CONCERTED ACTION
ENERGY EFFICIENCY
DIRECTIVE

Core Theme Series Report:
Concerted Action Energy
Efficiency Directive

2

Public sector – public buildings and public purchasing

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Content

1 Introduction and context

The Concerted Action for the Energy Efficiency Directive (CA EED) supports implementation of the Directive 2012/27/EU (EED) by fostering the exchange of information and experiences among Member States with regards of the implementation of the Directive.

This report summarises work carried out by the Concerted Action for the Energy Efficiency Directive (CA EED) Core Theme 2 between January 2013 and March 2014. Core Theme 2 looks at the public sector (PS) – public buildings and public purchasing.

The objective of the work was to survey, discuss and draw conclusions on some topics of importance related to the exemplary role of the PS as a leader in promoting energy efficiency.

The new Energy Efficiency Directive - like the Energy Services Directive before it – states explicitly that public bodies at national, regional and local level should fulfil an exemplary role as regards energy efficiency. It imposes on the public sector several concrete obligations to make the sector a real leader in energy efficiency improvements. Moreover, it sets very tight deadlines for several activities, making the EED even more challenging for Member States.
This demand for exemplary initiative and efforts from the public sector falls mainly into two categories: the exemplary role of public bodies' buildings (art. 5) and purchasing by public bodies (art. 6).

The implementation of art. 5 has been discussed within the CA EED around the following themes:

1. "Default" approach.
2. "Alternative" approach to article 5. In practice, this focused on issues related to the establishment of the inventory and on initial information concerning the two approaches foreseen in art. 5.
3. Encouraging other bodies to follow central government's exemplary role in renovation of buildings (art. 5(7).

This report aims to inform and support the work of people within the public sector and national bodies involved in the implementation of EED, especially those from ministries directly involved in dealing with art. 5 implementation. Alongside central government representatives, stakeholders from regional and local levels should also be able to benefit from this report.

2 "Default" approach

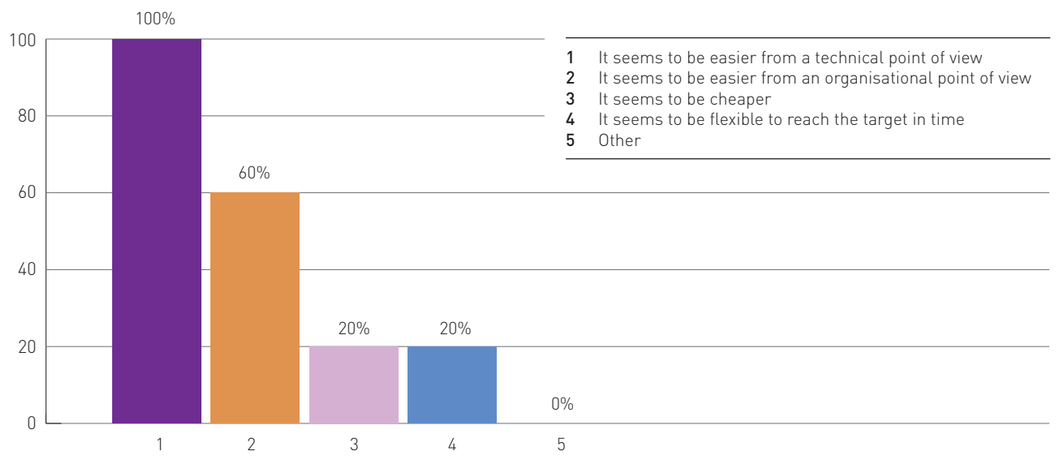
Article 5 of the EED permits two approaches - the "default" and the "alternative" - and various flexibility mechanisms. The approach chosen by each Member State (MS) will determine their way of meeting their target, but both approaches should lead to an equivalent improvement in the energy performance of buildings. It was therefore interesting to find out how many MS have chosen each approach and the reasons for their decision.

