The Bumpy Road to Effective Implementation of Buildings Energy Efficiency Policies
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Energy Efficiency in the Buildings Sector
Challenges and Opportunities

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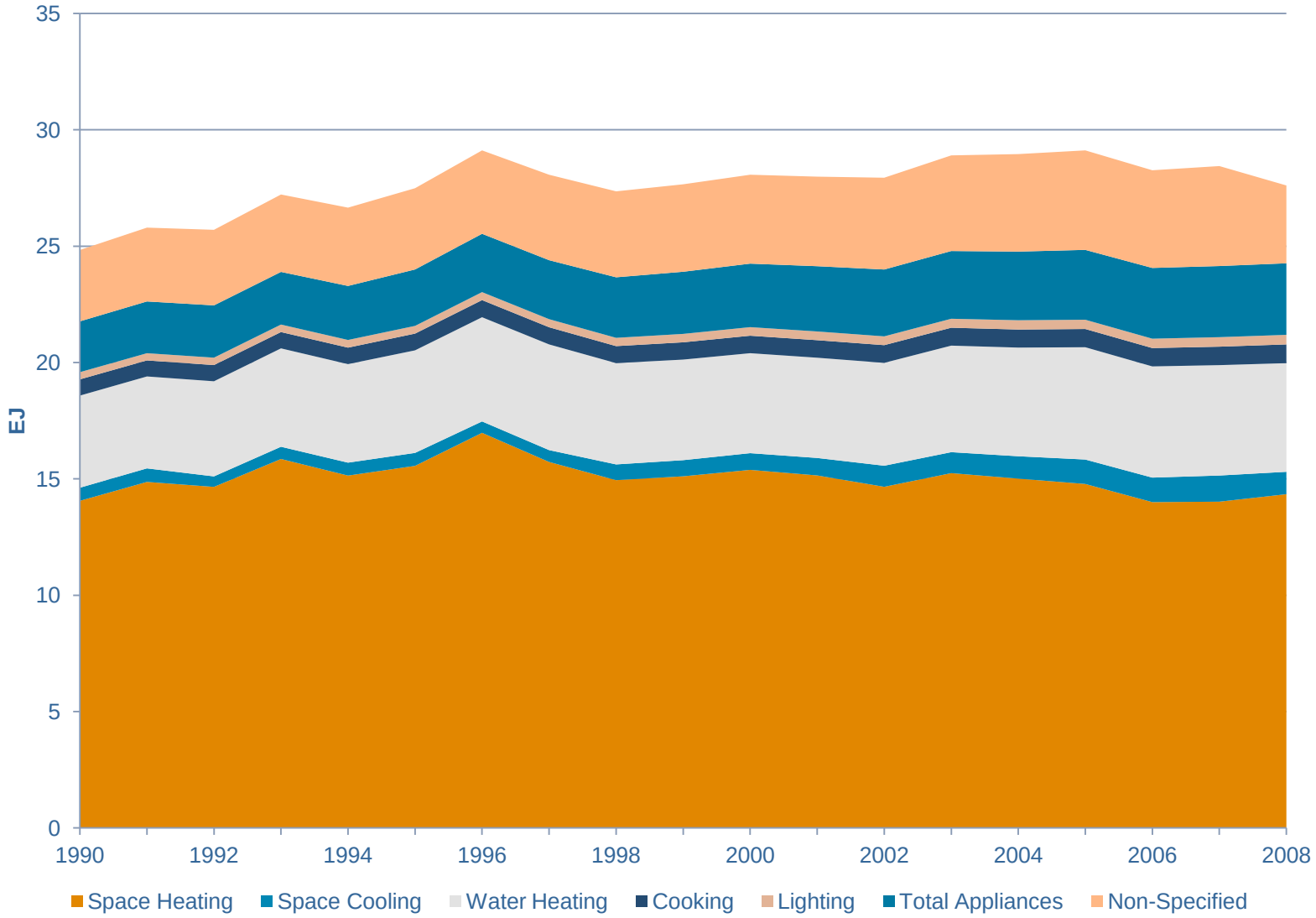
Why does the buildings sector matter for the IEA?

