Eurima’s Position on the recast of the EPBD

INTRODUCTION

The European Union today faces unprecedented energy challenges. Energy prices are at record levels. Energy supply concerns continue to mount, and evidence of rapidly accelerating man-made climate change and its environmental, economic and social consequences have never been more compelling.1

Improving energy efficiency has been shown to be the single most cost-effective and readily available means of meeting the energy challenges we face2. Energy efficiency has become the "first fuel" we have at our disposal. Because 40% of Europe’s energy is used in buildings, and because an estimated 28% of this can be saved by 20203, energy efficiency in buildings must be a cornerstone of our energy policy. Realising this potential can curb total EU energy consumption by over 11% by 20204.

The case for an ambitious recast of the Energy Performance of Buildings Directive (EPBD)5 is overwhelming. It will be all but impossible to meet Europe’s climate and energy security goals without acting on buildings. The 20% energy savings objective, as well as the 20% targets for renewable energy and CO2 reduction set for 2020 by Europe’s Governments and Heads of State in their Spring European Council of 20076, depends to a large extent on improving the energy performance of buildings.

Both the European Council7 and the European Parliament in its Own Initiative Report on the Energy Efficiency Action Plan (EEAP)8 call for a rapid and thorough implementation of the priorities from the Action Plan, including further developing the framework provided by the EPBD. This must be ambitious and set Europe on the path towards very low energy buildings.

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1 IPPC Third Assessment Report of 2007
3 COM (2006) 545 final
4 Ibid.
5 Directive 2002/91/EC.
7 Ibid and reference to 15210/06. Energy and Transport Council, Conclusions of 23 Nov. 2006.
Putting Europe on such a path is critical not only for climate and energy security but also for Europe’s economic well being. An ambitious recast could in time provide the EU with over 270 billion euros a year in net energy cost savings\textsuperscript{9}. For individuals, reducing energy use and costs in buildings is essential as energy prices rise to levels that significantly reduce their economic well being: fuel poverty is unfortunately increasing in Europe.

The EPBD was designed to play a major role in realising the large cost-effective savings potential available. According to Article 15 of the Directive, transposition was to have been completed by January 2006\textsuperscript{10}. However, implementation of the EPBD was delayed in most Member States, and extensive use of the optional additional three-year transposition period has been considered necessary. Infringement procedures have been launched against almost two-thirds of the Member States, mainly for failure to notify the Commission of transposition, but also for poor application. The level of ambition and the quality of transposition and implementation of the Directive have also varied considerably, including the efficacy of compliance mechanisms in secondary legislation.\textsuperscript{11}.

An ambitious recast of the Directive would allow Member States to improve their transposition, implementation and compliance, while ensuring that the frameworks provided by the transposition of the original EPBD in the form of primary legislation are maintained. It would also ensure that future building codes, certification, financing schemes, and training and education are ambitious enough to realise fully the cost-effective savings potential.

Several of the more important elements to be included in a recast of the Directive have been set out in the Commission Action plan for Energy Efficiency. According to the Action Plan, these should be proposed by the Commission by 2009, at the latest.

To realise the full potential of the Directive, a number of changes will need to be made.

These include:

- \textbf{The current 1000 m}^2 threshold for major renovations needs to be removed.} The scope of the Directive would thus be enlarged to include single-family houses and smaller apartment buildings, which account for more than 60% of the total heated and cooled space and represent the largest potential for cost savings. To ensure that this particular measure has the desired effect, other changes in the Directive are necessary.

- \textbf{Minimum performance requirements for buildings and components must also be established, reviewed and revised regularly in all Member States in order to ensure that long term EU and national environmental targets for CO}_2\textsubscript{e} emissions reduction can be reached on time. These performance requirements shall be based on measurable savings and cost-effectiveness criteria that reflect the current and expected development in energy prices. The integrated methodology by which Member States calculate shall be used to establish these minimum

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\textsuperscript{9} Ecofys VI Study, Scenario 5 \url{www.eurima.org}. Net savings based on 70 USD/barrel and 30-year reference life. Coupled-cost investment assumptions, including capital and maintenance.

