

# Background and scope of the building envelope

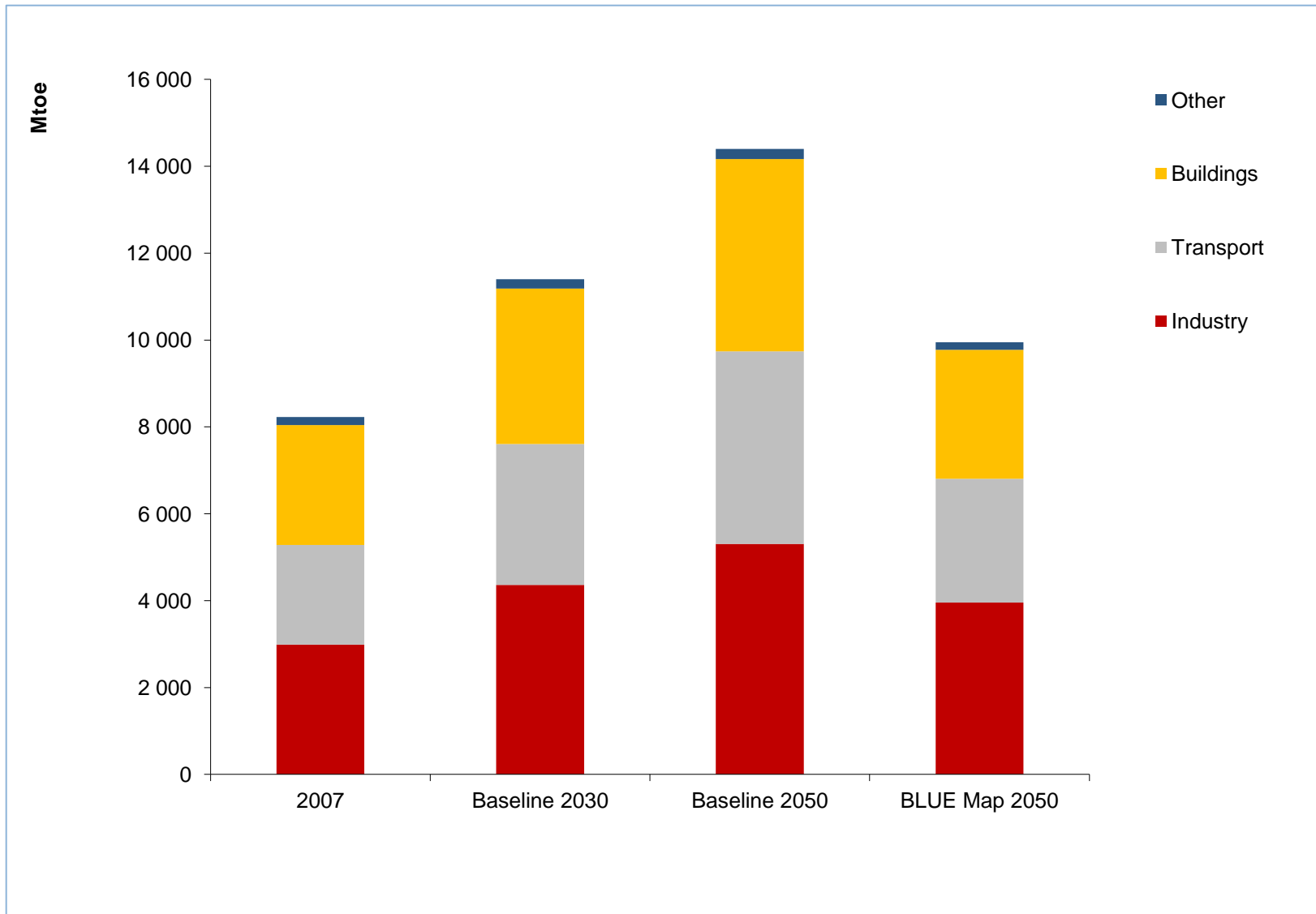
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International  
Energy Agency

# Buildings sector share of the total final energy consumption



# Background

## ■ Buildings are complex systems

- Holistic approach for the envelope
- Policy package
  - ◆ Regulatory instruments (codes and MEPs) and their enforcement
  - ◆ Labels and certificates and their enforcement
  - ◆ Economic instruments (financial, tax, market based instruments and direct investments)
- Efficient technologies for the envelope
  - ◆ Envelope
    - Insulation for walls and roofs
    - Efficient windows
    - Cool roofs for hot climates
    - What else?
  - ◆ HVAC equipment and appliances (excluded)

# Building Types

- **Residential (new and existing ones?)**
  - Single family residential
  - Multi-family residential
  - Other residential (mobile homes...???)
- **Non-residential (new and existing ones?)**
  - Office building
  - Hotel
  - Education building
  - Public assembly (community centres, meeting halls..)
  - Health care
  - Mercantile & Service
  - Institutional lodging (retirement homes...)
  - Other non-residential (factories,...???)



# Energy perspective

- Energy consumption in operation phase only?
- Embodied energy?
- Which end-uses to include in the energy balance?
  - Heating and cooling only?
  - Lighting?
  - Ventilation?
  - Other end-uses to include?
- Other criteria and impacts to consider?

# Key questions to answer by the end of the workshop

- Which policy packages are the most effective in terms of energy savings?
  - New and existing buildings
  - Different building types
  - Regional differences?
  - Can we prioritize policies and how?
  - Main barriers and how to overcome them?
  - International collaboration?

# Key questions to answer by the end of the workshop

- What are the most efficient technologies
  - New and existing buildings
  - Different building types
  - Regional differences?
  - Cost effectiveness?
  - Barriers to efficient technologies deployment
  - International collaboration
- Is there a timing issue?
- 2 separate publications; one on policies and one on technologies or one single publication on building envelope?