



Institut de Recerca en Energia de Catalunya
Catalonia Institute for Energy Research



Sustentabilidade e o Edifício de Balanço Quase Zero
NZEB: a experiência na Catalunya
Coimbra, December 7, 2011

Eduard Cubí
Thermal Energy and Building Performance Group - IREC

Contents

1. Definition of NZEB in Spain
2. Impact and challenges for the industry
3. NZEB experiences in Catalunya and Spain

1. Definition of NZEB in Spain

(Catalunya MUST meet the Spanish building code, and can ADD further requirements)

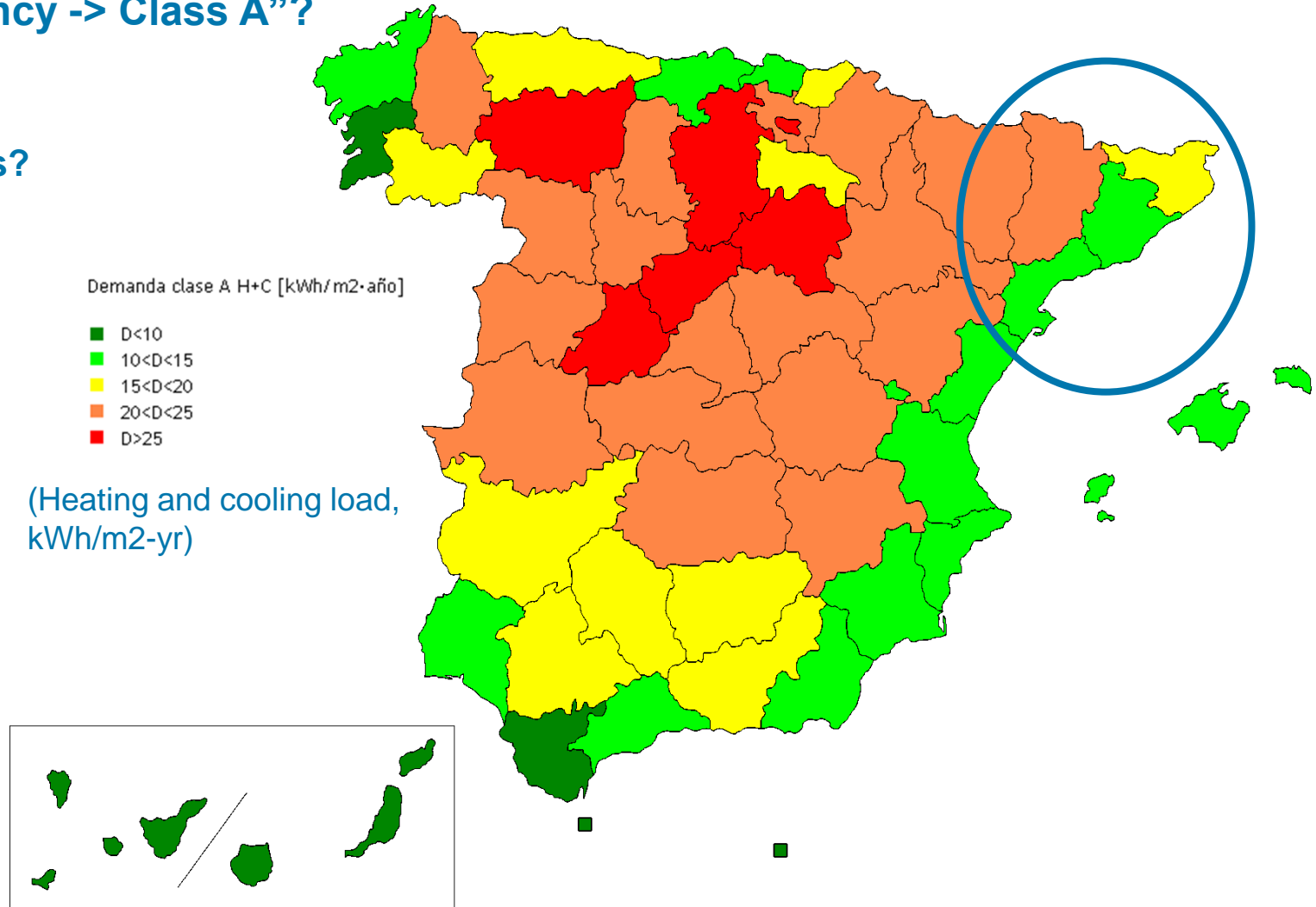
Revisión de la DIRECTIVA 2002/91/CE - DIRECTIVA 2010/31/UE