\textsuperscript{10} Member States were allowed an additional period of three years for the transposition of Articles 7, 8 and 9 on the certification of buildings and inspection of boilers and air-conditioning systems if a lack of experts could be substantiated.

performance requirements based on degree-day adjusted energy costs and energy efficiency investment costs to reach cost-effective optimal levels of both of these. These calculation principles need to be set out in the recast Directive, with details in an Annex. They shall apply to new buildings and to major renovations as well as to energy-related components. Both residential and non-residential buildings shall fall within the scope of this requirement, allowing Member States to establish reference buildings to suit local conditions. Present and future energy price developments, as well as societal and private-economic costs and benefits shall be taken into account in the calculation principles.

- **Energy performance certification must be up-graded to investment-grade energy audit level and strengthened in order to promote the renovation process with well specified recommendations, as well as to provide cost-quantifiable criteria for financial incentives.** Recommendations made in Energy Performance Certificates shall be made mandatory within a defined time frame provided they are clearly cost-effective. In the private sector Member States shall ensure that advantageous financing is available.

- **Higher and more uniform qualifications and better training for building certifiers are also necessary.** Such qualifications shall also apply to the technicians responsible for carrying out the inspection of boilers and air-conditioning systems.

- **A strategy for Member States to move most new build towards very low-energy or zero-net energy standards by 2015 and all new build to this level by 2020 is necessary and shall be led by the European Commission.** Less than one-fourth of the Member States have thus far set forth such a strategy; the remainder need also to do so. Today’s new buildings will represent around 50% of all buildings in 2050 and therefore it is critical that they are built for tomorrow’s climate and energy challenges and not those of yesterday.

- **In a similar fashion, a plan, a timeframe and targets must be set for improving the energy performance of the existing building stock.** Here the public sector can lead by example and show the way on very low-energy buildings for both new and existing buildings. This will in time bring the energy performance of the building stock to an economically optimal level.

- **Adequate compliance mechanisms for building codes in the Member States must be put into place and made transparent, with their efficacy ensured, tested and measured, and reported to the Commission by Member States.**

- **Member States shall ensure that financing, subsidies and incentives are in place to allow rapid implementation of proven available energy efficiency improvements, particularly in the existing building stock.**

Changes made in revising the EPBD must be brought into force, transposed and implemented in a timeframe and in such a way as to complement and strengthen the final stages of the implementation of the current Directive. Existing Articles selected for revision will need to be recast in such a way as to ensure that implementation is improved in those areas where it has been judged to be weak.

It will be another 10 years before an opportunity to revise the EPBD rolls back around. Moreover many existing buildings in Member States are now entering the end of their 25 - 30 year renovation cycles. It is important that when these renovations are carried out, it is done so in an economically, environmentally and socially optimal
manner. Therefore, even if it has been termed a "recast", the forthcoming revision of the Directive should be as ambitious as possible, while still improving the implementation of the current EPBD. By making the proposal both short-term as well as strategic, issues such as a strategy for very low-energy buildings and sustainability in the buildings sector will also be addressed.

SPECIFIC PROPOSALS

A. Removing the 1000 m² threshold for renovations

The current 1000 m² threshold for major renovations shall be removed in the recast EPBD. Enlarging the scope of the EPBD in this manner would allow inclusion of single-family houses and smaller apartment buildings, which account for more than 60% of the total heated and cooled space in buildings. This represents the largest potential for cost savings.

Recent studies, which have been referred to in a number of Commission documents, indicate a very large savings potential resulting from eliminating the 1000 m² renovation threshold set out in Article 6 and in Recital 13. The threshold in Article 6 shall be removed completely, as was specifically requested by the European Parliament in its Own Initiative Report on the EEAP. Doing so would still mean retaining a threshold of 50 m² because stand-alone buildings below this size are already allowed to be excluded in the EPBD. Around sixty percent of the cost-effective savings potential is in buildings smaller than the 200 m² level, mostly single-family houses. (See Table 1 below.) It is also this category of building where issues such as fuel poverty are likely to be most strongly felt as energy prices continue to rise, particularly in new Member States.