The "default" approach is laid out in art. 5(1). It stipulates that each MS shall ensure that, as from 1 January 2014, 3% of the total floor area of heated and/or cooled buildings owned and occupied by its central government is renovated each year to meet at least the minimum energy performance requirements set by Directive 2010/31/EU (EPBD). For the purposes of this, by 31 December 2013, MS shall establish and make publicly available an inventory of heated and/or cooled central government buildings with a total useful floor area over 500 m2 and, as of 9 July 2015, over 250 m2, excluding some exempted buildings. The inventory shall contain the following data: (a) the floor area in m2; and (b) the energy performance of each building or relevant energy data.

Under the "alternative" approach, which is described in art. 5(6), MS may decide to take other cost-effective measures, including deep renovations and measures for behavioural change of occupants, to achieve, by 2020, an amount of energy savings in eligible buildings owned and occupied by their central government that is at least equivalent to that required in art. 5(1), reported on an annual basis.

The obligation to renovate central government buildings in the EED complements the requirements in the EPBD, which require MS to ensure that when existing buildings undergo major renovation their energy performance is upgraded so that they meet minimum energy performance requirements. The results from the questionnaire showed that the overwhelming majority of CA EED national representatives had a clear understanding of art. 5. The questionnaire also provided insights on the reasons why the "default" approach (fig. 2) was preferred.

Figure 1. Reasons why MS have chosen the default approach (as opposed to the alternative approach)



The following conclusions were drawn from the CA questionnaire and discussions at the CA EED Plenary meeting in Dublin in March 2013:

- At that time, knowledge and experience of art. 5 was being steadily accumulated but was not sufficient to secure smooth and secure implementation in the majority of MS.
- Inventory creation is a complex and costly task best carried out by central government. The process of art. 5 implementation should therefore be initiated, governed and monitored by central governments.
- The CA participants reported few needs for clarification of the requirements of art. 5.
- The process of preparing the inventory of central government buildings is different across the MS. At that time, a few countries were well advanced, but a few were still in the conceptual phase of preparation.
- The possible exemptions laid out in art. 5(2) were generally seen as second-order priorities, but should not automatically be seen as insignificant to the EED energy efficiency targets (art. 3).
- At that time, relatively few countries had decided whether to choose the "default" or the "alternative" approach. The reasons provided for choosing a particular approach are varied and country-specific. Further work is required to identify more objective, cost-benefit based criteria.
- For the "alternative" approach, establishment of the central government building inventory is not obligatory but is strongly recommended.

The report presented to the Working Group and subsequent discussions led to the following recommendations:

- MS should continue to develop their individual approaches in order to optimise how they will reach the renovation objectives set in art. 5.
- The possible exemptions in art. 5(2) should be carefully examined at national level and presented to relevant bodies, e.g. military forces, architecture or historical heritage supervision authorities or religious societies. They should be presented as a win-win-opportunity enabling energy cost reduction. Training on possible, applicable energy saving measures is recommended.
- Assessment of the cost-effectiveness of renovating public buildings should include broader social and environmental considerations. The assessment of costs and benefits should be communicated across society to explain to citizens the reasons why government is spending public resources on its own building stock.
- As cost-effectiveness of approach seems to be the most important criterion when choosing between the "default" and the "alternative" approach, further elaboration of the issue is needed at the EU level as well as within each MS. MS should take into account national resources, experience and conditions.
- Where possible, existing building stock databases, public or private, should be used as bases for the inventory required by art.5. Some good examples of such databases were reported (e.g. by the Czech Republic (to be found at the CA ESD web site), Croatia, the UK).
- The art. 5 inventory should serve other purposes and therefore its scope should be enriched by providing additional data, i.e. reduction of CO2 emissions, energy intensity of the building measured in terms of one occupant or visitor. The idea of providing energy intensity and energy saving potential rather than floor area in m2 was supported. Linking with energy audit databases seems to be realistic and helpful. A Geographical Information System (GIS) was suggested as an example of a flexible and appropriate instrument.

