After the recast – EU policies for sustainable buildings

REHVA seminar
Brussels, 28th October 2010

Michaela Holl, DG ENER C4

Directorate-General for Energy

EUROPEAN COMMISSION

AGENDA

- The recast **Directive on Energy Performance of Buildings** (EPBD), the main legislative tool at EU level

- Other ongoing initiatives in the building area

- Key ongoing follow- up work to the EPBD Directive: Development of **framework methodology for cost optimality**

Directorate-General for Energy

EUROPEAN COMMISSION

The new EU Directive for energy efficiency in buildings (2010/31/EU)

Directorate-General for Energy

EUROPEAN COMMISSION

The EPBD recast

- Recast of original Directive 2002/91/EC 2002/91/EC endorsed by Council in April and EP plenary on 19th May
- Publication in Official Journal June 2010
- Implementation by MS two years after entry into force (second half of 2012)
- Follow-up work:
  - cost-optimal comparative framework methodology
  - new mandate to CEN/CENELEC on the revision of the current set of standards
  - voluntary EU labelling scheme for the non-residential sector

Directorate-General for Energy

EUROPEAN COMMISSION

EPBD requirements

- **Offers holistic approach towards more energy efficient buildings**

- **Member States to fix and implement:**
  - **A methodology to calculate and rate the energy performance**
  - **Minimum energy performance requirements for new and for existing buildings that undergo major renovation**
  - **Energy performance certificates**
  - **Regular inspections of heating and air-conditioning systems**

Directorate-General for Energy

EUROPEAN COMMISSION

EPBD – Energy Performance Certificate

Example for Member States' room for manoeuvre:

Energy Performance of Buildings Directive – recast (1)

a) **Directive covers now all buildings irrespective of size**

b) **All new build "nearly zero energy buildings" as of end of 2020 (public sector: end of 2018). Remaining energy need mainly covered by RES**

c) **Minimum energy performance requirements for all existing buildings that undergo any energy relevant renovation (for major renovations at buildings level, but also at system level for replacement, retrofitting and substitution of parts of the building envelope)**

d) **Level of minimum energy performance requirements for new buildings (until 2020) and renovations: Benchmarking to achieve cost-optimal levels**

Energy Performance of Buildings Directive – recast (2)

e) <u>Display</u> of Energy Performance Certificates in public buildings

(decrease of threshold to 500 m^2 and 250 m^2 after 5 years)

e) Strengthening the role and the quality of <u>energy performance certificates</u> – i.a. by quality checks and obligatory use of the performance indicator in all advertisements for sale or rent

f) Strengthening the <u>role and the quality of HVAC inspections</u>

g) Stimulating financing mechanisms for energy efficiency investments in the building sector

h) Exemplary role of public authorities

Support with implementation

- (1) **Intelligent Energy Europe Programme** (SAVE)
  (2) European Commission's information service
  "**BUILD-UP Initiative**" (www.buildup.eu)
  (3) Holistic set of European Standards on energy performance of buildings and their components (**CEN standards**)

Directorate-General for Energy

EUROPEAN COMMISSION

Also ongoing….

Directorate-General for Energy

EUROPEAN COMMISSION

Also ongoing

- EU-Commission is checking transposition of Art 7-9 **2002/91/EC in den MS**
- SBN **Sustainable Building Network** (G8 IPPEC) – EU as active member, in particular on work on nearly zero energy buildings. Also co-operations with China, US, Russia on buildings
- Commission will start establishing the new **Financial Facility** after agreement was reached **on** the Amendment to the Regulation on the EERP- **146 million Euros for EE/RES.**

In preparation: **Smart Cities, Energy Strategy, Energy Efficiency Plan** *Key date*: 4th February 2011: special EU summit on energy issues

DG ENV voluntary **Eco label for buildings** (2011)

Directorate-General for Energy

EUROPEAN COMMISSION

The EU methodology framework on cost-optimality in support of the EPBD

Directorate-General for Energy

EUROPEAN COMMISSION

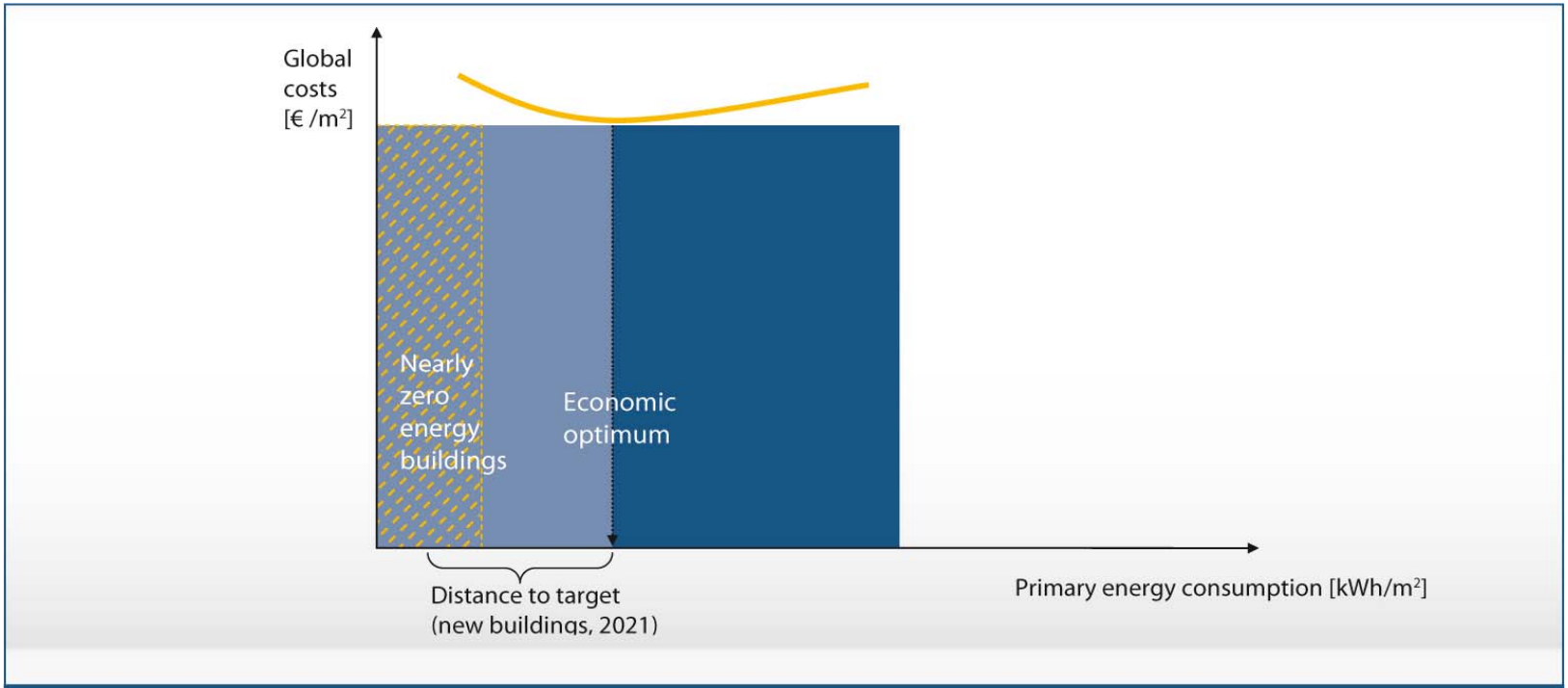
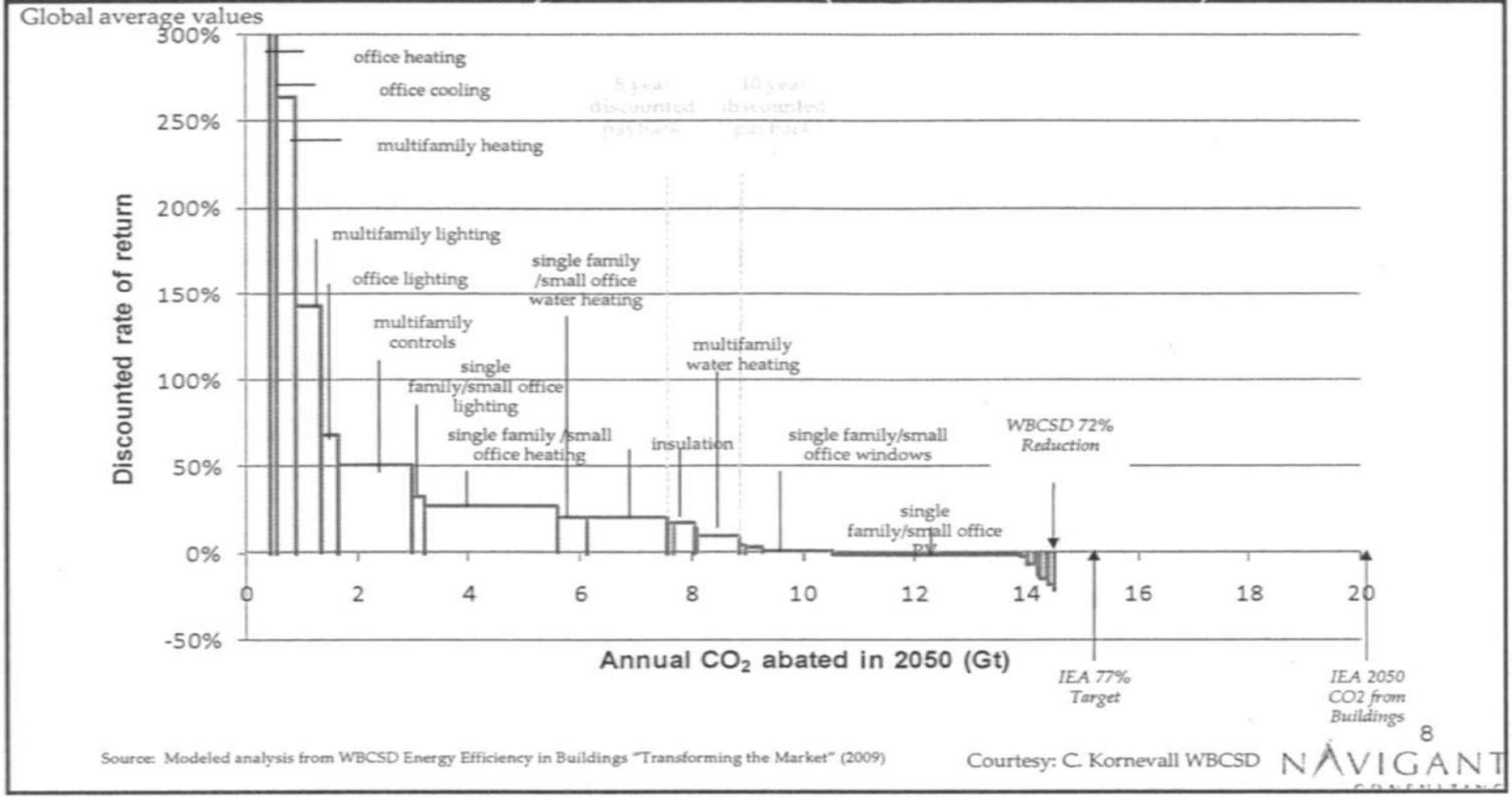


Figure 4: Beneficial areas in relation to cost optimum and distance to target (example only)

Source BPIE 2010

Directorate-General for Energy and Transport

Efficiency in buildings is the largest and net-cheapest abatement option: IRR vs. CO_2 abatement (source: WBCSD)



Source: Modeled analysis from WBCSD Energy Efficiency in Buildings "Transforming the Market" (2009)

Courtesy: C. Kornevall WBCSD

8

NAVIGANT CONSULTING

Directorate-General for Energy

The CO framework

- To be presented by the Commission by 30 June 2011
- Will be the basic framework on which MS develop and use as basis, then the comparative benchmark for their national methodologies on setting minimum requirements
- Commission will give a framework on calculating energy performance (based on or equivalent to CEN standards) and for cost calculation (based on net present value in EN 15459)
- Member States complete framework with national parameters (discount rate, labour cost, energy price etc.) and apply packages of energy efficiency measures to reference buildings
- MS report their calculations plus input data to Commission
- MS compare result of calculations with current requirements and adjust their building codes

Directorate-General for Energy

EUROPEAN COMMISSION

The CO framework

- Steps:
  - **1. Selection of reference buildings/systems**
  - **2. Establishment of sets of energy efficiency measures**
  - **3. calculation of the energy performance**
  - **4. calculation of the life cycle costs using net present valuation**

  result: Cost optimal set of measures for optimising energy performance of a reference building in a given MS, in kWh/(m² ,a)
  - **5. Report to Commission on calculations and input data used**
  - **6. Comparison of results with current building codes**

  →if need be adjustment !

