energy).

**Art. 2 – Definition 40 “heat generator”**

	<p>40. ‘heat generator’ means the part of a heating system that generates useful heat for uses identified in Annex I, using one or more of the following processes:</p> <p>(a) the combustion of fuels in, for example, a boiler;</p>	<p>40. ‘heat generator’ means the part of a heating system that generates useful heat for uses identified in Annex I, using one or more of the following processes:</p> <p>(a) the combustion of fuels in, for example, a boiler;          (b) the Joule effect, taking place in the heating elements of an electric resistance heating system;          (c) <b>the vapor compression cycle or a sorption cycle of a heat pump</b></p>
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	<p>(b) the Joule effect, taking place in the heating elements of an electric resistance heating system;          (C) capturing heat from ambient air, ventilation exhaust air, or a water or ground heat source using a heat pump;</p>	
<p><i>Comment</i></p> <p>The reintroduction of the definition of heat pumps (see amendment on article 2 old definition 18) leads to the adaptation of the definition of heat pumps under the macro definition of heat generator. The proposal is to add a definition that focuses on the process used in a heat pump to be in line with the different processes listed but does not limit the sources and sinks to allow for possible future technological developments.</p>		
<p><b>Art 7 – replacing Art 6</b></p>		
<p>2. Member States shall ensure that, before construction of new buildings starts, the technical, environmental and economic feasibility of high-efficiency alternative systems, if available, is taken into account.</p>	<p>2. Member States shall ensure that the life-cycle Global Warming Potential (GWP) is calculated in accordance with ANNEX III and disclosed through the Energy Performance certificate of the building:</p> <p>(a) as of 1 January 2027, for all new buildings with a useful floor area larger than 2000 square meters; and          (b) as of 1 January 2030, for all new buildings.</p>	<p>2. Member States shall ensure that the life-cycle <b>greenhouse gas emissions expressed in CO<sub>2</sub> equivalent</b> <del>Global Warming Potential (GWP)</del> is calculated in accordance with ANNEX III and disclosed through the Energy Performance certificate of the building:</p> <p>(a) as of 1 January 2027, for all new buildings with a useful floor area larger than 2000 square meters; and          (b) as of 1 January 2030, for all new buildings</p>
<p><i>Comment</i></p>		



The heat pump industry is fully aware of the importance of a whole-life carbon assessment, however the use of “GWP” as currently proposed by the EC could be misleading and confusing. “Global warming potential (GWP)” is known as a metric expressing the potential global warming of different gases in the F-gas Regulation. As currently written in the EC EPBD recast proposal Annex III “*the GWP is communicated as a numeric indicator for each life-cycle stage expressed as kgCO2e/m2 (of useful floor area)*”, it is very clear that the intention of the Commission is to calculate the life-cycle greenhouse gas emissions expressed in CO<sub>2</sub> equivalent or the whole life carbon. This is also in line with the statement made by the EC itself in its explanatory memorandum to the EPBD Recast Proposal: “*The proposal will support the replacement of inefficient fossil-fuel boilers by systems with no direct GHG emissions, such as heat pumps and other renewable based technologies.*” Therefore, replacing the “global warming potential (GWP)” by “greenhouse gas emissions expressed in CO<sub>2</sub> equivalent” will add clarity and avoid confusion.