- The work undertaken by central government should be promoted and communicated effectively to regional and local governments at the earliest possible stage to stimulate action at these levels. The use of a local energy agency is essential for effective and low-cost diffusion of information from central to local level.

- Based on their experience of renovating public buildings, MS should encourage municipalities and other public bodies to adopt integrated and sustainable energy efficiency plans with clear objectives, to involve citizens in their development and implementation and to adequately inform them about their content and progress in achieving objectives. The Covenant of Mayors is an example of a good framework for this.

- Methods for estimating savings potential under the "alternative" approach and for calculating savings stemming from measures other than renovations should be further elaborated as they play an essential role in the "alternative" approach.

- The MS in which the EED and the EPBD are implemented separately - or are only loosely connected - should consider closer co-operation as the potential for synergy effects is large and, in some MS, remains untapped.

- As the renovation obligations set in art. 5 require substantial and stable long-term funding, secure adequate financial resources are of primary importance for MS governments. EED implementation should be carried out in close coordination with art. 4 implementation (national buildings renovation strategies and plans). The provisions of art. 20 of the EED should be considered.[1]

Good practice examples

Several good practice examples were reported during the working group, including:

The Czech Republic: producing an inventory of central government buildings.

This provided details on the inventory being operated in the Czech Republic, e.g. how has been the inventory structured? Who are the ministers or public bodies responsible/involved in the process of inventory preparation? What types of data have been included?

Poland: financing public building restoration

Poland has an effective scheme for financing public building restoration that includes a competitive criteria for project selection, transparent procedures and strict rules for monitoring of results. This case study also gave extensive information on different financial schemes provided by the National Fund of Environmental and Water Management.

Further information:
www.ca-eed.eu/good-practices/member-state-presentations/public-sector/inventory-of-central-government-buildings

1 Article 20 Energy Efficiency National Fund, Financing and Technical Support, p. 5. Member States may allow for the obligations set out in Article 5(1) to be fulfilled by annual contributions to the Energy Efficiency National Fund of an amount equal to the investments.

3 "Alternative" approach to art. 5 in practice

Under the "alternative" approach stipulated in art. 5(6), MS may decide to take other cost-effective measures to achieve, by 2020, an amount of energy saving at least equivalent to that required in art. 5(1) in eligible buildings owned and occupied by their central government. These measures may include deep renovations and actions resulting in occupant behaviour change, and savings are to be reported on an annual basis.

The issues on the "alternative" approach were studied at the Plenary Meeting in Vilnius in October 2013. Inter alia, the following topics were discussed:

a insight into the "alternative" approach as understood by MS;

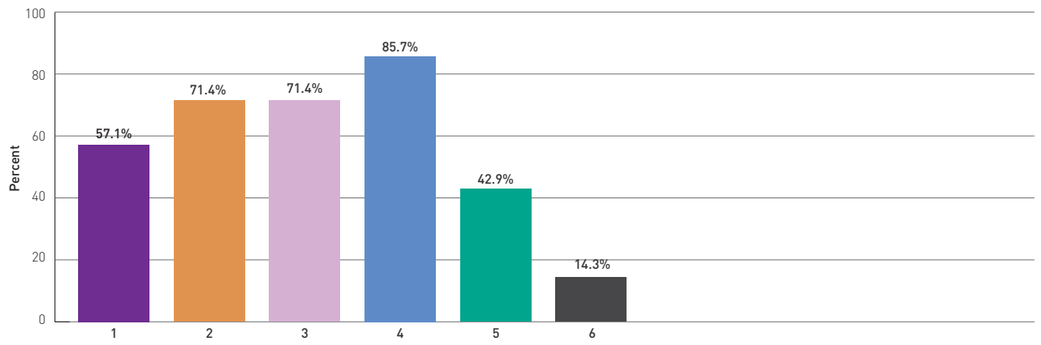
b the reasons why the "alternative" approach has been chosen (as opposed to the "default" approach);

c measures that have already been chosen and/or are planned under the "alternative" approach;

d comparison and value of the two approaches, taking into account different criteria, e.g. technical complexity, resources required, flexibility, costs.