<table>
<thead>
<tr>
<th>EU 25: M tons of CO₂ emissions per annum</th>
<th>RESIDENTIAL Buildings</th>
<th>Non-Residential Buildings</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecofys II to V</td>
<td>&lt; 200m²</td>
<td>&lt; 1000m²</td>
<td>&gt; 1000m²</td>
</tr>
<tr>
<td>CO₂ emissions</td>
<td>492</td>
<td>88</td>
<td>67</td>
</tr>
<tr>
<td>Technical potential EPBD</td>
<td>0</td>
<td>0</td>
<td>34</td>
</tr>
<tr>
<td>Technical potential ext&gt;200m²</td>
<td>0</td>
<td>48</td>
<td>34</td>
</tr>
<tr>
<td>Technical potential ALL buildings</td>
<td>278</td>
<td>48</td>
<td>34</td>
</tr>
</tbody>
</table>

Table 1: CO₂ Savings potential from heating

The 1000 m² threshold in Article 5 on alternative energy supply systems in new buildings shall also be eliminated. However, in calculating the technical, environmental and economic feasibility of alternative energy supply systems, including from renewable energy sources, it is necessary first to ensure that the demand for energy for heating, cooling, domestic hot water, ventilation and lighting is first optimised. Only then can the proper dimensions of the energy supply system be determined, including for those for photovoltaic, solar thermal, CHP, district heating and cooling and heat pumps. In addition, while the energy supply system might change, the building envelope normally lasts much longer. By the same token,
minimising energy demand improves the overall cost-effectiveness of the renewable energy sources being used and facilitates their application.\(^{14}\)

B. Principles for minimum energy performance requirements for buildings

Minimum energy performance requirements for buildings are fundamental measures that will contribute to achieving EU and national environmental targets. To ensure cost-effectiveness, optimal levels of energy performance shall be calculated in terms of investment costs and economic savings, that is total costs, using accounting conventions that are based on Life Cycle Costs (LCC)\(^{15}\) expressed in Net Present Value (NPV) format, and not just in terms of kWh. This is also in line with the condition in most EU energy efficiency legislation that energy efficiency investments shall be measurably and verifiably cost-effective.

Recent studies on thermal insulation\(^{16}\) show that today’s building codes for new build and for existing buildings are far from the economically and environmentally optimal level for construction components (in U-values), as well as for the building as a whole (kWh/m²). An effective way to reach this optimal performance level for thermal insulation is to provide the Member States with a set of principles for calculating the technically as well as the economically and environmentally optimal level. This calculation methodology could be included in the recast EPBD as one or more Annexes that contain descriptions and examples of the principles of the calculation methodology, expressed in a set of technical and economic parameters. This would allow for national differences and local conditions, which is in line with the principle of subsidiarity in the buildings sector.

In an integrated manner, the calculation methodology shall cover minimum performance requirements in kWh/m² (maximum limit values) for the optimal integrated demand for heating, cooling, ventilation, hot water and lighting, as well as optimal values for individual components. The algorithm for the calculation will also allow the optimisation of the supply of useful primary energy to meet these heating, cooling, mechanical ventilation, domestic hot water and artificial lighting demands. This will allow a fair and integrated costing of renewables within the building’s system boundary, such as solar thermal and photovoltaics, and will take into account other bioclimatic principles and the quality of the building envelop. Primary energy as well as CO2 emissions costing are to be covered, allowing for private as well as societal cost optimisation. Calculation methods for non-residential buildings will also be covered in the calculation\(^{17}\) methodology.

\(^{14}\) The concept of the “Energy Triangle”, with optimal energy demand at the top of the inverted triangle, followed then by the supply of renewable energy and finally, at the smaller end of the triangle by the effective use of the supply of non-renewable energy, needs also to be addressed fully in the on-going discussions on the Commission proposal (COM(2008)19 final of 23.01.2008 for a Directive on the promotion of the use of energy from renewable sources.

\(^{15}\) The objective of LCC analysis is to choose the most cost-effective approach from a series of alternatives so the least long-term cost of ownership is achieved. LCC studies marry together engineering details about equipment life/death/support and capital cost to reach a single number called Net Present Value (NPV) which describes the time value of money expended over the life of the project.


\(^{17}\) This algorithm will take into account the 31 CEN standards developed to implement the EPBD. Member States will continue to be required to calculate and meet both minimum performance values for these components, as well as for the integrated energy performance of the building as a whole. The only difference is the inclusion of economic parameters (expected energy price, investment and maintenance costs, interest rates) and related calculation principles as set out in the Annex. These would then be applied for all new build and for all renovations, including non-residential buildings.
The calculation principle shall include a dynamic process, as in the original EPBD, requiring Member States to review and strengthen as necessary the minimum performance requirements at regular intervals (every five years). This would allow the requirements to take into account new energy sources and investment costs, as well as new technologies.

B.1. Setting overall minimum requirements for major renovations and for energy-related building components, in new and existing buildings

B.1.1. Major renovations of existing buildings

In the proposed recast of the EPBD, the scope of the requirement in Article 6 on existing buildings undergoing major renovations will be expanded when the 1000 m² renovation threshold is removed (as proposed in point A, above). Recital 13, which defines a major renovation, should be adjusted accordingly. For both non-residential and residential, the basis for calculating the share shall be changed to include in the concept of the total cost of the renovation, not only renovation related to the building shell and/or energy installations, but shall instead include all types of renovations. The rationale for such a change is to require a review and possible upgrade of the energy performance of the building when all types of renovations are undertaken, provided the energy-related measures are also technically, functionally and economically feasible. Many economies of scale and synergy effects have been clearly established from combining energy-related renovations with non-energy renovations. The 25% threshold should be maintained to ensure that available opportunities for cost-effective renovations of the building envelope and of the energy systems are not missed.

Article 6 on existing buildings, currently requires the energy performance of buildings to be upgraded and minimum performance requirements to be met when a major renovation of a building (>25% of the value of a building’s envelope and/or its energy installations, including lighting) is carried out, (or where more than 25% of the building envelope (in m²) is involved).

The revised Article 6 shall also provide a more precise time limit during which the renovation can take place. Instead of “within a limited time period”, it shall read “within a five-year time period”, Article 6 and Recital 13 will thus be adjusted to take into account minimum requirements for components.

B.1.2. Energy-related components in new buildings

When individual energy-related building components are installed in new buildings minimum performance requirements or, in the absence of these, calculation principles and selection and procurement criteria will be applied by Member States to ensure that new components meet optimal cost-effective performance criteria.

Where minimum requirements have been established at EU level for installations -- such as in the Eco-design Directive --, these minimum requirements shall be shown in a separate Annex in the recast EPBD. When such minimum performance requirements have not yet been adopted at EU level, calculation methods for available technologies, based on Net-Present Value (NPV) and Life-Cycle Costs

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18 Defined as wall, roof and floor insulation, windows and lighting installations, as well as heating and cooling systems, ventilation systems and domestic hot water heaters and heat recovery equipment.
(LCC) for these installations and components shall be provided in the Annexes to the recast Directive. In these Annexes, account shall be taken of both energy and investment costs and possible revision of the calculation principles and parameters shall be subject to comitology.

**B.1.3. Energy-related component replacement in existing buildings**

Member States will ensure that partial renovations and replacements of old or worn-out components will also contribute to the building’s energy performance. Whenever individual components (such as windows, roof, wall and floor insulation, etc.) and individual systems (such as heating, cooling, ventilation and lighting), are replaced or renovated, these components shall also meet minimum performance requirements.

When EU-level performance requirements have not yet been established, calculation methods based on Net-Present Value (NPV) and Life-Cycle Costs (LCC) for these components and installations shall be provided in the Annexes to the recast Directive, in the same manner as for components and installations in new buildings.

This component requirement is an important complement to the requirement to use major renovations as an opportunity to take cost-effective measures to enhance the energy performance of the building as a whole.