**Art. 9a Solar energy in buildings (from REPowerEU proposal)**

	<p>Member States shall ensure that all new buildings are designed to optimise their solar energy generation potential on the basis of the solar irradiance of the site, enabling the later cost-effective installation of solar technologies.</p> <p>Member States shall ensure the deployment of suitable solar energy installations:</p> <ol style="list-style-type: none"> <li>1. (a) by 31 December 2026, on all new public and commercial buildings with useful floor area larger than 250 square meters;</li> <li>2. (b) by 31 December 2027, on all existing public and commercial buildings with useful floor area larger than 250 square meters; and</li> </ol>	<p>Member States shall ensure that all new buildings are designed to optimise their solar energy generation potential on the basis of the solar irradiance of the site, enabling the later cost-effective installation of solar technologies.</p> <p>Member States shall ensure the deployment of suitable solar energy installations:</p> <ol style="list-style-type: none"> <li>1. (a) by 31 December 2026, on all new public and commercial buildings with useful floor area larger than 250 square meters;</li> <li>2. (b) by 31 December 2027, on all existing public and commercial buildings with useful floor area larger than 250 square meters; and</li> </ol>
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	<p>3. (c) by 31 December 2029, on all new residential buildings.</p> <p>Member States shall define, and make publicly available, criteria at national level for the practical implementation of these obligations, and for possible exemptions for specific types of buildings, in accordance with the assessed technical and economic potential of the solar energy installations and the characteristics of the buildings covered by this obligation.</p>	<p>3. (c) by 31 December 2029, on all new residential buildings.</p> <p><b>Member States shall establish a pathway with numerical targets for their national contribution to the deployment of solar energy and heat pumps in buildings in their national building renovation plans in accordance with Article 3, with a view to reaching the objective of at least 70 million solar energy installations by 2030 and at least 10 million heat pumps installations in buildings by 2027.</b></p> <p><b>5. Member States shall ensure that their regulatory frameworks provide the necessary administrative, technical and financial capacities and incentives for the deployment of solar energy in buildings, including in combination with technical building systems such as domestic batteries or heat pumps for self consumption.</b></p>
<p><i>Comment</i></p> <p>It is important that the heat pump targets put forward in the REPowerEU plan are reflected also in legislation so that Member States act upon this and include a pathway in their national building renovation plans.</p>		
<p><b>Art. 15(1–) - Financial incentives and market barriers</b></p>		
	<p>1. Member States shall provide appropriate financing, support measures and other instruments able to address market barriers and stimulate the necessary investments in</p>	<p>1. Member States shall provide appropriate financing, support measures and other instruments able to address market barriers and stimulate the necessary investments in</p>