The most frequently cited reason for choosing the "alternative" approach was the assumption that it seems to be a more flexible approach to reaching the target in time. MS are required to achieve the sum of annual targets over the whole period between 2014 and 2020, irrespective of the savings achieved in each individual year during that period (fig. 2).

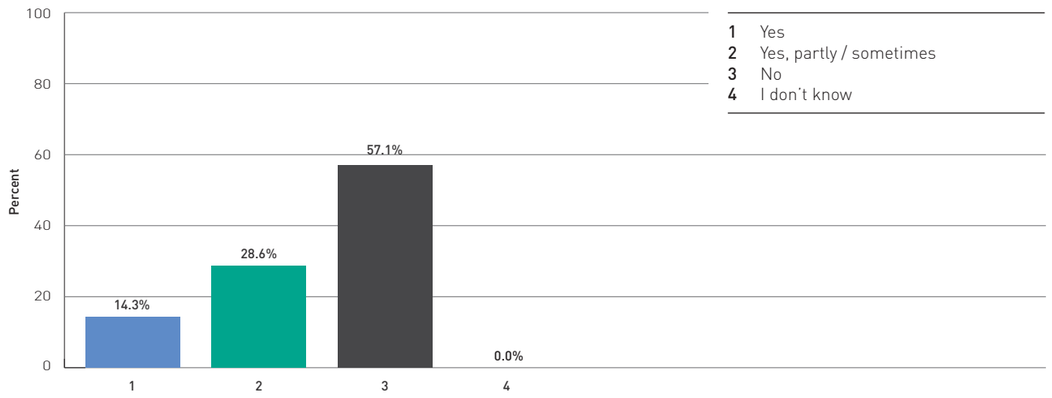
Figure 2. Since your country has chosen the alternative approach, please specify the reasons why (as opposed to the default approach)



1 It seems to be easier from a technical point of view.
2 It seems to be easier from an organisational point of view, e.g. does not require a central government building inventory.
3 It seems to be more cost-effective (cheaper), e.g. it allows in the inclusion of savings from behavioural change.
4 It seems to be a more flexible to reaching the target in time, since MS are required to achieve the sum of annual targets over the whole period between 2014 and 2020, irrespective of the savings achieved in each individual year during that period.
5 It seems to be more energy-efficient.
6 Other.

MS also reported very limited experience with the purchase of energy performance contracts and/or energy service companies (ESCOs) that may be applicable in art. 5 implementation (fig. 3).

Figure 3: Do you have any experience with the purchase of energy performance contracts and/or energy service companies (ESCOs) that may be applicable in art. 5 implementation?



The working group reached the following conclusions as regards the use of the alternative approach for art. 5:

- The implementation of art. 5 poses a real challenge for MS. In a majority of MS, the process is likely to be delayed compared to the schedule set in the EED. For instance, MS listed several factors which they considered to be crucial for the successful implementation of art. 5. As many as four of these factors were ranked almost equally: political support, well-co-ordinated administrative infrastructure, human and financial resources and main stakeholders.
- Possessing reliable data related to art. 5 was considered a prerequisite. There is a general shortage of information on the number of buildings belonging to central government that fall within the scope of the obligation, energy consumed and potential energy savings.
- At the time of writing, only a few MS have already decided which approach they will take. 2 have decided on the "default" approach and 4 on the "alternative", totalling 6 Member States. The vast majority are still in the process of making a decision (80% altogether).[2]
- Discussion about the pros and cons of the two eligible approaches provided some interesting and highly practical conclusions. For instance, one of the UK CA EED participants was of the opinion that it is better to let each individual body decide how to meet the target. Representatives from NL also found the "alternative" approach better since according to them it offers more flexibility, is more cost effective and enables use of the existing legal framework.
- It was remarked that, in countries where minimum energy performance standards of buildings are already in use, it is very likely that the payback time of deep renovation in already refurbished building stock would be unacceptably long.
- It was raised that in those MS where the average energy consumption in buildings is high in comparison to the most advanced countries in the EU, which may show a need for more costly investments, the "default" approach should be chosen and accompanied by the allocation of sufficiently high funds within the EU cohesion policy to cover the costs of the "3%" renovation.
- Cost effectiveness is no doubt one of the major criteria when choosing between the permissible options. However, other criteria should also be used to enable a more in-depth overview of the energy - or rather, more broadly sustainable - condition of every specific building under consideration. For example, it should be taken into account whether the building has an energy manager, energy monitoring and management system or whether full information and long-time energy consumption statistics are available.
- MS choosing the "alternative" approach plan to use the whole spectrum of eligible measures; i.e. deep and shallow renovation and behavioural change measures are being considered.
- Finding an adequate methodology to measure savings resulting from behavioural change remains a challenge. A few MS reported that they possess a suitable approach, such as bottom-up methodology, smart metering or direct feedback from occupants.
- Again, it was confirmed that joint implementation of the EED and the EPBD encounters a common barrier in many MS, namely the fact that the two directives are being implemented in different governmental organisational units and usually by two different ministers.

