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**Guidance note on Directive 2012/27/EU on energy efficiency, amending Directives 2009/125/EC and 2010/30/EC, and repealing Directives 2004/8/EC and 2006/32/EC**

**Article 5: Exemplary role of public bodies' buildings**

*Accompanying the document*

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## ARTICLE 5: EXEMPLARY ROLE OF PUBLIC BODIES' BUILDINGS

### A. INTRODUCTION

1. Article 5 of Directive 2012/27/EU of 25 October 2012 on energy efficiency<sup>1</sup> ('the EED' or 'the Directive') requires Member States to ensure that, as from 1 January 2014, 3% of the total floor area of central government-owned and –occupied heated or cooled buildings is renovated each year to meet the minimum energy performance requirements that each Member State has set in application of Article 4 of the Energy Performance of Buildings Directive (2010/31/EU, also the 'EPBD')<sup>2</sup>. The implementation of Article 5 of the EED therefore builds on the correct transposition of the EPBD. In addition to this main obligation set out in paragraphs 1-5, it foresees an "alternative approach" (paragraph 6).

This note aims to provide guidance to Member States on how to apply Article 5 of the EED. The note states the views of the Commission services, does not alter the legal effects of the Directive and is without prejudice to the binding interpretation of Article 5 as provided by the Court of Justice.

### B. SCOPE OF THE OBLIGATION

2. Article 2(9) of the EED defines '*Central government*' as '*all administrative departments whose competence extends over the whole territory of a Member State*'. In putting this definition into practice, Member States can draw on:
  - Annex IV of the Public Procurement Directive (2004/18/EC<sup>3</sup>), which includes a list of central government bodies in all Member States;
  - The data on public accounts which Eurostat collects on the basis of Council Regulation 479/2009/EC on the application of the Protocol on the excessive deficit procedure annexed to the Treaty establishing the European Community<sup>4</sup>.

The Guidance to Council Regulation 479/2009/EC, ESA95<sup>5</sup> (European system of national and regional accounts), defines central government in point S.1311 as: '*[...] All administrative departments of the State and other central agencies whose competence extends normally over the whole economic territory, except for the administration of social security funds. Included in sub-sector S.1311 are those non-profit institutions which are controlled and mainly*

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<sup>1</sup> Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC, .OJ L 315, 14.11.2012, p. 1

<sup>2</sup> Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings (recast), OJ L 153, 18.6.2010, p.13

<sup>3</sup> OJ L 134, 30.4.2004, p. 114–240

<sup>4</sup> OJ L 145, 10.6.2009, p.1

<sup>5</sup> <http://circa.europa.eu/irc/dsis/nfaccount/info/data/esa95/en/een00081.htm>.

*financed by central government and whose competence extends over the whole economic territory'..*

This definition differs from that used in the EED in that the latter does not refer explicitly to 'central agencies' and does not exclude 'administrative departments for the administration of social security funds'. Member States could therefore, in principle, use the lists of central government bodies specified for the purposes of Council Regulation 479/2009/EC as a possible reference for establishing which institutions fall within the scope of Article 5 of the EED, while taking into account the differences mentioned above

3. As indicated, the Commission guidance on Council Regulation 479/2009/EC clarifies that for the purposes of that Regulation 'central government' consists of those non-profit institutions which are controlled and mainly financed by central government and whose competence extends over the whole economic territory. Thus central government is not limited to ministries but includes the entities which are directly dependent on them in terms of authority (*i.e.* are not fully autonomous) and financing. Council Regulation 479/2009/EC and the accompanying guidance provide possible criteria for Member States to establish the scope of 'central government' within the context of the EED – but are in no way binding as the EED does not include references to Council Regulation 479/2009 nor to Annex IV of the Public Procurement Directive in the context of defining 'central government'.
4. When establishing the scope of the obligation under Article 5 of the EED, Member States should take into account Recital 17 of the EED which provides that '[...] *The obligation to renovate floor area of central government buildings should apply to the administrative departments whose competence extends over the whole territory of a Member State. When in a given Member State and for a given competence no such relevant administrative department exists that covers the whole territory, the obligation should apply to those administrative departments whose competences cover collectively the whole territory*'. This recital takes into account the federal structure of some Member States and is relevant for those Member States where for certain competences (such as health or education) there are no central/national government authorities which would exert control or would be the main provider of financing.

