

SYNTHESIS REPORT ON BARRIERS AND GOOD PRACTICE EXAMPLES



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- ❖ **Although the EPBD allows for quite some freedom in national requirements and even though the boundary conditions may differ a lot from country to country, in practice it is proving that most countries are experiencing similar challenges in implementation.**

- ❖ **The results shown here are a summary compilation of (technical) issues that raised as barriers during early implementation of the EPBD, as reported by experts of the countries participating in ASIEPI. The results are preliminary and based on draft reportings.**



- ❖ certify the building as a whole: 4 countries
- ❖ certify each individual flat separately: 2 countries
- ❖ both options possible, f.e.:
 - the building certificate may have additional pages for the individual apartment;
 - the building certificate may be obligatory but the owner has the possibility to issue additionally a certificate for the individual apartment;
 - either the building as a whole or the individual apartments can be certified;
 - when the systems are collective, certification is per building, while in case of individual systems, certification is valid only per individual apartment.
- ❖ **General conclusion: in case of whole building assessment and collective systems, the calculation of the individual apartment is based on total real consumption in proportion to repartition rates of the apartment, which therefore cannot represent actual performance of the apartment.**



- ❖ **Control systems accounted for in national calculation procedures vary and could be:**
 - Lighting (day- or artificial);
 - Heating (thermostatic valves, pumps, night set back, week-end interruption, manual control);
 - Ventilation (occupancy based, CO₂, hybrid);
 - Cooling;
 - Humidity.
- ❖ **The way such controls are taken into consideration is mostly by default coefficients and (control and/or utilisation) efficiency of the system.**
- ❖ **In some countries the principle of equivalence can be used to evaluate the performance of control systems.**
- ❖ **Control systems which are manually steered, are not always taken into account, as in some countries the human behaviour is considered too difficult to estimate.**



- ❖ **Some, especially new, technologies are under discussion:**
 - how to calculate preheating from earth channels with heat pumps;
 - how to calculate the efficiency of the air-to-air heat pumps in relation to the actual outside air-temperature;
 - whether heat recovery for ventilation efficiencies reached under test conditions will also occur in practice;
 - whether balanced ventilation is safe in terms of presumed health risks;

- ❖ **Some countries deal with such matters through the development of standardised calculations and occupants' behaviour methodologies. It means that average values of efficiencies of the appliances are entered into the calculation.**



❖ **A number of countries is arguing the indoor quality in relation to some newly introduced concepts of energy efficiency like:**

- air-tightness
- mechanical ventilation with heat recovery
- balanced ventilation

❖ **Despite of this arguing, such technologies are gaining lot of ground**

❖ **Countries in warmer climates claim that air tightness and mechanical ventilation (with heat recovery) are not (yet) quite common. Mechanical ventilation is required only if natural ventilation is not sufficient.**



- ❖ Countries normally follow their own specific legal framework, certified methodologies and laboratories when determining the technical efficiency and energy performance of a new concept.
- ❖ Most countries accept CE/EN certified systems, technologies and test methods.
- ❖ At least two of the questioned countries accept the data of any certified European quality control institute or laboratory without additional measurements.
- ❖ However, in certain cases, additional procedures may be necessary to adapt assumptions that reflect very specific local conditions.



- ❖ **Properly designed systems are not always functioning properly in practice**
 - Recent initiatives are under development to formulate criteria for guaranteeing the performance of the total system/building in practice.
- ❖ **Big discrepancies also known among asset and operational rating**
 - A small percentage of countries aims to reduce the problem by introducing actual energy consumption against design consumption.
- ❖ **8 out of 12 countries do not have rules to adjust such discrepancies**
- ❖ **Normally it is the building/system designer who is responsible during design, installation or construction and the energy expert during the assessment**
- ❖ **Good approach is commissioning:**
 - ❖ after construction,
 - ❖ after installation of a new system,
 - ❖ when the building use is changed and
 - ❖ after some years of use.
- ❖ **The ideal situation is continuous commissioning by long-term monitoring and evaluation.**



❖ **In at least 8 countries, conflicting national regulations prohibit specific energy efficient measures from being uptaken, like f.e.:**

- Biomass burners not allowed by safety law
- Additional external insulation in conflict with building regulations
- Certain units (f.e. ventilation), systems (burners, heating) or materials (wood on facades) in conflict with the national fire safety regulations in buildings.

❖ **The conflict re external insulation appears in 5 of the questioned countries. In some cases, urban rules are being revised to favour energy performance, providing for example the possibility to increase the ratio of land built subjected to energy performance requirements.**

❖ **An interesting approach in case of adoption of external insulation is the exception to the minimum distance to land border if the building presents a U value lower than 10% than what is foreseen by national requirements; a bonus (an average of 10%) in terms of authorized volume for buildings with high energy performance.**



Current EPBD regulations may unintentionally give the impression that summer cooling is required.

Many countries choose alternative cooling and good building design above air-conditioning systems, however, detailed restrictions in regulation (f.e. system efficiencies during peak and part loads) are not always in place.

Some interesting approaches/exemptions are:

- limiting g_c values
- introducing maximum solar gain factors
- no allowance for mechanical cooling in the kWh/m²a limit for buildings with low internal gains
- allowing same space for consumption, whether there is an air-conditioning system or not
- prescribing very low set-point room temperatures, if mechanical cooling is to be installed
- expand the EP calculation to include energy use for summer comfort.



- ❖ **It is clear that the list of issues that have risen during the first stages of implementation of the EPBD is not limitative.**
- ❖ **Several countries are facing similar problems with implementation so that through good information exchange, countries can profit from one another to not reinvent the wheel while seeking for solutions to such problems.**



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