	<p>energy renovations in line with their national building renovation plan and with a view to the transformation of their building stock into zero-emission buildings by 2050.</p> <p>10. From 1 January 2027 at the latest, Member States shall not provide any financial incentives for the installation of boilers powered by fossil fuels, with the exception of those selected for investment, before 2027, in accordance with Article 7(1)(h)(i) third hyphen of Regulation (EU) 2021/1058 of the European Parliament and the Council on the European Regional Development Fund and on the Cohesion Fund and with Article 73 of Regulation (EU) 2021/2115 of the European Parliament and the Council<sup>61</sup> on the CAP Strategic Plans.</p>	<p>energy renovations <b>and heating system replacements</b> in line with their national building renovation plan and with a view to the transformation of their building stock into zero-emission buildings by 2050 <b>and with a view to double the current deployment rate of heat pumps resulting in a cumulative 10 million units over the next 5 years.</b></p> <p>10. <b>With a view to double the installation rate of heat pump resulting in cumulative 10 million heat pumps over the next 5 years, from 1 January <del>2027</del> 2025</b> at the latest, Member States shall not provide any financial incentives for the installation of boilers powered by fossil fuels, with the exception of those selected for investment, before 2027, in accordance with Article 7(1)(h)(i) third hyphen of Regulation (EU) 2021/1058 of the European Parliament and the Council on the European Regional Development Fund and on the Cohesion Fund and with Article 73 of Regulation (EU) 2021/2115 of the European Parliament and the Council<sup>61</sup> on the CAP Strategic Plans. <b>Member States shall redirect these financial incentives for the installation of heat pumps.</b></p> <p><b>NEW 11. With a view to double the installation rate of heat pumps resulting in cumulative 10 million heat pumps over the</b></p>
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		<p><b>next 5 years, Member States shall incentivize heating system replacement and support schemes for heat pumps that target in specific low income households.</b></p>
<p style="text-align: center;"><i>Comment</i></p> <p>The proposal focuses on advancing the date as from which Member States shall not provide any financial incentives for the installation of boilers powered by fossil fuels and to redirect these to support schemes for heat pumps. This is in line with the proposals made by the REPowerEU Communication<sup>2</sup> and to accelerate the decarbonisation processes of the building stock. In specific, the « EU Save Energy Communication asks the co-legislators to » Phase out Member States’ subsidies for fossil fuel-based boilers in buildings as of 2025 as a minimum (noting that in most situations such incentives are contrary to Article 7(2) of the Energy Labelling Regulation) and encourage redirection to incentivise support schemes for heat pumps instead. » (EU Save Energy Communication p. 7)</p> <p>Moreover, it is specifically stated in Annex I that the goal is to completely eliminate fossil fuels for heating and cooling by 2040 at the latest. This statement should be included in the main text of the Directive to give it more emphasis.</p>		
<p><b>ANNEX I (2) - Common General Framework For The Calculation Of Energy Performance Of Buildings</b></p>		
<p>2. The energy needs for space heating, space cooling, domestic hot water, ventilation, lighting and other technical building systems shall be calculated in order to optimise health, indoor air quality and comfort levels defined by Member States at national or regional level.</p> <p>The calculation of primary energy shall be based on primary energy factors or weighting factors per energy carrier, which</p>	<p>2. The calculation of primary energy shall be based on primary energy factors (distinguishing non-renewable, renewable and total) per energy carrier, which have to be recognised by the national authorities and may be based on national, regional or local information.</p>	<p>2. The calculation of primary energy shall be based on primary energy factors (distinguishing non-renewable, renewable and total) per energy carrier, which have to be recognised by the national authorities and may be based on national, regional or local information.</p> <p>Primary energy factors can be set on an annual seasonal, monthly, daily or hourly basis or on more specific information made available for individual district systems.</p>

<sup>2</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A230%3AFIN&qid=1653033742483>





<p>may be based on national, regional or local annual, and possibly also seasonal or monthly, weighted averages or on more specific information made available for individual district system.</p> <p>Primary energy factors or weighting factors shall be defined by Member States. In the application of those factors to the calculation of energy performance, Member States shall ensure that the optimal energy performance of the building envelope is pursued.</p> <p>In the calculation of the primary energy factors for the purpose of calculating the energy performance of buildings, Member States may take into account renewable energy sources supplied through the energy carrier and renewable energy sources that are generated and used on-site, provided that it applies on a non-discriminatory basis.</p>	<p>Primary energy factors can be set on an annual seasonal, monthly, daily or hourly basis or on more specific information made available for individual district systems.</p> <p>Primary energy factors or weighting factors shall be defined by Member States. The choices made and data sources shall be reported according to EN 17423 or any superseding document. Member States may opt for an average EU primary energy factor for electricity established pursuant to Directive (EU) .../... [recast EED] instead of a primary energy factor reflecting the electricity mix in the country</p>	<p>Primary energy factors <del>or weighting factors</del> shall be defined by Member States. The choices made and data sources shall be reported according to EN 17423 or any superseding document. Member States may opt for an average EU primary energy factor for electricity established pursuant to Directive (EU) .../... [recast EED] instead of a primary energy factor reflecting the electricity mix in the country <b>in case the average EU primary energy factor for electricity is lower than the primary energy factor reflecting the electricity mix in the country.</b></p>
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*Comment*

In comparison to the current EPBD, the possibility to use weighting factors instead of primary energy factors has been deleted from the first and second paragraph of annex I art. 2 but not in the third paragraph. In discussions with the EC, it became clear that the intention was to remove weighting factors from the whole article. For reasons of consistency in the whole article, the option to use weighting factors should be deleted from the third paragraph as well. This will avoid that national authorities would use this as a justification for giving their own interpretation to the scientific PEF.