### **C. ESTABLISHING THE BASIS FOR CALCULATING THE TARGET (INVENTORY OR ALTERNATIVE)**

5. Member States have a choice of two methods to meet the obligations of Article 5. The main obligation is laid down in Article 5(1) and the 'alternative' approach/obligation in Article 5(6). The fulfilment of either obligation is expected to lead to an equivalent targeted improvement in the energy performance of buildings, the chosen approach will mainly determine only the manner in which this target is reached.
6. Under the main obligation ('default' approach)<sup>6</sup> the energy performance and surface<sup>6</sup> of all buildings to which Article 5 applies will need to be specified in a publicly available inventory

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<sup>6</sup> This discussion document uses the word 'surface' as the equivalent of 'total useful floor area'. The actual definition of surface for the purposes of this Article must be formulated such that it ensures consistency with energy performance certificates in use in the Member State/Region concerned.

as set out in Article 5(5), excluding however buildings exempted on the basis of Article 5(2). This task will be facilitated by the fact that Member States are already required, under Article 12 of the EPBD, to issue energy performance certificates for buildings occupied by a public authority and frequently visited by the public. This requirement under the EPBD applies as of 9 January 2013 to buildings with a total useful floor area above 500 m<sup>2</sup>, and as of 9 July 2015 above 250 m<sup>2</sup>. In line with Article 11 of the EPBD, these energy performance certificates must include:

- The energy performance of a building and reference values such as minimum energy performance requirements in order to make it possible for owners or tenants of the building or building unit to compare and assess its energy performance;
- Recommendations for the cost-optimal or cost-effective improvement of the energy performance of a building or building unit.

7. The energy performance certificates will therefore allow Member States to establish which buildings do not meet minimum energy performance requirements and what measures need to be undertaken to bring the buildings up to the required efficiency.

8. Two provisions of the Directive allow for flexibility when applying the main obligation (the 'default' approach):

- Article 5(3) allows a Member State that has renovated more than 3% of the total floor area of central government buildings in a given year to count the excess in any of the three previous or following years;
- Article 5(4) allows a Member State to count towards the annual renovation rate of central government buildings:
  - New buildings occupied and owned as replacement for specific central government buildings demolished in any of the two previous years; or
  - Buildings that have been sold, demolished or taken out of use in any of the two previous years due to more intensive use of other buildings.

9. Under the 'alternative' approach/obligation set out in Article 5(6) the energy saving target can be calculated on the basis of appropriate standard values for the energy consumption – expressed in kWh or other energy units – of identified reference central government buildings before and after renovation and according to estimates of the surface of the central government stock. The energy savings achieved under the alternative approach are cumulative, meaning that Member States are required to achieve the sum of annual savings over the whole period between 2014 and 2020. Furthermore, in line with Article 5(6), all the savings have to be achieved within central government buildings.

10. The main principle laid down by the Directive is that the amount of energy savings obtained under the 'alternative' approach must be equivalent to the energy savings obtained through the 3% renovation rate ('default' approach). The Directive allows the level of energy savings that the 'default' approach would generate to be estimated on the basis of standard values. Although establishing an inventory of buildings owned and occupied by central governments is not mandatory under the alternative approach, it should be noted that the best way of ensuring equivalence is to use the inventory referred to in Article 5(5) as the basis for calculating the 'alternative' target (*i.e.* expressed in terms of energy saved, and not in terms of renovated surface), as this will provide greater accuracy than establishing the target on the basis of estimates. This being the case, Member States may wish to establish and use the

inventory, irrespective of whether they choose to reach the target using the 'alternative' or 'default' approach.