Country	Share of PE	Country	Share of PE
Australia	17%	Austria	34%
Canada	33%	Denmark	45%
Finland	33%	France	45%
Germany	45%	Italy	35%
Japan	41%	Netherlands	36%
Norway	26%	Spain	32%
Sweden	40%	Switzerland	49%
UK	44%	US	42%

2008

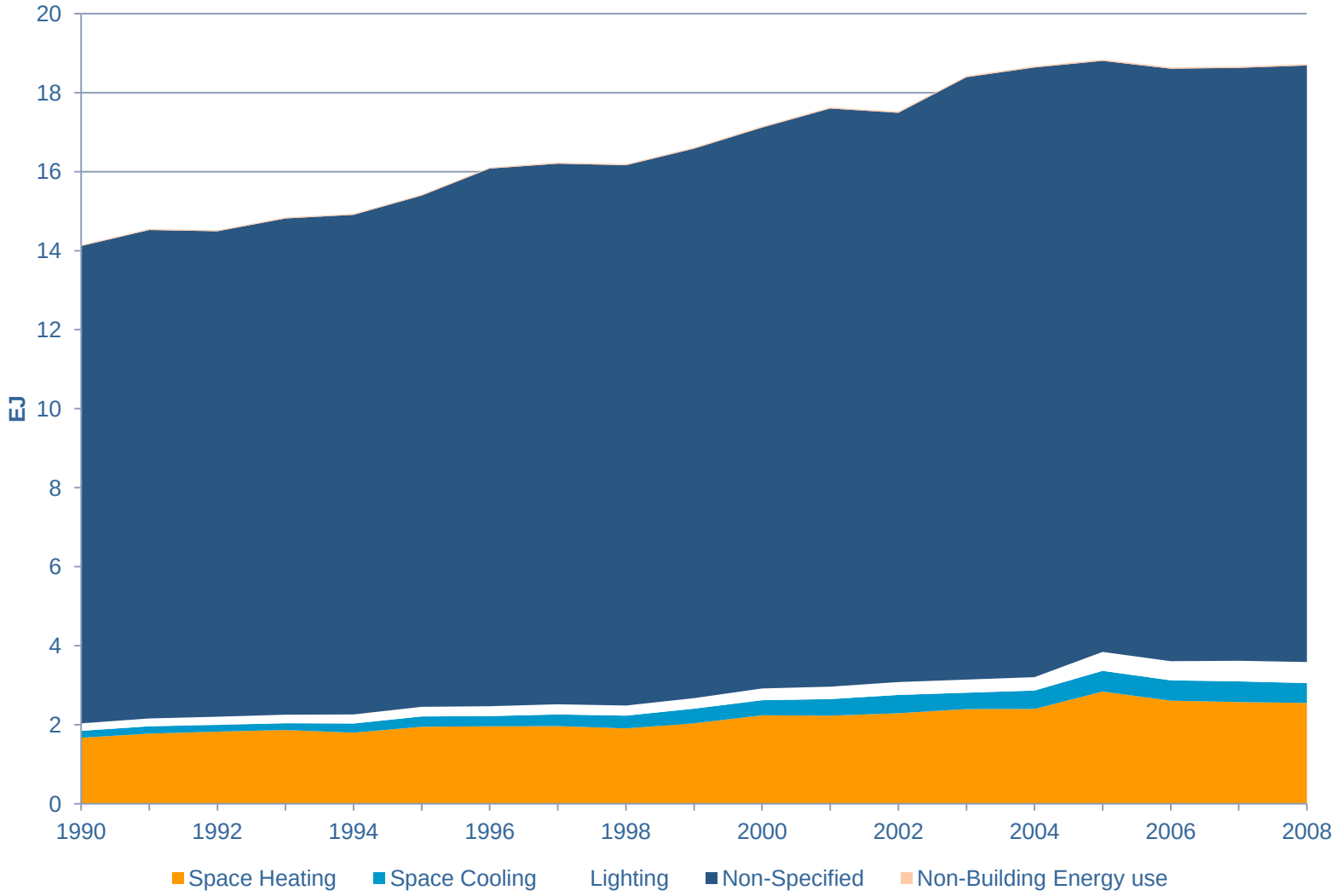
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Residential end-uses energy consumption (IEA 28)



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Non-residential end-uses energy consumption (IEA 28)



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How can we get the savings?

1. Across sectors

1.1 Energy efficiency data collection and indicators;
1.2 Strategies and action plans;
1.3 Competitive energy markets, with appropriate regulation;
1.4 Private investment in energy efficiency;
1.5 Monitoring, enforcement and evaluation of policies and measures.

2. Buildings

2.1 Mandatory building energy codes and minimum energy performance requirements
2.2 Aiming for net zero energy consumption buildings
2.3 Improving energy efficiency of existing buildings
2.4 Building energy labels and certificates
2.5 Energy performance of buildings components and systems.

3. Appliances

3.1 Mandatory energy performance standards and labels for appliances and equipment;
3.2 Test standards and measurement protocols for appliances and equipment;
3.3 Market transformation policies for appliances and equipment.

4. Lighting

4.1 Phase-out of inefficient lighting products and systems;
4.2 Energy-efficient lighting systems.

5. Transport

5.1 Mandatory vehicle fuel efficiency standards;
5.2 Measures to improve vehicle fuel efficiency;
5.3 fuel-efficient non-engine components;
5.4 Improving operational efficiency through eco-driving and other measures;
5.5 Improve transport system efficiency.

6. Industry

6.1 Energy management in industry;
6.2 High-efficiency industrial equipment and systems;
6.3 Energy efficiency services for small and medium-sized enterprises;
6.4 Complementary policies to support industrial energy efficiency.

7. Energy utilities

7.1 Energy utilities and end-use energy efficiency.

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Why is it so hard to get the savings?

- Buildings are complex systems
- Holistic approach is needed to reduce energy consumption in the buildings sector
- Policy packages are required
  - Regulatory instruments (codes and MEPs) and their enforcement
  - Labels and certificates and their enforcement
  - Incentive schemes (financial instruments, taxes, direct investments, public procurement…)

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What is the reality?

- Complex documentation
- Lack of clearly defined energy performance requirements
- Misaligned policy instruments
- Lack of monitoring and enforcement

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What do we need to do better?

- **Buildings Energy Efficiency Policies should be based:**
  - **on a long-term ambitious strategy for reducing energy consumption**
  - **on holistic approaches that address indoor comfort, energy security, fuel poverty and climate change challenges**
  - **on sustainable policy commitments from all stakeholders**
  - **on energy requirements set at their cost optimum level**
- **Learning curves and adaptation to the latest best practices are needed to gain confidence and support from building owners and operators**
- **National plans should be implemented to transform existing buildings to nearly Zero Energy Building whenever technically feasible and economically viable**

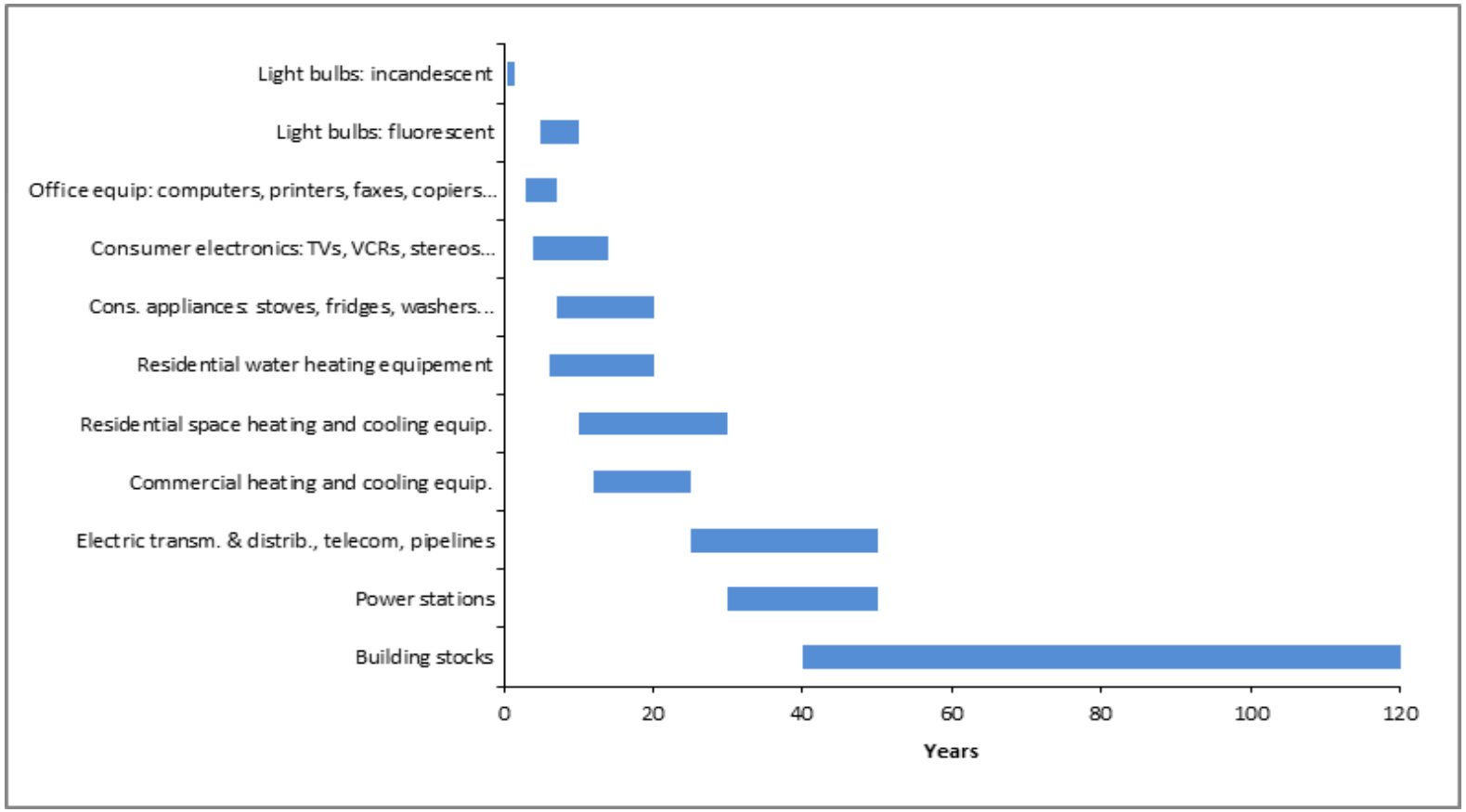
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What do we need to do better?

- It is important to get it right in the first place:
  - Reducing energy consumption in buildings must start at the design stage for new buildings
  - For all existing buildings the shell (roofs, walls and windows) must be addressed first to minimise heating and cooling demand
- Public funding is needed for training, technical assistance and awareness campaigns and in some case to leverage private capital
- Retrofitting existing buildings requires mandatory renovation rate (regulation) and LONG-TERM FINANCING INSTRUMENTS

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Where should we start?



Based on Philibert and Pershing 2002, ETP 2010

Reducing the energy demand in the buildings sector require a long term strategy

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Thank you for your attention

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