Finally, the working group produced the following recommendations on art 5:

- Obligations for the public sector stipulated in art. 5 still pose a challenge for the majority of the MS. These obligations should be further investigated and discussed, and best practices should be exchanged among MS.
- MS should try to implement different directives in a coherent way, assuring synergy and avoiding duplication where possible. To accomplish this, procedural and organisational changes within governmental units may be required.

2 Claudia CANEVARI, DG ENER.C.3, Athens, PM CA ESD, 27 March 2014, provided the following information on the latest state on implementation of art. 5 as on 31 December 2013 "Article 5, notification of alternative approach (17) or publication of inventory (4)".

Good practice example

The CA participants recommended the action plan for art. 5(6) effective implementation

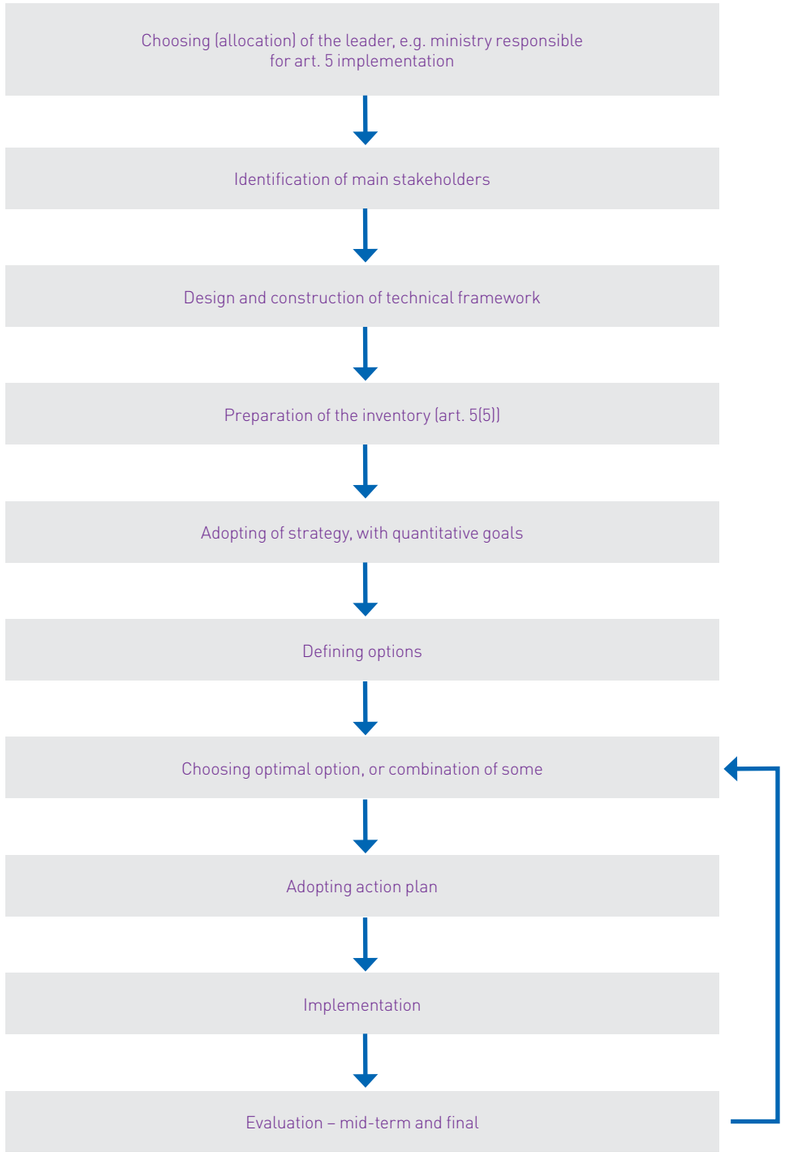


Figure. 4. Action plan for effective implementation of art. 5(6) of the EED

4 Encouraging other bodies to follow central government's exemplary role in building renovation (art.5.7)

The EED stipulates that public bodies should play an exemplary role in energy efficiency through the renovation of buildings owned or occupied by central governments (art. 5) or by ensuring that central governments purchase only products, services and buildings with high energy performance, meeting specified conditions (art. 6). Both articles also contain obligations for MS to encourage public bodies at regional and local level to follow central government's exemplary role (art. 5(7) and art. 6(3) respectively).