In order to ensure that the intention of the Commission to stimulate electrification and the roll-out of heat pumps in accordance to the REPowerEU Communication is upheld, it is important that Member States are only allowed to use the European PEF if it is lower than the actual PEF in the Member State. Otherwise this option might have a negative effect on electrification of heating.



**Annex III: Requirements for new and renovated zero-emission buildings and calculation of life-cycle global warming potential (GWP) referred to in art 2 (2) and art. 7**

EPBD Recast Proposal COM(2021)802

EHPA Proposal

EU climatic zone <sup>1</sup>	Residential building	Office building	Other non-residential building*
Mediterranean	<60 kWh/(m <sup>2</sup> .y)	<70 kWh/(m <sup>2</sup> .y)	< NZEB total primary energy use defined at national level
Oceanic	<60 kWh/(m <sup>2</sup> .y)	<85 kWh/(m <sup>2</sup> .y)	< NZEB total primary energy use defined at national level
Continental	<65 kWh/(m <sup>2</sup> .y)	<85 kWh/(m <sup>2</sup> .y)	< NZEB total primary energy use defined at national level
Nordic	<75 kWh/(m <sup>2</sup> .y)	<90 kWh/(m <sup>2</sup> .y)	< NZEB total primary energy use defined at national level

EU climatic zone <sup>1</sup>	Residential building	Office building	Other non-residential building*
Mediterranean	<60 kWh/(m <sup>2</sup> .y)	<70 kWh/(m <sup>2</sup> .y)	< NZEB total primary energy use defined at national level
Oceanic	<60 kWh/(m <sup>2</sup> .y)	<85 kWh/(m <sup>2</sup> .y)	< NZEB total primary energy use defined at national level
Continental	<65 kWh/(m <sup>2</sup> .y)	<85 kWh/(m <sup>2</sup> .y)	< NZEB total primary energy use defined at national level
Nordic	<75 kWh/(m <sup>2</sup> .y)	<90 kWh/(m <sup>2</sup> .y)	< NZEB total primary energy use defined at national level

\*Note: the threshold should be smaller than the threshold for total primary energy use established at the Member State level for nearly zero-energy non-residential buildings type other than offices.

The total annual primary energy use of a new or renovated zero-emission building shall be fully covered, on a net annual basis, by:

- energy from renewable sources generated on-site and fulfilling the criteria of Article 7 of Directive (EU) 2018/2001 [amended RED],

\*Note: the threshold should be smaller than the threshold for total primary energy use established at the Member State level for nearly zero-energy non-residential buildings type other than offices.

The total annual primary energy use of a new or renovated zero-emission building shall be fully covered, on a net annual basis, by:

- energy from renewable sources generated on-site, **renewable sources from the grid**, and fulfilling the criteria of Article 7 of Directive (EU) 2018/2001 [amended RED],



- renewable energy provided from a renewable energy community within the meaning of Article 22 of Directive (EU) 2018/2001 [amended RED], or
- renewable energy and waste heat from an efficient district heating and cooling system in accordance with Article (24(1) of Directive (EU) .../... [recast EED]

A zero-emission building shall not cause any on-site carbon emissions from fossil fuels.

Only where, due to the nature of the building or lack of access to renewable energy communities or eligible district heating and cooling systems, it is technically not feasible to fulfil the requirements under the first paragraph, the total annual primary energy use may also be covered by energy from the grid complying with criteria established at national level.

