



LEONARDO DA VINCI PROJECT THERMOVALORISATIONS

Towards an European EPD + IR ?

State of the art...

According to the EPBD 2002/91/EC and Intelligent Energy Europe IEE/CA/07/333 (end of 2010)

	Flemish Belgium	Bulgaria	Finland	France
Certification	<p>Requirements and certification for new buildings since January 2006, certification of existing residential buildings for sale since November 2008 (for rent since 2009), certification of public buildings since January 2009.</p>	<p>Energy Efficiency Act, November 2008. Energy passports of buildings following the BDS EN 15217 and BDS EN ISO 13790.</p>	<p>Based on laws and decrees published in 2007. As of January 2009, all existing buildings must be certified when sold or rented.</p>	<p>Certification of buildings since the 13th of July 2005</p>

<p>The Energy Performance Certificate EPC</p>	<p>EPC defines the energy score, the calculated <u>primary energy</u> use in kWh/m² per year with a colour bar who shows the energy impact of the building from green (energy friendly) to the red zone (not energy friendly).</p>	<p>Two values : EP_{max,r} (total specific <u>primary energy</u> consumption for heating, cooling, ventilation, hot water and lighting corresponding to the norms) and EP_{max,s} (total specific <u>primary energy</u> consumption for heating, cooling, ventilation, hot water and lighting, when the building came into use). The energy passport is required for a new building and the energy certificate is required for existing buildings.</p>	<p>The energy label classifies buildings on a efficiency scale, <u>final energy</u> demand of the building per m² and year.</p>	<p>EPC defines the 2 aspects of a building : -Energy consumption (<u>primary energy</u>) of the dwelling or building, -Impact of this consumption on greenhouse effect. We obtain the calculated or measured consumption of heating, cooling and domestic hot water, expressed in final and primary energy, and the corresponding annual costs.</p>
<p>Quality Assurance QA</p>	<p>Accreditation of the experts, strict audit protocol, automatic software.</p>	<p>Independent experts, training procedure and quality control system.</p>	<p>The quality control procedure is not yet regulated by legislation.</p>	<p>Cofrac (French committee of accreditation) ▶ Certifying body ▶ Experts</p>
<p>National information and communication campaigns</p>	<p>VEA's (Flemish Energy Agency) www.energiesparen.be provides detailed information about Energy Performance requirements and certification system for professionals and also for the general public.</p>	<p>Campaign "Less energy more light" in 2009.</p>	<p>An information campaign was launched at the beginning April 2008. See www.ymparisto.fi</p>	<p>Need of informing citizens on certification : 2 guidebooks for experts: "On-site inspection guide" and "Recommendations" And also www.energies-avenir.fr</p>

<p>National incentives and subsidies</p>	<p>Tax reduction on national level, for new and existing buildings. The distribution network managers have the obligation to give subsidies to consumers investing in energy savings.</p>	<p>Exemption from property taxes for owners of buildings having category A and B certificates, as per EE law. Programmes for energy efficiency audits. EBRD Credit line for energy efficiency in households, Operational Programme “Regional Development”.</p>	<p>Subsidy for housing companies. Subsidy offsetting material costs for low income households. Tax reduction for households purchasing services. Subsidy for installing renewable energy sources.</p>	<p>Fiscal benefits were set up in 2005 to encourage people to build and renovate buildings, which take the environment and energy saving into account (tax credit, zero percent eco-loan, tax reduced for energy renovation, white certificates scheme).</p>
<p>Impact of EPBD at national level</p>	<p>Even when the new building become more efficient on average, there is still a huge potential for improvement.</p>	<p>Evolution of minimum performance requirements in the building regulation. National information system for energy efficiency.</p>	<p>Development of minimum requirements in building regulations.</p>	<p>The creation of EPC brought a step change to the market and created improved awareness of energy efficiency in the population.</p>
<p>Thermal regulation</p>	<p>The need of improvements : At midterm, one single method that can be used for both new and existing buildings. The user-friendliness of software for new buildings. Central examination of the quality of the experts. The reinforcement of the QA scheme. An improvement of the energy performance database.</p>	<p>See www.mrrb.government.bg</p> <p>The key elements of the draft energy efficiency strategy are :</p> <ul style="list-style-type: none"> -new buildings : gradual implementation of norms for lower energy consumption after 2015 -existing buildings : establishment of low interest loans, connection of the local taxation with the building’s energy performance characteristics 	<p>The major challenge is to prepare operators in the sector for the change due in 2012 (the building code will take into account of the energy source).</p>	<p>Minimum requirements came into force for new buildings existing since the 24th May 2006. Requirements for existing buildings has been introduced the 1st November 2007.</p>

Exemple maximum Coefficient U walls (W/m2K)	0.40 in 2010/2011	0.35 in 2009	0.17 in 2010	R= 2 m2K/W id est ≅ 0.50 W/m2K Umax = 0.45 W/m2K (RT 2012)
Future planning	EPD + IR camera is not yet a standardized test.	EPD + IR camera is not yet a standardized test.	EPD + IR camera is not yet a standardized test.	EPD + IR camera is not yet a standardized test.

In a EPD, The impact of the behaviour of the inhabitants is not taken into account.