11. If Member States instead choose to use standard values for the calculation of the 'alternative' energy saving target' as foreseen in Article 5(6) second subparagraph they may use the elements provided by the EPBD and the associated "cost-optimal" methodology<sup>7</sup>, namely:
  - Types of reference buildings;
  - Reference values for energy consumption of each type of reference building before renovation;
  - Reference values for cost-optimal energy consumption of each type of reference building with the defined energy efficiency measures applied.
12. The 'defined energy efficiency measures' under the cost-optimal methodology will include only those that address the building envelope, building elements and technical systems. Therefore, savings resulting from behavioural changes would need to be measured/estimated using other reliable methods, such as surveyed savings or metered savings.
13. The alternative approach allows the combining of different ways of reducing energy consumption in central government buildings (behavioural changes, 'deep' renovations, 'shallow' renovations, etc.).
14. The EED foresees that Member States can use certain flexibility mechanisms provided in Articles 5(3) and 5(4) for the purposes of the renovation rate target ('default' approach). . Article 5(6) provides that, under the 'alternative' approach, Member States will have to achieve by 2020 an amount of savings that is at least equivalent to that achieved by fulfilling the 3% renovation rate under Article 5(1). That means that as under Article 5(3) – it will be possible to count in the target for a given year the excess of savings achieved in previous or following years. Similarly, since the target under the alternative approach will be established in energy terms, the flexibilities provided for under Article 5(4) (replacing inefficient buildings with efficient ones and relocating staff to a smaller space) will lead to decreased energy consumption and thus will *de facto* also be available in this case.
15. Member States opting for the 'alternative' approach will have to notify to the Commission, by 31 December 2013, the alternative measures that they plan to adopt, showing how they would achieve an equivalent improvement in the energy performance of the buildings within the central government estate. In terms of notification methods, Member States should notify their legal provisions transposing the Directive into national law using the 'NIF' database. To ensure an efficient transfer of information the use of the 'NIF' database for the other notifications required under the Directive, such as under Article 5(6) is to be encouraged.

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<sup>7</sup> Commission Delegated Regulation (EU) No 244/2012 of 16 January 2012 supplementing directive 2010/31/EU by establishing a comparative methodology framework for calculating cost-optimal levels of minimum energy performance requirements for buildings and building elements, OJ L 81, 21.03.2012, p. 18

**D. EXEMPLIFICATIONS OF OPTIONS FOR FULFILLING THE 3% RENOVATION RATE TARGET**

16. The examples below aim to illustrate in a practical way how the 3% renovation rate can be established and achieved under the 'default' and 'alternative' approaches set out in Article 5 of the EED. The symbols and figures included there are purely illustrative.

17. **Example 1. Default approach with the different flexibility mechanisms applied**

18. **Calculation of the target**

<b>Building</b>	<b>Surface (in m<sup>2</sup>)</b>	<b>Rating</b>	<b>Buildings below minimum for new built/major renovation (assumed to be B)</b>	<b>Total surface of buildings below minimum</b>
1	2000	B		
2	10000	C	v	10000
3	7200	D	v	7200
4	600	B		
5	30000	E	v	30000
6	3000	A		
7	300	E	v	300
8 <sup>8</sup>	600	E	v	
				Total: 47500

In this example the target for one given year will be:  $3\% * 47500 = 1425 \text{ m}^2$ .

19. In line with Article 5(1), fifth subparagraph, Member States have to prioritise the renovation of buildings with the poorest energy performance, where cost-effective and technically

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<sup>8</sup> In this example it is assumed that building 8 was sold in the two previous years by the central government authorities, hence its surface does not count in the 'denominator' (total surface of buildings owned and occupied by central government on 1 January not meeting minimum EPBD requirements).

feasible. Cost-effectiveness should in principle be ensured by the fact that the targeted level of energy performance can be based on the cost-optimal methodology under the EPBD.

20. Under the scenario in Example 1, this means that buildings 5 and 7 need to be prioritised. However, at the same time, Article 5(4) allows Member States to count towards the annual renovation rate new buildings occupied and owned as replacements for specific central government buildings demolished in any of the two previous years or buildings that have been sold, demolished or taken out of use in any of the two previous years due to more intensive use of other buildings. Assuming that building 4 was built as replacement for a specific central government building demolished in the previous two years, its surface can be counted towards the target. Assuming that building 8 was sold in the two previous years and its staff were relocated to buildings 1 to 7, its surface can also be counted in the target. Counting these two buildings will imply that the remaining target for that year is 225 m<sup>2</sup> (1425 – (600 + 600)).
21. The two following options for meeting the target therefore arise:
- Option 1: Renovate building 7. The annual target will be met.
- Option 2: Renovate building 5. Given its surface, it will be possible to count savings resulting from this renovation in this year and the three following years.
22. **Example 2. Alternative obligation/approach: calculation of the energy saving target using estimates and standard values and options for meeting it**
23. **Calculation of the target**

<b>a. Types of reference public buildings</b>	<b>b. Energy consumption (kWh/m<sup>2</sup>)</b>	<b>c. Cost-optimal energy consumption with the defined energy efficiency measures applied (kWh/m<sup>2</sup>)</b>	<b>d. Total estimated surface for given category of buildings expressed in 1000 m<sup>2</sup></b>	<b>Total energy saving (GWh) Calculation: (b-c)*d/1000</b>
Offices	360	250	500000	55000
Educational buildings & hospitals	200	150	200000	10000
Residential	150	100	500000	25000
Other	100	70	300000	9000
'denominator' under alternative approach				99000



Result: In this example, the annual target will therefore be: 3% \* 99000 GWh = 2970 GWh (the estimated amount of energy that would be saved if 3% of central government buildings were renovated to meet cost-optimal energy consumption levels).

24. As indicated in section 3 of this paper, Member States may also find it convenient use the inventory to establish the alternative target. In that case, a similar formula as in the table above would apply:

$$\sum \frac{(b-c)}{d}$$

where:

'b' is the energy consumption of each building not meeting EPBD requirements;

'c' is the minimum consumption required under EPBD;

'd' is the surface of each building not meeting EPBD requirements.

25. **Sub-option one under alternative approach: reaching the target by reaping full cost-effective saving potential on the basis of deep renovations**

<b>a. Types of reference public buildings</b>	<b>b. Energy consumption (kWh/m<sup>2</sup>)</b>	<b>c. Energy consumption after reaping the full cost-effective saving potential (kWh/m<sup>2</sup>)</b>	<b>d. Renovated surface (1000 m<sup>2</sup>)</b>	<b>Total energy saved (GWh) Calculation: (b-c)*d/1000</b>
Offices	360	20	5000	1700
Educational buildings & hospitals	170	20	1000	150
Sport facilities	150	20	5000	650
Other	100	20	5800	470
Target				2970

Result: the annual target was achieved by renovating about 1% of the floor area (column 'd' in the first table in Example 2 divided by column 'd' in second table in Example 2) to nearly zero-energy consumption level (in this case assumed to be 20 kWh/m<sup>2</sup>).

26. **Sub-option two under alternative approach: reaching the target on the basis of behavioural changes**

<b>a. Types of reference public buildings</b>	<b>b. Energy consumption (kWh/m<sup>2</sup>)</b>	<b>c. Energy consumption after the introduction of behavioural changes (kWh/m<sup>2</sup>)</b>	<b>d. Surface of buildings where behavioural changes need to be introduced (1000 m<sup>2</sup>)</b>	<b>Total energy saved (GWh) Calculation: (b-c)*d/1000</b>
Offices	360	324	47222	1700
Educational buildings & hospitals	170	153	8823	150
Sport facilities	150	135	43000	650
Other	100	90	47000	470
Target				2970

Result: assuming that behavioural changes on average lead to a 10% reduction of energy consumption, they would have to be introduced in about 10% of the buildings owned and occupied by central government (column 'd' in the first table in Example 2 divided by column 'd' in third table in Example 2).

The above examples of meeting the target under the 'alternative' approach are not exhaustive, as it is possible to meet the obligation through any combination of renovations with different levels of intensity, behavioural changes or building management that have an impact on the energy consumption and lead to equivalent savings as would be achieved by renovating 3% of relevant buildings to minimum energy performance requirements set in application of the EPBD.