ENERGY PERFORMANCE OF BUILDINGS DIRECTIVE
In this Session

• The Energy Performance of Buildings Directive
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• Definitions
• Implementation in England and Wales
• Intended to lead to substantial increases in investments in energy efficiency measures
  – Implementation started in January 2006
  – EPBD Recast published May 2010
• Improving standards for new buildings
• Requiring higher standards for large existing buildings
• Includes mandatory energy certification of buildings
• Regular inspections of boilers and air conditioning systems

www.cibse.org/briefings
Actual European Directive published in December 2002
revisions published May 2010

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• Transposition process

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Article 28 - Transposition

Governments must transpose different Articles by different dates

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EPBD Requirements

Member States shall apply a methodology, at national or regional level, of calculation of the energy performance of buildings on the basis of the general framework set out in the Annex.

This methodology shall be set at national or regional level.

- The energy performance of a building shall be expressed in a transparent manner and may include a CO2 emission indicator.
• New dwellings – SAP2009
• Existing dwellings – RDSAP and/or SAP2009
  – www.bre.co.uk/sap2009
• Buildings other than dwellings – SBEM
  – www.ncm.bre.co.uk
• Regulation 17A of the Building Regulations implements Article 3 for new and existing buildings

Detail in session 3
Article 4 - Building Performance Standards

Minimum energy performance requirements must be based on the calculation methodology, and be cost-optimal.

These must be reviewed at least every five years, and updated accordingly.

They must cover buildings, building units and elements within the building envelope.

In the England these are implemented through the Building Regulations. Building Regulations are a devolved responsibility in Wales, Scotland and Northern Ireland.
Article 6 – New Buildings

All new buildings must meet the agreed minimum energy performance requirements. Governments must ensure that, before construction starts, formal consideration is given the following alternative systems for heating:

- Decentralised energy supply systems based upon renewable energy
- CHP
- District or block heating or cooling
- Heat pumps

Such systems should consider technical, environmental and economic feasibility. All analyses should be documented and verifiable.

Implemented by Regulation 17C & 25A
Article 7 – Existing Buildings

Member States shall take the necessary measures to ensure that when buildings undergo renovation, their energy performance is upgraded in order to meet minimum requirements in so far as this is technically, functionally and economically feasible.

Member States shall derive these minimum energy performance requirements on the basis of the energy performance requirements set for buildings in accordance with Article 4, and they must encourage the consideration of alternative systems for heating, as listed under Article 6.

There is no longer a 1000m2 floor area threshold applied to renovation.
Article 8 – Technical Building Systems

Member States must set system requirements for the new, replacement and upgrading of technical building systems installed in existing buildings.

This covers inter alia heating, hot-water, air-conditioning and large ventilation systems, and any combination of such systems.

Encouragement for intelligent metering systems - in accord with Annex 1.2 of the Energy End-use & Energy Services Directive (COM 2006/32) - is required, as it is for automation control and monitoring systems.
Article 11 & 12 - Energy Performance Certificates

Member States shall ensure that, when buildings are **constructed, sold or rented out**, an **Energy Performance Certificate** is made available to the owner or by the owner to the prospective buyer or tenant, as the case might be.

The certificate must include recommendations for cost-optimal improvements relevant to the building. It must include details of renovation measures needed, including specific building elements and technical building systems.

It must include information as to the necessary steps taken to implement the recommendations and guidance on where more detailed information can be obtained. Cost evaluation must include an assessment of energy savings and underlying energy prices, together with a preliminary price forecast.
Article 11 & 12 - Energy Performance Certificates
Energy Performance Certificates:

- Certification on construction, sale or rent
- Certificates valid for 10 years
- Energy performance certificate must include reference values e.g. benchmarks
- Cost effective measures to improve energy performance should be included
- Objective of the certificate is limited to the provision of information
- All advertisements carried in commercial media concerning a building or part of it offered for sale or lease must state the energy performance from the certificate (or indicator if under construction)
Energy Performance Certificates:

- Limited number of exemptions, including:
  - Places of worship,
  - Buildings with low energy demands, and
  - Temporary buildings with a planned use of two years or less
Article 13 – Display of Energy Performance Certificates

Any buildings with a useful floor area over 500m² occupied by a public authority, and frequently visited by the public, must have its’ energy performance certificate displayed in a prominent place clearly visible to the public. The threshold will drop to 250 m² from 9 July 2015.

*In England this is the Display Energy Certificate (DEC)*

Once an energy performance certificate has been issued relating to any other building with a useful floor area over 500 m², that energy Performance certificate must be displayed in a prominent place clearly visible to the public - if that building is frequently visited by the public

*In England this is the Energy Performance Certificate (EPC)*
Article 11 & 12 - Energy Performance Certificates

For buildings occupied by a public authority / institution
Display Energy Certificates:

- Only applicable to publicly owned and accessed buildings
  - Objective is to highlight performance of building to the public

- Applicable where buildings is > 500m² and occupant is either:
  - A public authority (Government or Agency)
  - An institution which provides public services
Article 17 – Independent experts

- To be “carried out in an independent manner by qualified and/or accredited experts ...”
- Experts must be a member of an approved accreditation scheme
Article 18 – Independent control systems

Each year, these regulators must make a random and statistically significant selection from the energy performance certificates issued. Each certificate selected should then be verified.

This procedure must cover checking:
- that the input data for the building is accurate
- that the energy performance certificate, including the consequent recommendations, reflect the input data
- where possible, with an on-site visit to the building to establish consistency between the specifications provided in the certificate and the building itself

Similarly, a random and statistically significant selection of all the Inspection reports issued annually must be subjected to verification.
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Detail in session 9