

# EPBD in clear territory

## Recast of building directive out of political turmoil



Dick Dolmans  
Secretary general ES-SO



**Summary**

In the European Union's Climate and Energy Package, buildings have a big task. As they now consume 40% of all primary energy, double-digit savings are expected from energy efficiency measures and smart, holistic building technologies. The article describes how the EPBD evolved over time and how the revision of it, referred to as 'Recast EPBD', was on its way to political deadlock before being saved by a surprisingly strong agreement under the bold leadership of then-EU President Sweden. The contribution of the solar shading industry to energy savings is highlighted and a recently developed calculation program to demonstrate this.

Energy saving has become a major political priority in the European Union. For a number of solid reasons: strategic (reducing our uneasy dependence on oil and gas from politically unstable regions), economic (lowering our production costs and helping our competitiveness), security (access to affordable energy for all) and last but not least environmental (reducing our carbon emissions and meeting our commitments under the Kyoto Protocol). Energy efficiency and increased production of renewable energy are emphatically up front in the list of policy measures. That message was easy to convey when the price of oil hit an all-time record of 147 dollar per barrel in July 2008. But then, in six months time, it nosedived to a three-year low of 47 in December of the same year, inevitably reducing somewhat the sense of urgency of the energy efficiency initiatives. Since then, the banking debacle and the worldwide recession could provide our politicians with plenty more reasons to backpedal on some of the much needed action plans. Witness the rather bumpy road of the EPBD.

**The history of the EPBD and its Recast**

The acronym EPBD, you may remember, stands for the Energy Performance of Buildings Directive, issued in December 2002. It demands that Member States set minimum requirements for the energy efficiency of new and refurbished buildings, ensure certification of this performance and require regular inspection of installations for heating and cooling. Renovation of buildings below 1000 sq m was



not in the scope of the Directive in 2002 – a missed opportunity as the renovation market is huge and offers a colossal savings potential. But issuing a Directive and getting tangible results in 27 countries are two very different things. A bit of history:

- January 2006: Agreed deadline for the implementation of the Directive in the Member States, but many of them announced a delay until 2009, for a rich variety of reasons.
- June 2007: Deadline for the Member States' first national energy efficiency action plan (NEEAP). Brussels is waiting anxiously for 27 copies.
- November 2008: Many Member States having failed to implement the legislation on time, the European Commission decides to propose a revised EPB directive (mostly referred to as 'Recast EPBD'), with the objective to clarify and strengthen its content and aims. The Commission's text as proposed to the European Parliament lists for the first time solar shading among the energy-influential techniques of a building's envelope. The Commission expects that the Recast will help reduce the EU's energy consumption by an extra 5 to 6%, over and above the initial EPBD's targets. In the Commission's proposal, the 1000 sq m threshold for refurbishment is removed completely. Which means that virtually every building, new or renovated, must comply. If the text is definitely adopted, that is.
- April 2009: the European Parliament, after having received hundreds of amendments to the text of the revised EPBD, many of them reinforcing its scope and tightening its time table, adopts the amended text with an overwhelming majority. A surprising, all-new amendment requires all new buildings to be net zero energy from 2019 onwards. The next step is for the text to be approved by the Council of Ministers before becoming law. A hurdle?
- July 2009: the specialized newsletters report that 'the list of concerns regarding the Recast of the EPBD expressed by the delegations of the Member States is growing longer'



and that a number of them have taken issue with the Parliament's April amendments, many of which they find 'overly ambitious and even unrealistic'. Therefore, said the July 8, 2009 issue of the Euractiv Newsletter 'speedy progress is not in sight'. The withdrawal of the 1000 sq m threshold is only one of the obstacles: some member states would like it lowered

or gradually withdrawn, not at once. In other words: the decisions of the Parliament are being criticized and renegotiated by the governments. Pessimism set in.

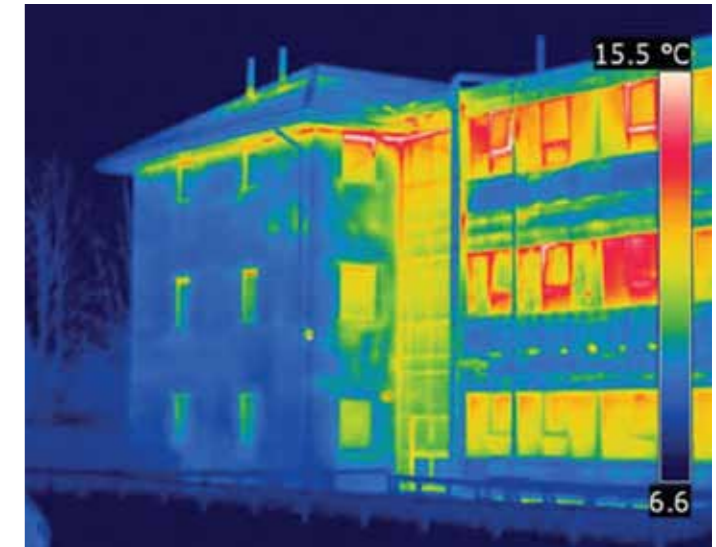
**'Green' reputation at stake - and saved**  
Sweden, fortunately, was Europe's rotating President for the second half of 2009. And an energetic one, at that! The Swedes had made it