II. Calculation of life-cycle global warming potential (GWP) of new buildings pursuant to Article 7(2).

For the calculation of the life-cycle global warming potential (GWP) of new buildings pursuant to Article 7(2), the GWP is communicated as a numeric indicator for each life-cycle stage expressed as kgCO<sub>2</sub>e/m<sup>2</sup> (of useful floor area) averaged for one year of a reference study period of 50 years. The data selection, scenario definition and calculations shall be carried out in accordance with EN 15978 (EN 15978:2011. Sustainability of construction works. Assessment of environmental performance of buildings. Calculation method). The scope of building elements and technical equipment is as defined in the Level(s) common EU framework for indicator 1.2. Where a national

- renewable energy provided from a renewable energy community within the meaning of Article 22 of Directive (EU) 2018/2001 [amended RED], or
- renewable energy and waste heat from an efficient district heating and cooling system in accordance with Article (24(1) of Directive (EU) .../... [recast EED]

A zero-emission building shall not cause any on-site carbon emissions from fossil fuels.

Only where, due to the nature of the building or lack of access to renewable energy communities or eligible district heating and cooling systems, it is technically not feasible to fulfil the requirements under the first paragraph, the total annual primary energy use may also be covered by energy from the grid complying with criteria established at national level.

II. Calculation of life-cycle ~~global warming potential (GWP)~~ **greenhouse gas emissions expressed in CO<sub>2</sub> equivalent** of new buildings pursuant to Article 7(2).

For the calculation of the life-cycle global warming potential (GWP) greenhouse gas emissions expressed in CO<sub>2</sub> equivalent of new buildings pursuant to Article 7(2), the GWP is communicated as a numeric indicator for each life-cycle stage expressed as kgCO<sub>2</sub>e/m<sup>2</sup> (of useful floor area) averaged for one year of a reference study period of 50 years. The data selection, scenario definition and calculations shall be carried out in accordance with EN 15978 (EN 15978:2011. Sustainability of construction works. Assessment of environmental performance of buildings. Calculation method).



<p>calculation tool exists or is required for making disclosures or for obtaining building permits, that tool may be used to provide the required disclosure. Other calculation tools may be used if they fulfil the minimum criteria laid down by the Level(s) common EU framework. Data regarding specific construction products calculated in accordance with [revised Construction Products Regulation] shall be used when available.</p>	<p>Where a national calculation tool exists or is required for making disclosures or for obtaining building permits, that tool may be used to provide the required disclosure. Other calculation tools may be used if they fulfil the minimum criteria laid down by the Level(s) common EU framework. Data regarding specific construction products calculated in accordance with [revised Construction Products Regulation] shall be used when available.</p>
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*Comment*

Heat pumps are one of the key elements in achieving zero emission targets in the building sector. The definition provides a clear and ambitious perspective in achieving this goal. However, a building can still be “zero-emission” and have a very high energy performance if it uses a heat pump that extracts on-site renewable energy from the environment and uses renewable energy from the grid as driving energy. Therefore, *renewable sources from the grid* should be included among the listed energy sources. The emission level of the energy consumed should be the defining criteria rather than proximity of the grid that delivers the energy. When looking at the geophysical diversity of the EU territories, taking into account that on-site generation is not possible everywhere and renewable energy communities are not yet widespread, it is appropriate that renewable sources from the grid are also included in this list. This will also be essential to unlock the full heat pump potential in order to achieve the energy and climate targets and the targets laid down in the REPowerEU Communication.

In addition, and to put all energy sources that can be used in a zero-emission building on a level playing field, it is essential that there are no carbon emissions from fossil fuels not only on-site, but also in the generation and/or distribution processes of renewable energy communities and district heating and cooling systems.

The phrase stating that “the total annual primary energy use of a new or renovated zero-emission building shall be fully covered, on a net annual basis by” should be further clarified. After further discussions with the EC it is not clear whether this allows for compensation restricted to one type of energy (power from PV generated in summer can compensate for electricity in the winter) or between different types of energy (heating from a district heating and cooling network can compensate for total electricity use). This requires further clarification.