Directorate-General for Energy

EUROPEAN COMMISSION

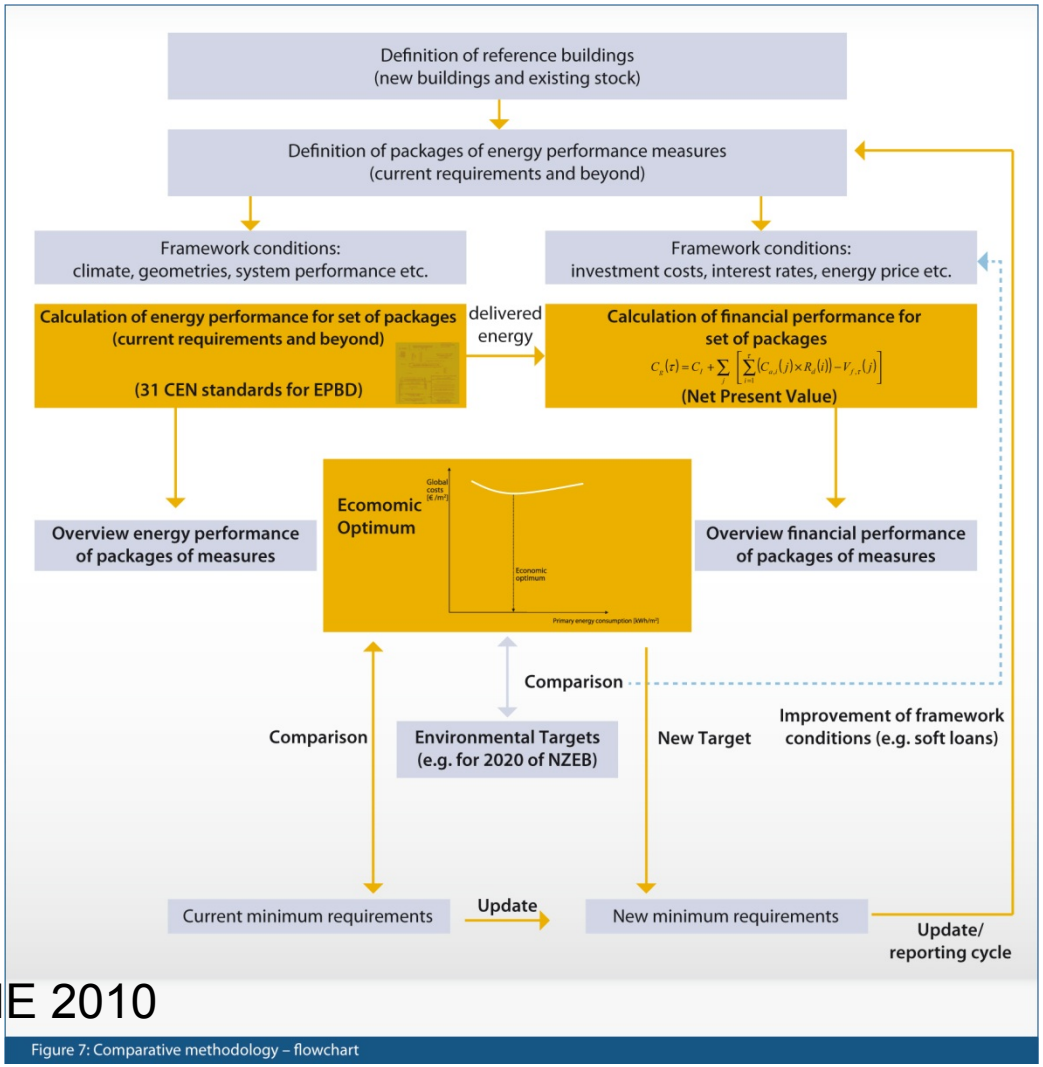


Figure 7: Comparative methodology – flowchart

Source BPIE 2010

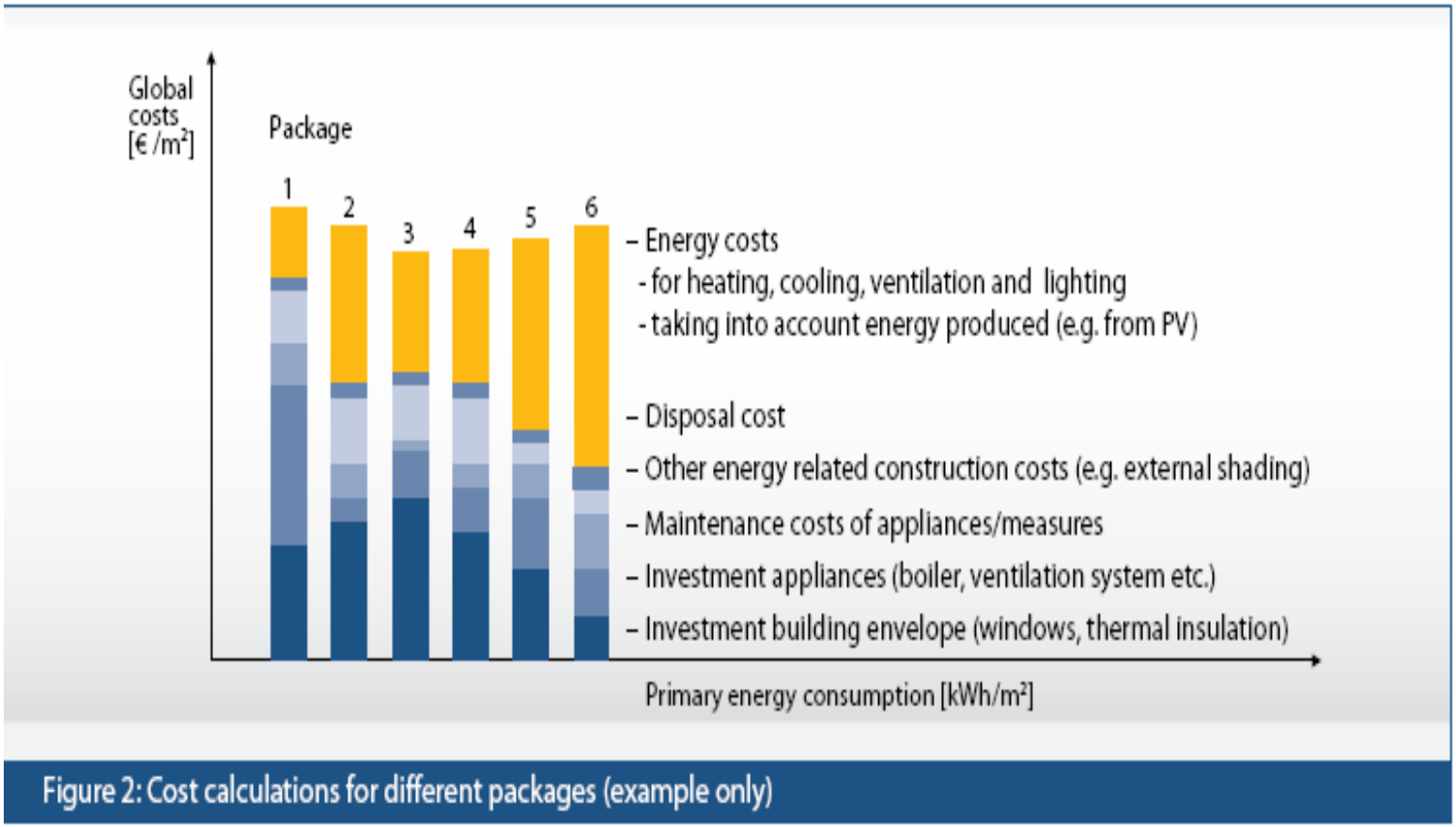


Figure 2: Cost calculations for different packages (example only)

Source: BPIE 2010

Cost optimal levels at system level

- In 2002/91/EC: no requirement on technical building systems and lighting systems.
- 2010/31/EU, Art.8: MS shall set system requirements the proper installation, and the appropriate dimensioning, adjustment and control of the technical building system
- Challenge: Many MS have requirements for heating/hot water/AC, but mostly covering only parts. Picture is worse on lighting where only a few MS set requirements and if so only on illumination level or provision of low energy bulbs. But levels are not set according to cost effectiveness in many cases, rather based on experts view.
- Need to link with Boiler efficiency Directive/soon Eco-design and energy labelling requirements (IM on air conditioning/ventilation, boilers, water heaters in the pipeline)

Directorate-General for Energy

EUROPEAN COMMISSION