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Comments Ares(2025)2899026

Draft delegated regulation as regards the establishment of a comparative methodology framework for calculating cost-optimal levels of minimum energy performance requirements for buildings and building elements

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Abstract:	This comment addresses critical concerns regarding the European Commission's draft delegated regulation Ares(2025)2899026, focusing on two main issues: the methodology for calculating cost-optimal energy performance levels and the unjustified exclusion of bioenergy from the definition of on-site renewable energy. First, while the inclusion of environmental and health externalities in the cost-optimality assessment is a positive step, the current methodology risks oversimplification. A truly comprehensive approach must account for all environmental, social, and economic impacts—both within and outside the EU. Failure to do so could lead to policy distortions and promote technologies not because they are more cost-effective, but because their external impacts are less quantifiable. Second, the draft regulation unjustifiably excludes on-site bioenergy, such as wood, from the renewable energy balance, contradicting Directive (EU) 2024/1275. Both ambient heat and biomass are solar-derived energy sources that require processing and carry embedded energy. Discriminating against bioenergy on the basis of origin or processing, without consistent scientific justification, undermines regulatory coherence and violates the principle of technology neutrality.

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1. Introduction

The Annexes to the Ares(2025)2899026 defines the methodology for calculating cost-optimal levels of minimum energy performance requirements for buildings and building elements.
EPBD IV (EU/2024/1275) requires MSs to consider cost optimal levels in the definition of minimum energy performance requirements.
"*Cost optimal levels*", as defined in the EPBD IV (Article 2(32)), *means the energy performance level which leads to the lowest cost during the estimated economic life cycle*.
The definition Article 2(32) of the directive also has introduced "*environmental and health externalities of energy use*".
The inclusion of environmental and health costs is a welcome development. Together with life cycle assessment and waste management considerations, this move represents a step toward a more holistic and accurate evaluation of the total costs associated with different technologies.

However, developing a robust methodology to calculate these broader cost components is inherently complex. It requires the European Commission to comprehensively assess environmental, social, and economic impacts both within and beyond the EU. A partial or oversimplified approach risks distorting the market by favoring solutions not because they are genuinely more cost-effective, but because their externalities—particularly those occurring outside the EU—are less quantifiable or documented.

If the Commission is to compare buildings and building elements based on environmental, health, and life cycle costs, it must ensure that these assessments are complete and balanced. Failure to do so could lead to unintended policy biases, the promotion of suboptimal technologies, and the externalization of significant environmental and health impacts to third countries. Given the scale and influence of the EU building sector, such miscalculations could have far-reaching consequences.

2. Unjustified discrimination of Wood as energy carrier

Annex III, Table 3 of document Ares(2025)2899026 defines renewable energy generation at the building site as including "*Thermal energy from renewable energy sources (e.g. thermal solar collectors, ambient heat)*", but explicitly excludes "*energy from on-site generators based on bioenergy*," such as solid biomass, biogases, or biofuels. The justification provided is that these energy carriers are "*supplied from outside building premises*."

This provision directly contradicts Recital 22 of Directive (EU) 2024/1275 (EPBD IV), which clearly states: "*Different options are available to cover the energy needs of a zero-emission building*[1]*: energy generated on site or nearby from renewable sources such as solar thermal, geothermal, solar photovoltaics, heat pumps, hydroelectric power and biomass, renewable energy provided by renewable energy communities, efficient district heating and cooling, and energy from other carbon-free sources. Energy derived from combustion of renewable fuels is considered to be energy from renewable sources generated on-site* ***where the combustion of the renewable fuel takes place on-site***".

The provision in Annex III, Table 3 of document Ares(2025)2899026, if generally applied, would effectively render the use of bioenergy in "zero-emission buildings" unfeasible. This contradicts the intent of the Directive and significantly limits the scenarios in which bioenergy can be utilized.

[1] EPBD IV (EU/2024/1275) introduces (Article 2 (2)) the definition of 'zero-emission building': *means a building with a very high energy performance, as determined in accordance with Annex I, requiring zero or a very low amount of energy, producing zero on-site carbon emissions from fossil fuels and producing zero or a very low amount of operational greenhouse gas emissions, in accordance with Article 11*.

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Furthermore, by excluding bioenergy—such as wood—from the definition of on-site renewable energy, the Commission not only diverges from the Directive's wording and intent, but also creates an unjustified bias against wood as an energy carrier, favoring alternatives like ambient heat without a sound scientific basis.

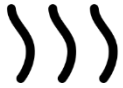
Both ambient heat and bioenergy derive from solar energy. In the case of ambient heat, solar energy is stored in air or ground masses via natural radiation and convection. In the case of biomass, solar energy is captured and stored through photosynthesis. Neither process requires anthropogenic energy input at the collection stage.

Both energy carriers require processing before they can be utilized for space and/or water heating:

1. **Ambient heat** must be upgraded via a heat pump, which consumes electricity to compress and transfer the heat.
2. **Biomass** must be harvested, processed (e.g., chipped or pelletized), and transported, which may involve fossil fuel use.

While both systems involve a certain amount of "grey energy" (i.e., energy embedded in processing and transport), this embedded energy can and should be accounted for consistently. What cannot be justified is the blanket exclusion of biomass-derived thermal energy from the renewable energy balance of a building, especially when combustion occurs on-site.

Table 1: Schematic comparison between process of thermal energy production from ambient heat or from bioenergy

Energy source	Energy carrier	Grey energy	Renewable energy
 	 	 	
Both for heat pump and for bioenergy heat is provided from the sun that transfer heat through convection and radiation to air (heat pump) and energy for carbon fixation to plants through photosynthesis (bioenergy)	Energy from the sun is stored in the energy carrier: 1. Air for heat pump, 2. Biomass for bioenergy.	In order to make the renewable energy available heat pumps requires electrical energy, partially from fossil fuels for compression and biomass require fuels, partially from fossil fuels, for transport and processing.	Once correctly accounted the grey energy or embedded energy, both systems provide some renewable heat that must be accounted coherently.

Additional sustainability considerations—such as emissions, forest management (governed by existing EU sustainability criteria), lifecycle environmental impacts, material extraction, and waste—are indeed relevant for holistic assessments. However, these should be addressed separately through environmental impact or sustainability frameworks, **not through a redefinition of renewable energy in energy performance calculations**.

Failing to treat on-site biomass on equal footing with other renewable sources undermines both the scientific consistency of the methodology and the legal coherence of the delegated regulation with the primary legislation.