- Endurecimiento de los requisitos de eficiencia energética en los edificios.
- Revisión de normativa española **More stringent building codes.**
How much more stringent? Envelope? Equipment? Load? Energy use?
- Todos los edificios nuevos serán de alta calificación energética – posible revisión de la escala.
New buildings – higher certification levels
(Energy certificates are based on CO₂, not on energy use)
- Los edificios existentes son el gran nicho consumidor de energía en el sector edificación. La Directiva indica que podrán establecerse requisitos a los mismos cuando se rehabiliten.
- Además los edificios rehabilitados deberán de cumplir los requisitos para nuevos cuando sufran una **reforma importante** (reforma con un presupuesto superior al 25% del valor del edificio, sin contar valor del terreno sobre el que esta construido o reforma en la que se renueva más del 25% de los elementos de la envolvente del edificio).
Emphasis on existing buildings
(there will not be new construction for some years)

“High efficiency -> Class A”?

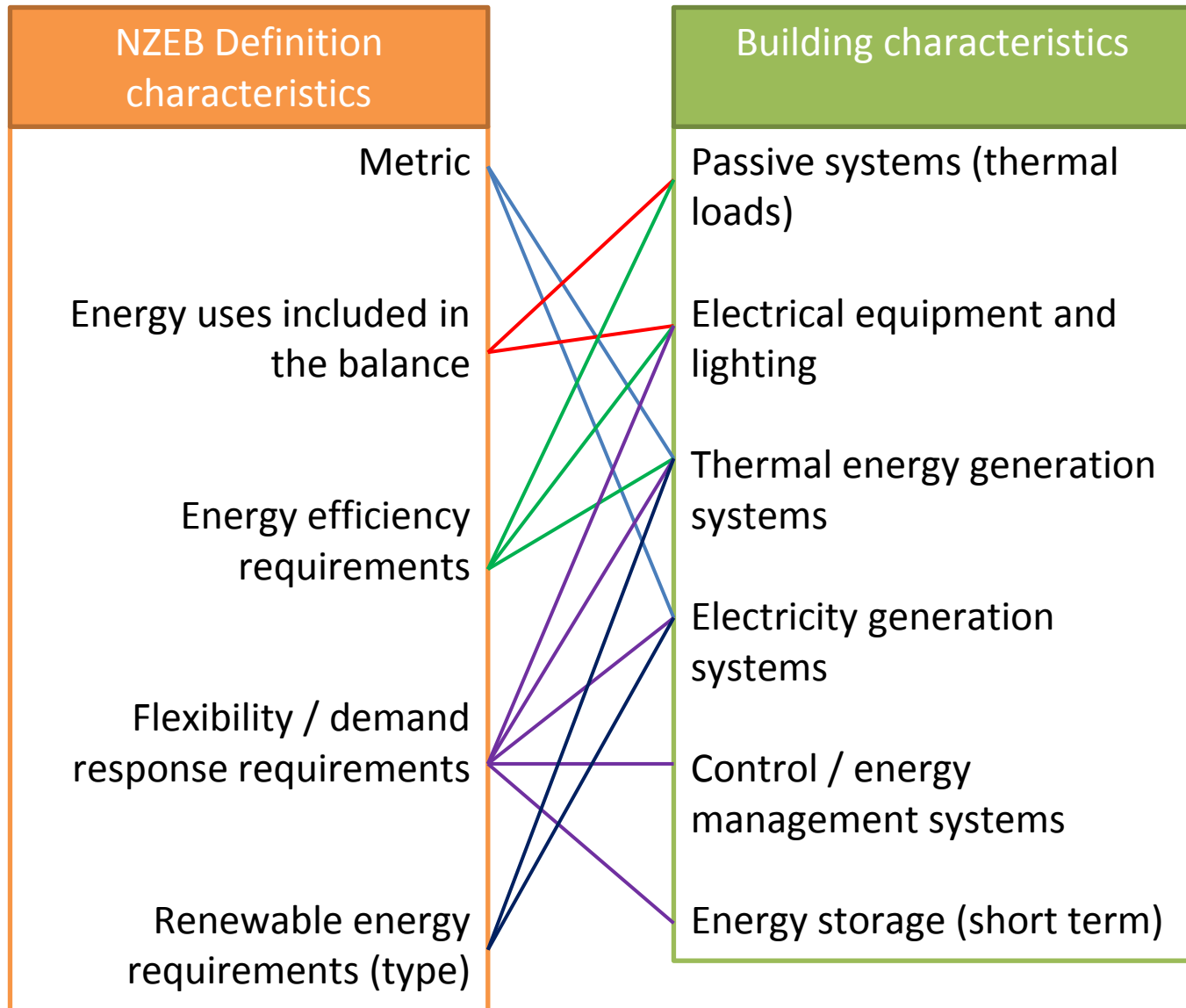
Load?
Energy use?
CO₂ emissions?