The heat pump industry is fully aware of the importance of a whole-life carbon assessment, however the use of “GWP” as currently proposed by the EC could be misleading and confusing. “Global warming potential (GWP)” is known as a metric expressing the potential global warming of different gases in the F-gas Regulation. As currently written in the EC EPBD recast proposal Annex III “*the GWP is communicated as a numeric indicator for each life-cycle stage expressed as kgCO<sub>2</sub>e/m<sup>2</sup> (of useful floor area)*”, it is very clear that the intention of the Commission is to



calculate the life-cycle greenhouse gas emissions expressed in CO<sub>2</sub> equivalent or the whole life carbon. This is also in line with the statement made by the EC itself in its explanatory memorandum to the EPBD Recast Proposal: *“The proposal will support the replacement of inefficient fossil-fuel boilers by systems with no direct GHG emissions, such as heat pumps and other renewable based technologies.”* Therefore, replacing the “global warming potential (GWP)” by “greenhouse gas emissions expressed in CO<sub>2</sub> equivalent” will add clarity and avoid confusion.

Annex III refers to the Level(s) common EU framework for indicator 1.2. approach and standard EN 15978:2011. These documents are still very high level, meaning that a detailed methodology and guidance is missing at this moment and should be developed. It is important that such a methodology is harmonized across the EU.

The current proposal seems to envisage a cradle to grave approach for all building elements and technical equipment regardless of the carbon intensity of these elements and equipment. A detailed and harmonised methodology and guidance will have to be developed in general and specifically also for the heat pump sector. This will take time and increase costs for the sector which should be balanced against the carbon intensity of an early and encompassing cradle to grave approach in this sector. The impact of legislation on the whole value chain should be kept in mind and disruption should be avoided even more because of the need to accelerate heat pump deployment as put forward in the recent REPowerEU Communication. It includes a fast forward target of 10 million hydronic heat pumps to be installed by 2026 aiming at doubling the installation rate, and a total of 30 million newly installed hydronic units by 2030/31. Extrapolating this to all heat pump technologies covered in EHPA statistics, would represent more than 18 million heat pumps by 2026 and 53 million heat pumps by 2031. In order to prepare the market properly, to not disrupt this acceleration and to allow for the development of a sound and harmonised methodology across the EU, the EC should apply an incremental approach, focusing first on those construction materials and technical equipment with the highest carbon intensity.

It might also be appropriate to consider not only carbon emissions but also emissions related to other types of factors (i.e., burning wood).

**Article 2 – Definition 24**

	<p>24. ‘Life-cycle Global Warming Potential (GWP)’ means an indicator which quantifies the global warming potential contributions of a building along its full life-cycle;</p>	<p><del>24. ‘Life-cycle Global Warming Potential (GWP)’ means an indicator which quantifies the global warming potential contributions of a building along its full life-cycle;</del></p>
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*Comment*





Given the proposed amendments to select the calculation of the life-cycle greenhouse gas emissions expressed in CO<sub>2</sub> equivalent as metric instead of GWP, we propose to delete article 2, definition 24 (GWP Definition).

The heat pump industry is fully aware of the importance of a whole-life carbon assessment, however the use of “GWP” as currently proposed by the EC could be misleading and confusing. “Global warming potential (GWP)” is known as a metric expressing the potential global warming of different gases in the F-gas Regulation. As currently written in the EC EPBD recast proposal Annex III *“the GWP is communicated as a numeric indicator for each life-cycle stage expressed as kgCO<sub>2</sub>e/m<sup>2</sup> (of useful floor area)”*, it is very clear that the intention of the Commission is to calculate the life-cycle greenhouse gas emissions expressed in CO<sub>2</sub> equivalent or the whole life carbon. This is also in line with the statement made by the EC itself in its explanatory memorandum to the EPBD Recast Proposal: *“The proposal will support the replacement of inefficient fossil-fuel boilers by systems with no direct GHG emissions, such as heat pumps and other renewable based technologies.”* Therefore, replacing the “global warming potential (GWP)” by “greenhouse gas emissions expressed in CO<sub>2</sub> equivalent” will add clarity and avoid confusion