Article 5(7) provides a list of measures that can be used in this process:

(a) adopt an energy efficiency plan, either standalone or as part of a broader climate or environmental plan, containing specific energy saving and efficiency objectives and actions, with a view to following the exemplary role of central government buildings laid down in art. 5. paragraphs 1, 5 and 6;

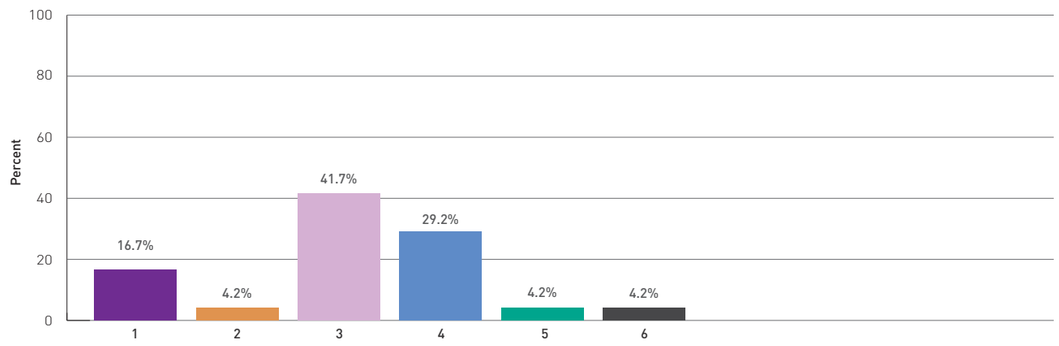
(b) put in place an energy management system, including energy audits, as part of the implementation of their plan;

(c) use, where appropriate, energy service companies and energy performance contracting to finance renovations and implement plans to maintain or improve energy efficiency in the long term.

Work carried out and presented at the Plenary Meeting in Athens, March 2014, was focused on the encouraging role of central governments as set out in art. 5(7) only, that is, concentrating on building renovation at regional and local level exclusively. Social housing bodies governed by public law were not included in the scope of this Working Group.

According to the results of the Working Group questionnaire, the main stimuli for renovating public buildings in MS are the two main EU directives addressing energy efficiency, namely the EPBD[3] and the EED[4] (fig. 5), with the first and main booster being implementation of the EPBD.