Residential?
Commercial?

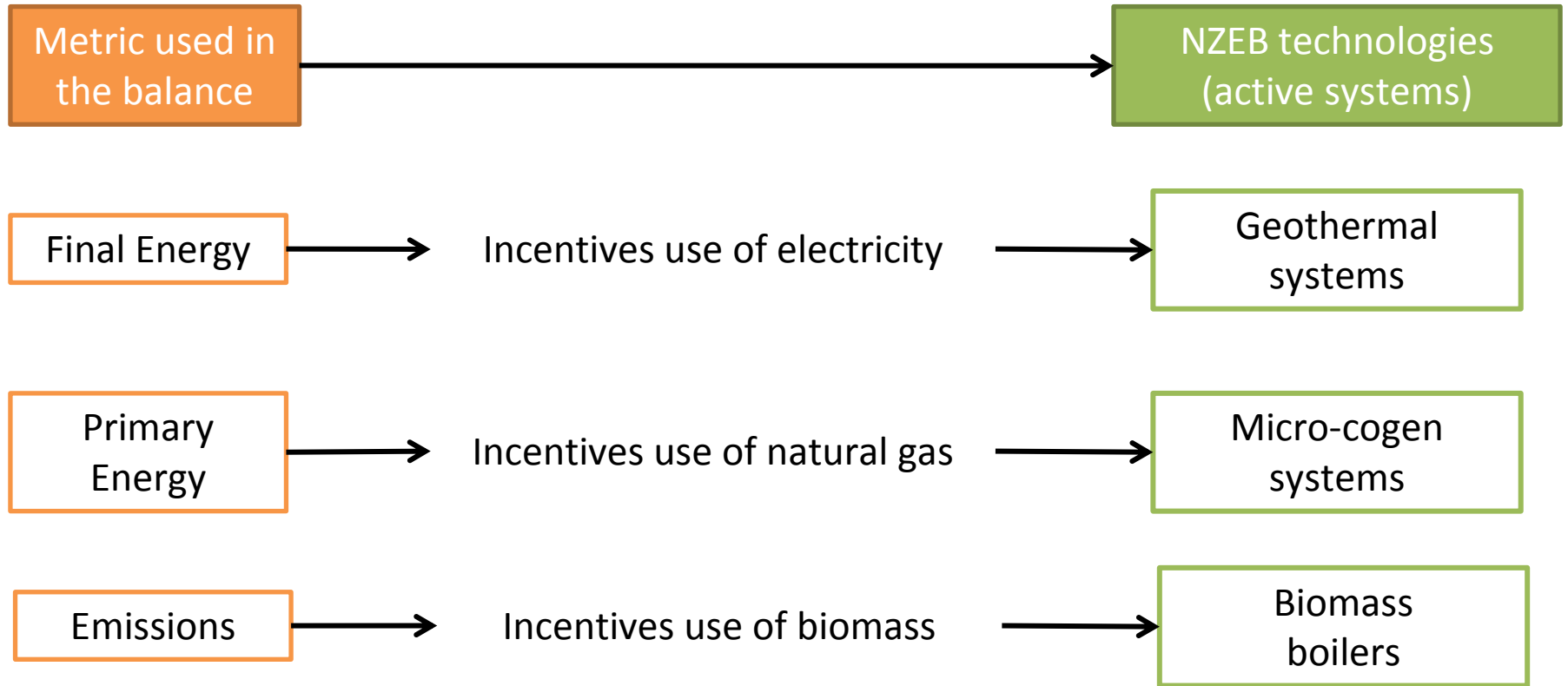


2. Challenges

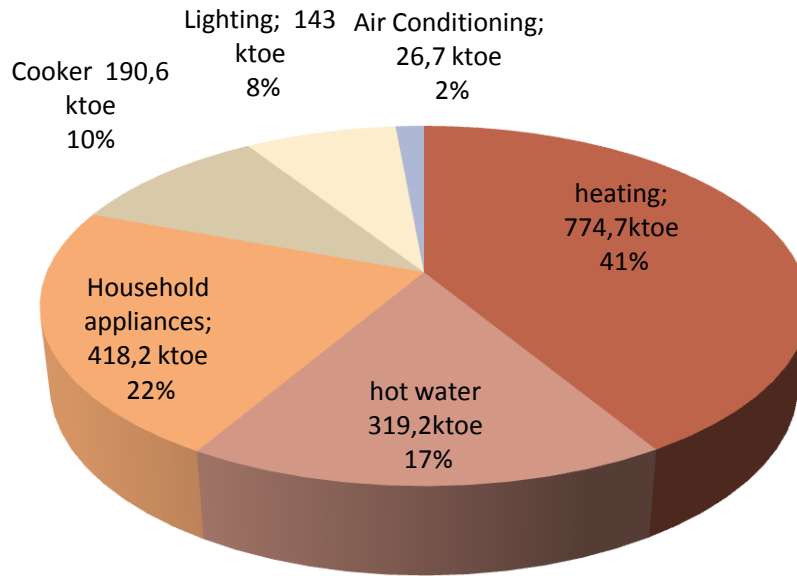
Challenges linked to the definition of NZEB



Challenges linked to the definition of NZEB - Example

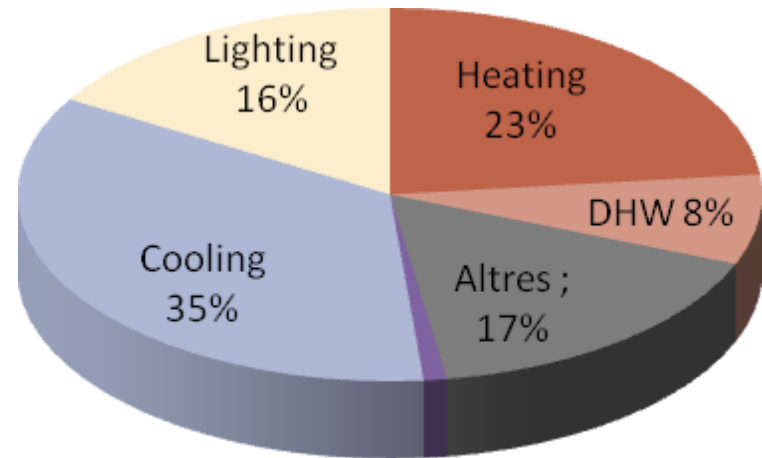


Challenges of NZEBs in Catalunya



Residential
Heating and DHW

The challenges are not the same in both sectors



Office buildings
Cooling, heating, lighting

3. Experiences of NZEBs

Experiences of NZEBs in Catalunya - LIMA

- Residential prototype in Barcelona
- Target: drastically reducing the environmental impact of residential buildings in the Mediterranean Area
- LCA
- Sustainability (not only energy)



Experiences of NZEBs in Spain - CIRCE

- Research building in Zaragoza (tertiary)
- Target: Life cycle zero emissions building
- Includes green construction concepts.



Thank you for your attention!

Eduard Cubí
ecubi@irec.cat



Institut de Recerca en Energia de Catalunya
Catalonia Institute for Energy Research

Patrons:



Amb el finançament de:

