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## **CONTRIBUTION**

From:	General Secretariat of the Council
To:	Working Party on Energy
Subject:	EE comments on the revision of the Energy performance of buildings Directive / EWP 01/09

Delegations will find in the annex the EE comments on the revision of the Energy performance of buildings Directive.

# **Estonian comments on the proposal for the recast of the Energy Performance of Buildings Directive (EPBD) REV2, all articles except 9, 10, 12, 16**

## **Article 2 – Definitions**

2. ‘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, 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 Article 9a b*<sup>1</sup>.

### **Proposed amendment (highlighted):**

‘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 non-renewable primary energy, producing zero on-site carbon emissions from fossil fuels and producing zero or a very low amount of operational greenhouse gas emissions, 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 Article 9a b*.

### **Justification:**

It is not possible to use any building service system without using (converting) energy, even if the used energy carriers are produced by exploitation of renewable energy sources. Thus, “*requiring zero energy*” is something physically not possible, while “*requiring zero non-renewable primary energy*” is physically possible and achievable. Because of the limitation to zero carbon emission is regarding **only on-site production**, this opens the possibility to have “*a very low amount of non-renewable primary energy*” use by distant energy carriers (i.e. grid electricity or district heating/cooling including non-renewable energy sources). Thus, for this “*very low amount*” a maximum threshold can be set as done in *Article 9a b*.

## **53. – 54. Definitions on ‘self-used’ & ‘other on-site uses’**

53. ‘*self-used*’ means part of on-site or nearby produced renewable energy used by on-site technical systems for EPB services;

54 ‘*other on-site uses*’ means energy used on-site for uses other than EPB services, and may include appliances, miscellaneous and ancillary loads or electro-mobility charging points;

### **Proposed amendment (highlighted):**

53. ‘*self-used*’ means part of on-site or nearby produced renewable energy used by on-site technical systems for EPB services **and by other appliances and lighting that represent the internal heat gains associated with the typical use of a building;**

54 ~~‘other on-site uses’ means energy used on-site for uses other than EPB services, and may include appliances, miscellaneous and ancillary loads or electro-mobility charging points;~~

### **Justification:**

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<sup>1</sup> ~~Article 9a b~~ replaces Article 9 of the current EPBD, as deleted in COM proposal.

The definition of 'self-used' limits the use of renewable energy and the sizing of cost optimal renewable energy generation systems, because with the current definition in Art. 2(53) only very small PV systems will be cost-optimal, especially in residential buildings with district heating or boilers where only the electricity of ventilation fans and heating circulation pumps can be a self-use. For example, self-use value of 55% used in [the REHVA EPBD primary energy calculator](#) will drop to about 20%. The self-use to EPB services would also be practically impossible to monitor, because a common way to reduce the smart meter exported electricity from PV generation would provide the total self-use.

This self-use definition contradicts with real design of PV systems, because in the design all existing electricity uses are accounted. Correct calculation, design and monitoring of the self-use is important because this is the most valuable part of on-site generated renewable energy. **We recommend to account for appliances and lighting electricity** when calculating self-use to make the calculation correspond real life and allow also for much larger cost optimal PV systems. In the cost optimal calculation, we refer to the situation where exported electricity is not accounted, so the only benefit of on-site renewable electricity is the self-use, therefore the self-use definition may have a remarkable effect on cost optimal energy performance levels.

4. 'minimum energy performance standards' means rules that require existing buildings to meet an energy performance requirement as part of a wide renovation plan for a building stock or at a trigger point on the market (sale, ~~or~~ rent, donation, change of purpose within the cadastre to residential building), in a period of time or by a specific date, thereby triggering renovation of existing buildings;

**Question:** Are sale, rent, donation, change of purpose within the cadastre to residential building going to be the only trigger points? When it comes to sale, this action is traceable, but it is much harder to track renting/renting.

#### Article 5 – Setting of minimum energy performance requirements

**Comment:** We would like to see 'historical and cultural heritage buildings' to be added next to churches under Art 5. Buildings with similar profile should be treated similarly. This would make more sense taking into account that usually churches are considered to be also historical and cultural heritage buildings. Thus, it is not justified to include only churches and leave out historical and cultural heritage buildings.

We believe that technical feasibility shall be also considered when it comes to renovating buildings that fall under this building category.

#### Article 9a - Solar energy in buildings

**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.**

**Member States shall ensure the deployment of suitable solar energy installations:**

**(a) by 31 December 2026, on all new public and commercial buildings with useful floor area larger than 250 square meters;**

**(b) by 31 December 2027, on all existing public and commercial buildings with useful floor area larger than 250 square meters; and**

**(c) by 31 December 2029, on all new residential buildings.**

**Comment:** We acknowledge the implementation of REPowerEU plan so that possible exemptions which will play an important role in the MS energy regulation preparation are adequately described.

We need more time to analyse this article, thus we can not comment this in detail. However, this article needs more flexibility, exemptions as well as technical and economical feasibility must be mentioned and taken into account in the article.

Currently, the problematic part is what to do with those buildings such as schools and kindergartens which have large roof area, but during the summer period, when the solar energy production is the highest, these buildings have minimal energy consumption (there is no activity in those buildings during summer period). On the other hand, during the winter period when the energy demand/consumption is the highest, in the Nordic region the solar energy production is very low. Thus, geographic conditions need to be accounted (*the Nordic regions can not be treated the same way as for example regions or countries where the solar energy is available annually*).

Wording could be more specific, 'ensure the deployment' is not understandable at this moment. 'Deployment' should be replaced with another term which would be clearly understood.

#### Article 9a b (1): Zero emission buildings

##### Proposed amendment (highlighted):

*1. Member States shall take necessary measures to ensure that the non-renewable primary energy use of a new or renovated zero-emission building **comply** complies with a maximum threshold established at the Member State level **in their building renovation plans**. This maximum threshold shall be set with a view ~~of to~~ achieving at least cost optimal levels.*

*Member States shall take necessary measures to ensure that the operational greenhouse gas emissions of a new or renovated zero-emission building comply with a maximum threshold established at the Member State level in their building renovation plans.*

*Member States may decide to adjust both thresholds as referred to in this subparagraph for renovated buildings.*

*1a Member States shall ensure that the ~~total~~ annual non-renewable primary energy use of a new or renovated zero-emission building is covered [in priority], where technically and economically feasible, by:*

- (a) energy from renewable sources generated onsite fulfilling the criteria of Article 7 of Directive (EU) 2018/2001 [amended RED];*
- (b) energy from renewable sources provided from a renewable energy community within the meaning of Article 22 of Directive (EU) 2018/2001 [amended RED]; or*
- (c) energy from renewable sources and waste heat from an efficient district heating and cooling system in accordance with Article 24(1) of Directive (EU) .../... [recast EED].*

##### Justification:

This article represents the most fundamental policy choices to define and set requirements for ZEB. We propose to add some small details to make these fully transparent that is important to achieve similar understanding and implementation by all MS. REHVA has prepared calculation examples showing that without these small additions MS may implement the primary energy threshold with numeric values varying by factor 3.

Clause 1 works together with Article 2 (2) ZEB definition and says that a very low amount of non-renewable primary energy can be used in ZEB, and a threshold value should be set for this energy use. Clause 1a says that this very low amount of non-renewable primary energy should be fully covered with renewable energy.

We want to clarify that a very low amount of non-renewable primary energy refers to the use of grid electricity (and district heating/cooling) that could not be avoided by efficiency measures and on-site/community renewable energy production as there is not enough solar PV generation in the winter and a building must use the grid electricity. Therefore, in this threshold, all non-renewable primary

energy delivered to the site should be accounted that means that only the 'self-used' and used in 'other on-site uses' PV electricity should be included in the non-renewable primary energy calculation (exported PV electricity compensation should not be calculated because this occurs mainly in the summer). In the requirement 1a, differently, the full amount of renewable energy production is accounted to cover the non-renewable primary energy. It is highly important that these two policy choices (1. threshold having no compensation with exported energy, and 1a covering with renewable energy) are transparent.

#### Article 11: Technical building systems

3. Member States shall require non residential zero-emission buildings to be equipped with measuring and control devices for the ~~monitoring and~~ regulation of indoor air quality. In existing buildings, the installation of such devices shall be required, where technically and economically feasible, when a building undergoes a major renovation.

#### Proposed amendment (highlighted):

3. Member States shall require non residential zero-emission buildings to be equipped with measuring and control devices for the **monitoring and** regulation of indoor air quality. In existing buildings, the installation of such devices shall be required, where technically and economically feasible, when a building undergoes a major renovation.

#### Justification:

This requirement is limited to non-residential ZEB and the IAQ monitoring requirement is deleted. Limiting non-residential buildings is reasonable and can be justified due to the maintenance challenge of complex systems in residential buildings.

However, in public spaces and working environments, it could be seen as basic human right to have information about IAQ, therefore it is unacceptable to delete the monitoring requirement. During the COVID crises, we have all learned how important adequate ventilation and IAQ are, therefore we must take steps to visualize IAQ for occupants.

#### Article 11 – Technical building systems

3. Member States shall require non residential zero-emission buildings to be equipped with measuring and control devices for the ~~monitoring and~~ regulation of indoor air quality. In existing buildings, the installation of such devices shall be required, where technically and economically feasible, when a building undergoes a major renovation.

**Question:** Are industrial buildings excluded from p 3? Or will the requirement apply to industrial buildings, too?

**Comment:** We'd like to connect Art 11 p 3 and Art 20 p 3 – by including over 290 kW HVAC systems in p 3 under Article 11. This would help lower administrative costs and have positive impact on supervision of the technical systems. **Wording proposal:**

3. Member States shall require non residential zero-emission buildings **with an effective rated output for heating systems, or systems for combined heating and ventilation of over 290 kW** to be equipped with measuring and control devices for the ~~monitoring and~~ regulation of indoor air quality. In existing buildings, the installation of such devices shall be required, where technically and economically feasible, when a building undergoes a major renovation.

#### Article 13 – SRI

**Comment:** EE prefers that SRI remains voluntary scheme as we don't see the necessity at the national level. EE sees that smart readiness indicator should be voluntary, recommended as a part of the renovation passport. Currently it is not clear if SRI will remain voluntary – this shall be clearly stated in REV3.

## Article 15 – Financial incentives and market barriers

**Comment:** We don't like to use this p 13 at all, we'd like to remove this from the article. This is a matter of private law, the state can not be in charge of limiting rental prices.

## Article 18 – Display of EPCs

1. Member States shall take measures to ensure that where a total useful floor area over 500 m<sup>2</sup> of a building for which an energy performance certificate has been issued in accordance with Article 17(1) is occupied by public authorities and frequently visited by the public, the energy performance certificate is displayed in a prominent place clearly visible to the public. On 9 July 2015, this threshold of 500 m<sup>2</sup> shall be lowered to 250 m<sup>2</sup>.

**Question:** If the EPC is already publicly available in a digital database (The Building Registry) and in digital 3D twin, is it still necessary to display EPC in a prominent place physically (on paper)?

## Article 20 - Inspections

P 1 and 3

**Comment and a suggestion:** The enterprises which have the obligation to carry out energy audits according to EED Art 11 p 2, shall have the technical system checks done at the same time and with an interval of 4 years. This would lower the administrative burden and would be more efficient. Evenmore, the technical system checks could be carried out as a part of energy audits.

## Article 22 – Independent experts

2. Member States shall make available to the public information on training and accreditations ⇒ certifications ⇐. Member States shall ensure that either regularly updated lists of qualified and/or accredited ⇒ certified ⇐ experts or regularly updated lists of accredited ⇒ certified ⇐ companies which offer the services of such experts are made available to the public.

**Question:** Could you clarify – a 'list of qualified or certified experts' – will it be sufficient enough, if the Member States will provide reference to the source (currently to the Qualifications Authority)? Or shall the Member States provide data which includes experts' contact information such as full name, phone number and email?

## Annex I

### p 1 paragraph 4 states:

'The energy performance of a building shall be expressed by a numeric indicator of primary energy use -> per unit of reference floor area per year, <- in kWh/(m<sup>2</sup>.y) for the purpose of both energy performance certification and compliance with minimum energy performance requirements.'