Figure 5: Reasons for renovation of public buildings induced or encouraged by central government as stipulated by art. 5

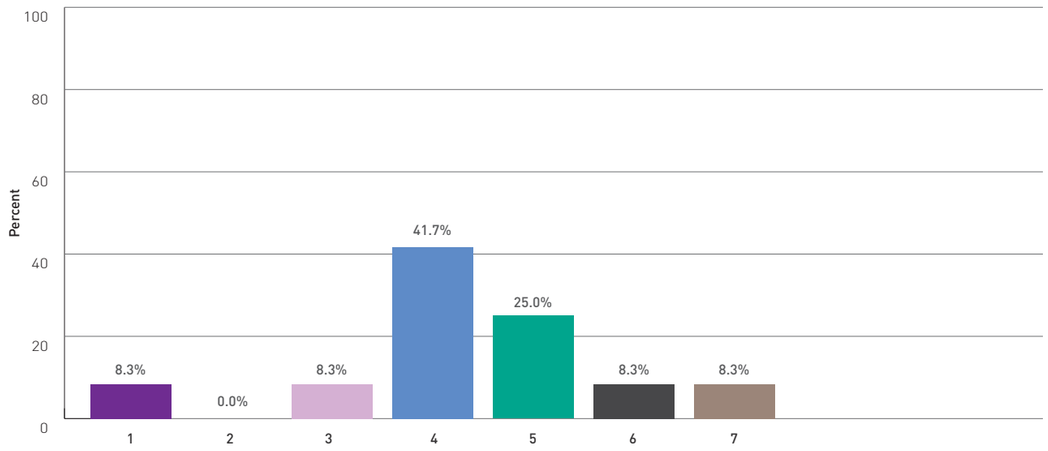


1 Yes, it has been started by the EPBD and is ongoing independently from the EED; **16.7%**
2 Yes, it has been started by the EED (art. 4 or/and art. 5); **4.2%**
3 Yes, it has been started by the EPBD and then has been invigorating by the EED; **41.7%**
4 No, but it is planned to start in the near future as part of implementation of the EED; **29.2%**
5 No, it has not been planned to start in the near future; **4.2%**
6 I don't know **4.2%**

3 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.
4 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 2012/30/EU and repealing Directives 2004/8/EC and 2006/32/EC, .OJ L 315, 14.11.2012.

The questionnaire also showed that central governments use or plan to use various approaches for encouraging public bodies at regional or local level to renovate their buildings; (fig. 6).

Figure 6: Measures already implemented or planned to be implemented in the near future by central government to encourage public bodies at regional or local level to renovate public buildings as stipulated by art. 5 (top-down approach)



1 Adoption of an energy efficiency plan, freestanding or as part of a broader climate or environmental plan, containing specific energy saving and efficiency objectives and actions;
2 Putting in place an energy management system, including energy audits, as part of the implementation of their plan;
3 Use, where appropriate, energy service companies and energy performance contracting to finance renovations and implement plans to maintain or improve energy efficiency in the long term.
4 A combination of any of the above measures;
5 Any of the above measure(s) supported by additional measure(s). Please specify the additional measure in the comments box below;
6 No such measures have been undertaken or are planned to be launched in the near future;
7 I don't know.

The working group reached the following conclusions as regards the implementation of art. 5(7):

- 62% of MS have started renovating their public buildings, all within the frame of EPBD and/or EED implementation.
- Most central governments are planning to use energy efficiency plans, Energy Management Systems (EMS) and Energy Performance Contracting with ESCOs to encourage public bodies at national, regional and local level to renovate their public buildings. However, only a few participants reported the use of EMS including energy audits as a standalone measure.
- The majority of CA EED participants declared that the measures listed in art. 5(7) already offer a wide range of options and do not see the need for further ones. However, some suggested additional measures such as: compulsory energy audits in PS, energy meters installation, sharper and stricter criteria in deep renovations, Voluntary Agreements, "green" public procurement, subsidies, partnerships, best practices, monitoring and reporting.
- Behavioural changes are promoted by the implementation of awareness and information campaigns for public employees.
- The Covenant of Mayors has been cited by most of the countries as an initiative that can play a supportive role in art. 5 implementation. Also, national energy agencies have been identified as organisations that can provide technical advice and consultancy to governments for the implementation of art. 5. The European Energy Service Initiative (EESI) has also been identified since it has widely promoted the implementation of Energy Performance Contracting (EPC).
- Right combination of measures and their matching are essential, e.g. money and funding schemes.