**B.1.4 Energy Supply**

In addition to minimum performance requirements to optimise heating, cooling, domestic hot water and lighting demand, minimum in situ performance requirements for installed heating and cooling systems, for example, will as mentioned above, be included in an Annex to the new EPBD. These will be based in part on the available product requirements established under the auspices of the Eco-design Directive for these installations. Examples are boilers, water heaters, heat pumps, circulation pumps, active ventilation systems and air-conditioners. Until such time that minimum requirements are developed at EU level for these products, Member States shall be required to provide a list of minimum performance levels based on Net Present Values (NPV) and Life-Cycle Costs (LCC) for building products and heating, cooling ventilation and lighting installations. These shall be based on available test information, including information from public procurement guidelines and shall apply the same economic parameters and values as are applied in the Annex on heating, cooling and lighting demand. They may also include economic calculations (NPV/LCC) or references to information on available packages of measures that can be taken in conjunction with renovation.

**C. Renovation plans and timetables for renovating all existing buildings**

In order to accelerate the pace with which existing buildings are renovated, Member States will be required to submit to the Commission renovation plans for all buildings, beginning with older public buildings, and buildings singled out in the energy performance certification process. A requirement to report on this renovation plan in the next NEEAP shall be included. A requirement to develop a timetable and a financing plan for all buildings (including private) shall also be required for the next NEEAP
D. Strengthened Public Sector Obligations

An increased requirement is proposed for the public sector to take the lead in renovation by being provided with guaranteed financing for highly cost-effective measures that are recommended in the certification process. In addition, in displaying energy performance certificates, the threshold of 1000 m² shall be removed completely to underline the increasingly important role of the public sector in focusing public awareness of the energy performance of buildings.

The public sector shall also expand its role in demonstrating new technologies and energy-efficiency measures it implements. It will do this by providing the public with easily accessible information on these measures and their savings. These proposals find support in the Energy Services Directive, for which the transposition deadline is 17 May 2008, as well as in the Commission’s Energy Efficiency Action Plan.

Many Member States, including Germany, NL and France have already begun setting renovation timetables.

To allow comparisons between Member States, regions and municipalities, the Commission will take measures to increase the coherence of public procurement guidelines. The Commission will also adapt and promulgate the benchmarks for energy performance in buildings as set out in Annex V of the Energy Services Directive.

E. Requirements for very low-energy buildings and a strategy to accelerate this development in all Member States

The Commission Energy Efficiency Action Plan calls for the Commission to develop by the end of 2008 a strategy for very low energy or passive buildings to be deployed by 2015. In their NEEAPs, and according to a recent study, a majority of Member States have already developed their own official or non-official definition of very low-energy housing and around seven have adopted this level as a minimum performance requirement for future new build. Several Member States such as Denmark, France, Germany, the Netherlands and the UK (England & Wales) have already approved a national strategy for new buildings towards the level of very low-energy buildings to become the standard in the years leading up till 2020. The savings potential from such strategies is highly significant: In a passive building the energy used for heating is less than one tenth of the average energy use for heating in Europe.

Although the technology and techniques already exist to construct very low energy buildings or passive buildings, there remain significant barriers to this becoming the standard across the EU. A lack of common requirements promoting the passive or sustainable level, a lack of knowledge and understanding of the numerous benefits of passive buildings and, especially, a lack of skills and training within the building chain are some of the major barriers.

Although few Member States have set up clear timetables to renovate existing buildings to the level of very low-energy buildings, this is a goal which shall be promoted as strongly as possible.

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19 SBI 2008:07 European national strategies to move towards very low energy buildings. www.euroace.org
Results of recent studies in the new-build housing market show that an average reduction of 50% to 65% can be obtained per very low energy or passive house compared to business as usual. On an annual basis, over time, these buildings are projected to realise an average annual reduction of 0.46% with respect to business as usual, thereby exceeding the Kyoto target of 0.4% annually for that sector.

E.1 Member States shall be required to develop a national plan and a timetable

This plan and timetable shall show how very low-energy buildings will become the norm for minimum performance requirements for new buildings by 2015. This shall be done by successively strengthening national building codes, including the building envelope and without prejudice to the work of the Member States already active in this area.

E.2 Member States’ national plans and timetables shall include strategies for applying very low-energy building technologies and techniques for renovation

These strategies for very low energy buildings shall apply to both major renovations and for component replacement, including for the building envelope. These plans will also include national objectives and timetables for bringing the existing building stock up to very low-energy standards in all cases where this is shown to be economically and technically feasible. To accomplish this, Member States shall be required to provide the necessary incentives and up-front financing. The impacts on the entire existing stock of building of developing low-energy building components shall be monitored by member States and the use of such components prompted.

E.3 Member States shall be required to develop adequate programmes for the training, education and necessary certification of those involved in the supply chain for very low-energy buildings, for both new build and renovations

Because of the need to establish proper balances between different systems in very low-energy and passive buildings, reduced tolerances and the importance of the indoor climate, there will be increased needs for training, educating and certifying all actors in the supply chain as well as building managers and owners. Member States will ensure that such training, education and certification are made available as early as possible.

E.4 The public sector shall also take the lead and show the way in implementing the strategy for very low-energy buildings, both new and existing.

The obligation for developing an EU strategy for very low-energy buildings, while placed on the Commission, will require action at Member-State level. However, the promotion of this action will benefit from action at EU level, including a limited degree of harmonisation. Therefore, the recast EPBD shall in general terms define the scope and objectives of a strategy regarding very low-energy buildings, as well as provide guidelines. Such an Article would of necessity present only general criteria and objectives due to local conditions and the varying and disparate paths this development has already taken in many Member States. The public sector shall form a part of this strategy.

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20. PEP – Promotion of European Passive Houses; 2008; European Commission-funded project EIE/04/030/SO7.39990
F. Compliance issues

To improve compliance, an Article in the recast Directive is necessary to require Member States to ensure the efficacy of their compliance and control schemes. This shall be done by requiring systematic control and follow-up of the application of the energy performance requirements. This shall include operational values, obtained from testing, measuring and verification of, for example, installed insulation material, air-tightness, and actual or metered energy consumption compared to asset ratings. Member States shall be required to put in place systems providing for sanctions for non-compliance. The results of the follow-up and control system shall be evaluated and reported regularly to the Commission in the national Energy Efficiency Action Plans. Certain quality criteria to ensure compliance, including improved ex post metering requirements shall be stipulated in the recast Directive.

Studies presented at the recent IEA Compliance Workshop show non-compliance for building codes to be between 20% and 50%21. ECOFYS VII material, together with sales data from the insulation manufacturers has been used to calculate both required U-values, optimal U-values as well as installed insulation material. This provides data on the differences between actual U-values, economically optimal U-values and required U-values. These calculations show that about 20% of the gap between thermal insulation requirements and the economic optimal level in the Member States for new buildings is due to non-compliance.

G. Sustainable buildings

The most important action that a recast EPBD can achieve for sustainable development is to be ambitious and to ensure all new build moves quickly to very low energy standards and that renovation activities are carried out at optimum levels.

Given the need to dramatically reduce greenhouse gas emissions in the EU, by definition a sustainable building must begin by being a very low energy building. With energy efficiency being able to deliver energy and greenhouse gas emission reductions whilst reducing costs and improving comfort for the building occupier, it is the key action that must be taken to make buildings sustainable.

Sustainability in buildings and construction of course does go beyond energy use as is recognised in a number of new EU initiatives, particularly sustainable consumption and production (SCP) The building blocks for SCP include inter alia the Thematic Strategy on Sustainable Use of Natural Resources, the Thematic Strategy on Waste Prevention and Recycling, Integrated Product Policy (IPP), the Eco-Management and Audit Scheme (EMAS), the Eco-labelling Scheme, the Environmental Technology Action Plan (ETAP), Green Public Procurement (GPP), the Eco-design of Energy Using Products Directive (EuP), the Lead Market Initiative on Sustainable Construction and the European Compliance Assistance Programme - Environment & SMEs to name a few.

Unfortunately, many of these initiatives are being carried out independently of one other and this is resulting in different concepts and definitions of sustainability. One body which has consistently provided a considerable amount of advanced and coherent work in the area of sustainable buildings and construction is the CEN Technical Committee (TC) 350. It has developed measurement tools and parameters for the environmental, economic and social impacts of buildings, distinguishing

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21 www.iea.org
between the product stage, the construction process stage, the use stage and the end of life (recycle and waste removal) stage. Much of this work is included in prEN 15643-1, prEN 15643-2, prEN 15643-3, and prEN 15643-4. There is a need in the recast Directive to ensure that this work is put forward as a key tool in measuring sustainability in buildings. It is also important that revisions in the Directive do not in any way conflict with any of the work in CEN TC 350. In fact, the Directive shall already make it clear that transposition and implementation of the recast EPBD in the Member States shall be preceded by sustainability impact assessments to avoid such conflicts. CEN TC 350 seems more and more to be a recognised focal point for the EU standardisation of sustainable buildings. An Article on sustainability is therefore proposed, along with a Recital outlining the Commission’s work in this area. References to the existing prEN 15643-1, 2, 3 and 4 shall also be included.

H. Improved energy performance certification of buildings

Energy performance certification will be more harmonised and up-graded to investment-grade energy audit level. Member States will ensure that their certificates are strengthened in order to promote the renovation process with well specified recommendations, as well as to provide cost-quantifiable criteria for financial incentives. Recommendations made in Energy Performance Certificates shall be made mandatory within a defined time frame provided they are clearly cost-effective in public buildings. In the private sector Member States shall ensure that advantageous financing is available.

Member states shall also prepare plans to ensure that all buildings in the building stock are certified by the end of a ten-year period beginning with the transposition date of the recast EPBD.

The certification of buildings as set out in Article 7 of the EPBD has been transposed in Member States in widely varying levels of quality. Both the quality of the certification system and the level of training required for those carrying out the certification (Article 10) vary widely. Both of these Articles need to be strengthened and made more precise. This is especially true of the recommendations provided by the certification process. These shall be of investment-grade audit quality, implying that the financial returns and investment requirements calculated for the proposed measures are sufficiently well grounded to allow them to be used by a bank or energy service company to grant financing or enter into a contract. In the case of the public sector, Member States shall ensure that those measures meeting cost-effectiveness criteria are carried out. And for clearly highly cost-effective measures in the private sector, up-front financing to implement these recommendations shall be made available. (See point I on financial incentives.) Member States shall also be required to develop databases for the results of the certificates, allowing them to track and influence progress in the energy performance of the building stock.

Energy Performance Certificates are key tools to ensure not only knowledge of the building stock, but also improvement of the energy efficiency of buildings. Presently, the objective of the recommendations indicated in the certificates is limited to the provision of information, but there is no obligation to implement these recommendations. Therefore, to take full advantage of the value of these certificates, it is critical to make the implementation of recommendations mandatory within a certain timeframe, under the condition that they are cost-effective.
The content of the energy performance certificate as well as the quality and training requirements can be specified more precisely in the recast EPBD by strengthening Articles 7 and 10 and by strengthening Article 2 (3), the definition of an energy performance certificate, as well as by adding a new definition for an independent expert. The latter would stipulate that the Member State set a required level of training and experience commensurate with the level of quality required for the certificate. Support for these measures, as well as cross references, are available in the Energy Services Directive, as well as in the Commission’s Energy Efficiency Action Plan.

Improved certification and more qualified certifiers are necessary because the building certification system is the most appropriate basis for selecting award criteria for energy efficiency improvement measures and for qualifying buildings for financial, tax and other incentives. In additional, the recommendations from the certification of a building, when calculated with cost-effectiveness criteria, are important in ensuring proper component replacement as well as in implementing additional obligations placed on the public sector. The Member States shall also be required to develop ways to spread the cost of the certificate and certification process among the users who benefit from certification. This will prevent the cost of quality certification from becoming a barrier. (N.B. The recently approved CEN informative standards for energy audits and certification can provide guidance for harmonising building certification quality somewhat more. More rigorous normative CEN standards for energy audits are under development for buildings and industry, and for which a mandate has been issued.)

I. Financial incentives

A new Article on financial instruments and incentives in the Member States shall be included in the recast EPBD. This would place an obligation on Member States to provide financial instruments and contract forms that facilitate the development of financial incentives for renovation requirements resulting from certification as well as provide incentives to provide new buildings with optimal and advanced energy performance solutions. This development can take place in both the public and private sectors.

Incentives for building owners to meet higher-than-minimum performance requirements in new and renovated buildings or to provide financing for highly cost-effective investments, including those deriving from the recommendations from the energy certification of buildings can be put forward in the recast EPBD as examples of successful incentives. This requires an improved certification system (mentioned above). An Annex shall be added to the recast Directive providing Member States with an indicative list of financial incentives. This non-binding list could include possible income tax credits, (as in France), differentiated property taxes, lower interest rates on mortgages for highly efficient retrofits, up-front financing guarantees through e.g. third-party financing, differentiated VAT etc.

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22 Effective 17 May 2008, Member States will be required to improve the conditions for third-party financing, energy performance contracting and other types of shared-savings contracts, as well as their availability..
Some guidance on the relative efficacy of the different incentive schemes may be provided by the quick study of successful and non-successful financial incentive systems in EU Member States that the EPBD Platform has been commissioned to carry out.

Although national financing and taxation are areas normally reserved for decision at Member-State level, some requirements at EU level are possible. An example of this is a requirement for Member States to provide specified and sectorial financial instruments. This has been done in Article 9 of the Energy Services Directive, where Member States are required to provide model contracts. Article 11 of the same Directive allows Member States to establish energy efficiency funds without prejudice to state aid rules.

J. Renewables in buildings

The present plans to include an Article in the recast EPBD that requires the installation of integrated renewables in new buildings shall be modified to ensure that the same cost effectiveness criteria apply to renewables as apply for energy efficiency measures. If renewables are less cost-effective, they may still be subsidised as part of a more long-term policy measure to introduce renewables. It is important in this context, however, to avoid cross-subsidies between energy efficiency and renewables. This will distort the market. Moreover, calculations shall be transparent and show clearly what the most cost-effective measures are, which are normally to first optimise the building envelope. From a cost and dimensioning point of view it is also more logical to invest in the building envelop first in order to facilitate and reduce the cost of the less cost-effective integrated renewables that are being promoted as part of a long-term strategy. Ensuring that the heating and cooling demand are first optimised will thus allow for a better economic starting point and better dimensioning for the inclusion of renewables. This cost-effectiveness calculation requirement will also be proposed as an amendment to the Article requiring the installation of integrated renewables in buildings in the new Renewables Directive proposal, currently under discussion in Council and the European Parliament.

K. Training and education

The revised EPBD will address the challenge of training and education in the building sector by placing a specific obligation on Member States to put in place the necessary support mechanisms and training and education programmes for the building chain, including for very low-energy or passive buildings. Some provision for EU-level support for this is foreseen in the Commission’s Energy Efficiency Action Plan. At Member State level, public-private partnerships involving industry shall also be promoted.

Although there is a strong political ambition to seize the huge cost-effective potential from buildings, it is the market that will need to deliver this potential. However, the extremely high level of SME actors and even micro-enterprises within the building sector makes the implementation of such developments a major challenge for the market. The current failure of the market to deliver highly cost-effective energy efficiency measures in buildings is a strong indication of the challenge and the need for significant government support to overcome the market failures.
L. Inspection of boilers and air-conditioning systems

Member States shall ensure that the results of the regular inspections of boilers and air-conditioning systems, as well as the one-off inspection for boilers older than 15 years, are compiled and included in a database by the appropriate local or national authority, and made available for the building certification when it is carried out.

A clear definition of an independent expert and the qualifications and certification requirements for such experts for the inspection of boilers and air-conditioning systems will be provided by the Member States.

In order to improve the efficacy of Articles 8 and 9 on the inspection of boilers and air-conditioning systems, respectively, it is necessary to specify more clearly in Article 10 ("Independent experts") the qualifications for such inspectors. This specification shall be based on the EPBD CEN standards dealing with these matters.