### Proposed amendment (highlighted):

'The energy performance of a building shall be expressed by a numeric indicator of non-renewable primary energy use ⇒ per unit of reference floor area per year, ⇐ in kWh/(m<sup>2</sup>.y) for the purpose of both energy performance certification and compliance with minimum energy performance requirements.'

### Justification:

Changing 'primary energy use' with 'non-renewable primary energy use' is consistent with the goal of zero emission building (ZEB) and avoids unjustified differences among the Member States.

## p 2 paragraph 4 states:

‘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. <-’

### Proposed amendment – add the highlighted part:

Member States may opt for an average EU primary energy factor for electricity established pursuant to Directive (EU) .../... [recast EED] **and calculated for non-renewable primary energy** instead of a primary energy factor reflecting the electricity mix in the country. ⇐

### Justification:

It is important to understand that EED operates with total primary energy including all non-renewable and renewable sources. At the same time, RED operates with renewable energy and EPBD needs to operate with both non-renewable and renewable energy sources in the context of energy use in buildings. ‘Total primary energy’ is not suitable for buildings where specific effort is expected to install on-site renewable energy systems, and therefore, it is important to distinguish non-renewable and renewable energy sources, and to minimize the use of non-renewable sources.

EED updated (total) primary energy factor (PEF) for electricity generation is 2.1 that is calculated with Method 1 described in the review<sup>2</sup>. Instead of total primary energy PEF=2.1, non-renewable primary energy PEF=1.9 must be used, calculated with Method 2 that is designed to provide the most appropriate calculation reflecting the total consumption of non-renewable sources.

## Annex I: Calculation of energy performance intervals

Metered energy to be used for the purposes of calculating the energy performance of buildings shall require readings of at least ~~hourly~~ **monthly** intervals and must differentiate between energy carriers.

Comment: This change to monthly resolution is questionable as smart meters by default have an hourly resolution – technology development has already happened and is commonly in use.

2. The energy needs ⇨ and energy use ⇨ for space heating, space cooling, domestic hot water, ventilation, lighting and other technical building systems shall be calculated ⇨ using **monthly**, hourly or sub-hourly time calculation intervals in order to account for varying conditions that significantly affect the operation and performance of the system and the indoor conditions, and ⇨ ~~in order~~ to optimise health, indoor air quality and comfort levels defined by Member States at national or regional level.

**Comment:** Accepting monthly is a clear drawback to the level of ambition. It is not possible to calculate the self-use of renewable energy with monthly calculation methods that is highly needed in the case of zero-emission buildings. There is also good experience from MS (EE, FI and some others) who have been using energy calculation with commercial dynamic simulation tools since 2008. Considering the time needed for development steps, it could be a reasonable compromise to allow the monthly interval as an exception for single-family houses only.

## Annex 6 – Independent control systems for EPCs

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<sup>2</sup> Review of the default primary energy factor (PEF) reflecting the estimated average EU generation efficiency referred to in Annex IV of Directive 2012/27/EU

[https://energy.ec.europa.eu/review-default-primary-energy-factor-pef-reflecting-estimated-average-eu-generation-efficiency\\_en](https://energy.ec.europa.eu/review-default-primary-energy-factor-pef-reflecting-estimated-average-eu-generation-efficiency_en)



1. Definition of quality of energy performance certificate

Member States shall provide a clear definition of what is considered a valid energy performance certificate. The definition of a valid energy performance certificate shall ensure:

- (a) ☒ a ☒ validity check of the input data ☒ (including on-site checks) ☒ of the building used to issue the energy performance certificate and the results stated in the certificate;

**Comment:** It should be clarified that on-site checks are voluntary, not mandatory. Estonia does not support mandatory on-site visitations as this would be an excessive administrative burden which can be avoided through digital solutions that are already available and in use in Estonia. Member States shall have the opportunity to act according to their national possibilities. In our view, the value-creating experts should not be overburdened with excessive verification and checks in a limited workforce.

- (d) a minimum number of elements differing from default or standard values.

**Comment:** Estonia is not using parameters of building elements, thus regarding existing buildings this information should be given in the renovation passport, not in/on EPC. When it comes to new buildings, this data is given in the project or construction document where there shall be no differing in standard values. Estonia prefers holistic approach to make sure the building as a whole meets the requirements rather than go to the detailed level of an individual element.