A number of recommendations were also proposed:

1 MS should try to set individual targets for the renovation of public buildings to be implemented by administrations and the services under their responsibility, as well as monitoring and reporting commitments.
2 In the top-down case, the possibility of hiring ESCOs and EPC implantation should be further investigated.
3 Since several other measures have been indicated as contributing to fulfilling art. 5, it seems appropriate to investigate the connections between the measures implemented at local level and the energy performance improvement of the governmental buildings.
4 Attention should be paid to overcoming the weaknesses of both approaches in art. 5,that may suffer from a lack of financial resources and the scarcity of technical skills in the PS.
5 Projects launched by central governments should further be fostered and developed by local stakeholders.

Good practice examples

The following good examples were demonstrated at the meeting:

Broad scope of central government initiative

- **Bulgaria**: Encouraging public buildings' renovation in Bulgaria. A description of measures used to support public building renovation in Bulgaria, included the legislative framework, energy efficiency plans and building audits, energy management system, energy efficiency measures, financial support.
- **Greece**: The "EXIKONOMO" project. The project aims to improve energy efficiency at a local level/in municipalities, to promote energy saving activities with direct applicable results and to increase the awareness of citizens and managers of local authorities regarding energy saving and protection and sustainable management of the urban environment.

Working EPC scheme launched by central government and developed at local level

Portugal: EED and Eco.AP. An energy efficiency programme within the public administration of Portugal. The scheme comprises of an energy manager in all central government bodies; development of the barometer Eco.AP in order to evaluate the energy efficiency of the central government sector; development of energy performance contracts in the buildings/equipment with an higher energy consumption (or inefficiency); development of energy efficiency action plans for the remaining buildings or equipment.

Bottom-up tool for building management, demonstrating allocation of incentives

Netherlands: Green Lease Menu. A specialised tool for owners and users to make buildings more sustainable (including use, facility management, and exploitation).

Further information:
www.ca-eed.eu/good-practices/member-state-presentations/public-sector/encouraging-other-bodies-to-follow-the-exemplary-role-of-central-government-in-building-renovation

5 Concluding remarks

The three pieces of work presented above dealt with the role of the public sector in demonstrating its exemplary role in increasing energy efficiency. They created an EU-wide panorama of the process of implementation of art. 5 of the EED. They demonstrated how different the practical ways of implementation chosen by MS are, while reinforcing that cost-effectiveness appeared to be the most important criteria when choosing between the "default" and the "alternative" approach. They also showed that MS have in general no problems with interpretation and understanding their roles as stipulated in art. 5.

The CA EED activities on art.5 also revealed that MS are trying to build as much as possible on their current knowledge, experience and infrastructure and a large number of working examples on successful implementations were presented during plenary meetings. They constitute the real value of the meetings by providing model solutions to be implemented in other MS.

Impact and possible co-operation and co-ordination with the EPBD inspired works were also discussed. It was generally concluded that, where possible, MS should seek synergy between the implementation of the two directives. A wide area of convergence and synergy between the two was considered obvious.

It was also commonly agreed that the process of implementation should not necessarily be a top-down process since the activities undertaken at regional and local level may also contribute to meeting the objectives of art. 5. This forms the bottom-up approach highly praised and valued during the meetings. A couple of programmes launched locally were considered as valuable bottom-up contributions to the national level effort.

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The Concerted Action for the Energy Efficiency Directive (CA EED) was launched by Intelligent Energy Europe (IEE) in spring 2013 to provide a structured framework for the exchange of information between the 28 Member States and Norway during their implementation of the Energy Efficiency Directive (EED).

For further information please visit **www.ca-eed.eu**
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