known that they would spare no effort to reach a positive agreement prior to the December 7 meeting of the Council of Ministers of Energy. On that very same day - remember? -- the ill-fated United Nations Climate Change Conference (COP15) started in Copenhagen. It would have been very embarrassing for Europe to report a failure on such a reasonable, feasible, positive measure for the environment: making millions of buildings more energy-efficient. Europe is proud to be seen as the leading force on climate change and as the driver of international environmental cooperation. Says the website europa.eu: 'The EU intends to lead a new industrial revolution and create a high efficiency energy economy with low CO2 emissions'. The European Union is already the major source of environmental legislation. Noblesse oblige!

And so it happened that on November 17, 2009 an excellent political agreement was reached between the three parties involved: the European Parliament, the Commission and the Council (the 'trilogue'). The long-awaited compromise will have far reaching effects. First, the 1000 m<sup>2</sup> threshold for refurbishment is removed so that virtually all renovations will be covered by the new, stricter rules. Second, best rated components matching best cost-optimal standards must be installed in refurbishment projects. Further, all building codes must include a 'procedure leading to 'nearly zero energy buildings' by the end of 2020 (2018 for public buildings), while the energy certificates must be displayed in all buildings - and not just the public ones. These are, arguably, the major items of the new agreement. Especially the removal of the minimum floor surface for refurbishment should be opening a very big market for energy-efficiency measures in existing buildings. Europe has 190 million buildings and many of them are in dire need for renovation. So let us now boldly assume that the trilogue agreement of the Recast EPBD will be rubberstamped unchanged by the new European Parliament sometime this spring, then accepted by the Council, published to become law and converted into 27 national law systems.

**The role of solar shading**  
EPBD is about the energy behavior of buildings. Efforts to save energy in buildings should first and foremost concentrate on the building's skin: that's where the energy is lost - or gained. Infrared thermographic pictures show the heat loss through the windows.



**The image shows heat loss from the old part of the building (right) with the new building (left) having much better levels of insulation. Source: <http://www.pixelthermographics.co.uk>**

But concern for summer comfort, now a common worry, is about heat gain. Too much sun in summer will lead to overheating and must be avoided. Conversely, in the heating season the sun's free energy is very welcome. The best solution is to equip windows with a dynamic solar shading device, which stops the heat in summer and lets the energy in when winter strikes.

The text of the Recast EPBD does seem to recognize that. In Recital 9 we read:  
**The energy performance of buildings should be calculated on the basis of a methodology, which may be differentiated at national and regional level and that includes, in addition to thermal characteristics, other factors that play an increasingly important role, such as heating and air-conditioning installations, application of renewable energy sources, passive heating and cooling elements, shading, indoor air quality, adequate natural light and design of the building.**  
Again, in Recital 19:  
**Priority should be given to strategies which enhance the thermic performance of buildings during the summer period. To that end, there should be focus on measures which avoid overheating, such as shading and sufficient thermal capacity in the building construction, and further development and application of passive cooling techniques, primarily those that improve indoor climatic conditions and the micro-climate around buildings.**

So, clearly, shading is taken into consideration. It should be considered as an integral part of the building services, not as a part of the finishes or as a pleasant accessory.

**Energy Savings? But how much?**  
Europe has set ambitious goals for the reduction of green house gas emissions. That means that every claim of energy savings meets with the immediate question 'how much?' In principle, this is not a problem. Building physicists have all the tools for quantifying the effect of solar shading. They have reputable building simulation programs at their disposal. But how often are building physicists solicited for this type of calculation in the early design stage? How often is solar shading, internal or external, chosen not only on the basis of aesthetics but also for demonstrable energy considerations? A building physics study is frequently looked at as a tedious, expensive exercise, needed only for big projects. However, it is both useful and possible also for smaller jobs. The British Blind & Shutter Association BBSA, with the support of ES-SO, the European umbrella organization of the solar shading

industry, has developed the Shade Specifier Data Base. For calculations it is essential that the correct product data are used and that these are interpreted in the right way. The BBSA Shade Specifier illustrates the cost benefits and energy savings of correctly specified solar shading. The input -- all the product data of fabrics and blind slats -- is the result of extensive standardized tests that are also used by the glazing industry (EN410). The output shows the effect of the combination of glazing and shading. The calculation conforms with both European and ASHRAE standards. All product data submitted by the manufacturers are critically reviewed by a peer group.

If the Recast EPBD opens new markets for the blind and shutter industry - and it should, judging from the incentives the renovation market will receive -- tools like the Shade Specifier will be an indispensable part of the success. It is an accessible program with an easily understood message and a great impact on the correct assessment of the effects of shading on energy use in buildings.

