

International Energy Agency Technology Roadmap - Buildings Envelope

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*Building Envelope Technology Roadmap
San Antonio, 26 June 2012*

iea



International
Energy Agency

The International Energy Agency

▶ IEA Member Countries



A world map with the IEA member countries highlighted in a dark blue color. The countries are listed in a column on the right side of the map, corresponding to their geographical locations.

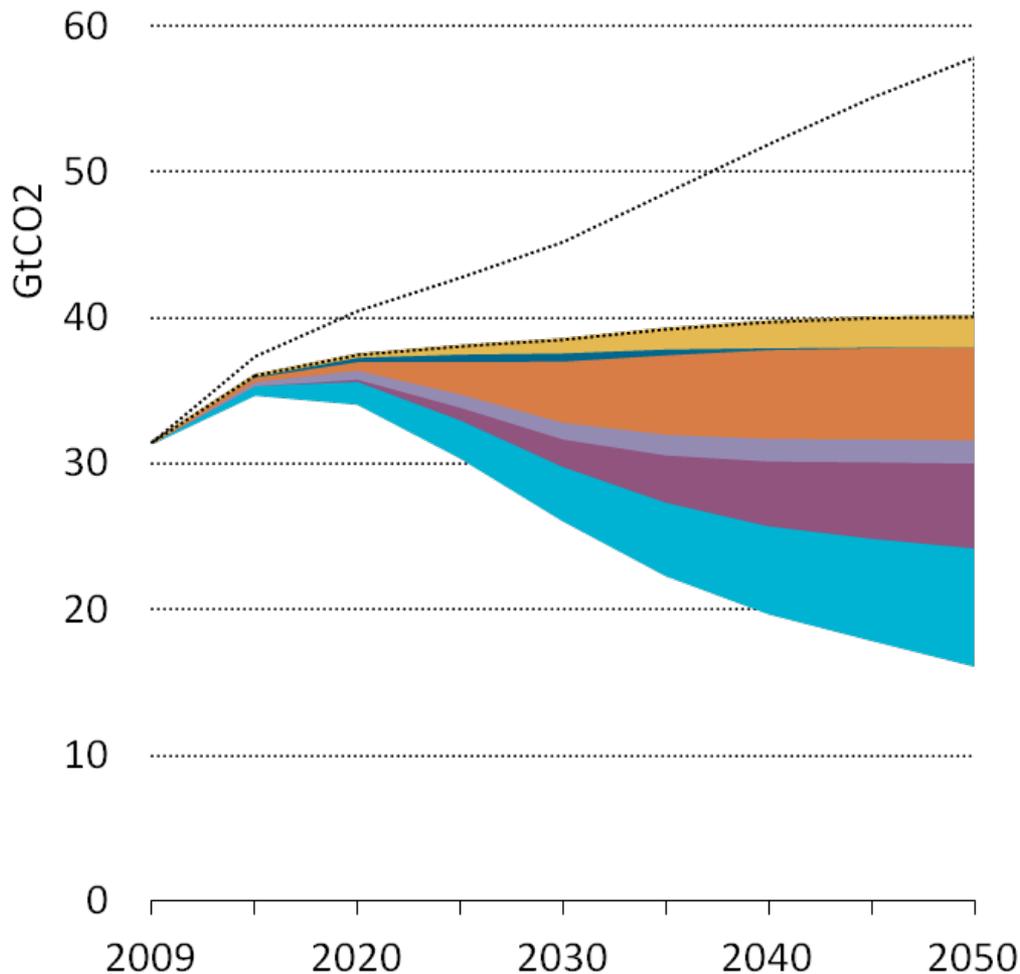
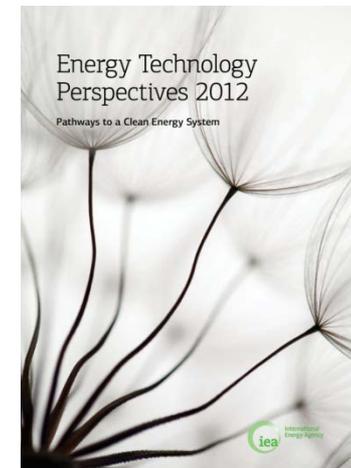
- Australia
- Austria
- Belgium
- Canada
- Czech Republic
- Denmark
- Finland
- France
- Germany
- Greece
- Hungary
- Ireland
- Italy
- Japan
- Korea (Republic of)
- Luxembourg
- Netherlands
- New Zealand
- Norway
- Poland
- Portugal
- Slovak Republic
- Spain
- Sweden
- Switzerland
- Turkey
- United Kingdom
- United States

The European
Commission
also participates
in the work
of the IEA.

IEA Shared Goals

- **Diversity, efficiency, flexibility within the energy sector**
- **Ability to respond promptly and flexibly to energy emergencies**
- **Environmentally sustainable provision and use of energy**
- **More environmentally acceptable energy sources**
- **Improved energy efficiency**
- **Continued R&D and deployment of new and improved energy technologies**
- **Undistorted energy prices**
- **Free and open trade and a secure framework for investment**
- **Co-operation among all energy market participants**

Energy Technology Perspectives 2012



□ 6DS

■ Nuclear 8%

■ Power generation efficiency and fuel switching 3%

■ Renewables 29%

■ End-use fuel switching 9%

■ CCS 20%

■ End-use fuel and electricity efficiency 31%

Technology roadmaps provide answers

- **Where is technology today?**

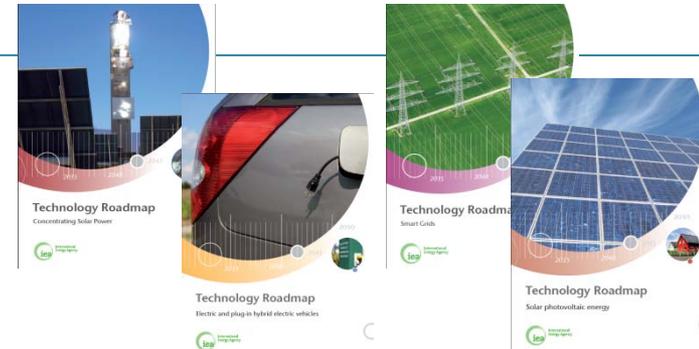
- GW installed capacity/kWh of savings
- Leading countries/regions
- Cost, efficiency

- **What is the deployment pathway needed to achieve 2050 goals?**

- Use IEA Energy Technology Perspectives BLUE Map scenarios

- **What are the priority near-term actions?**

- R&D gaps and how to fill them
- Identify barriers and obstacles and how to overcome
- Market requirements and policy needs
- Technology diffusion/transfer and international collaboration needs

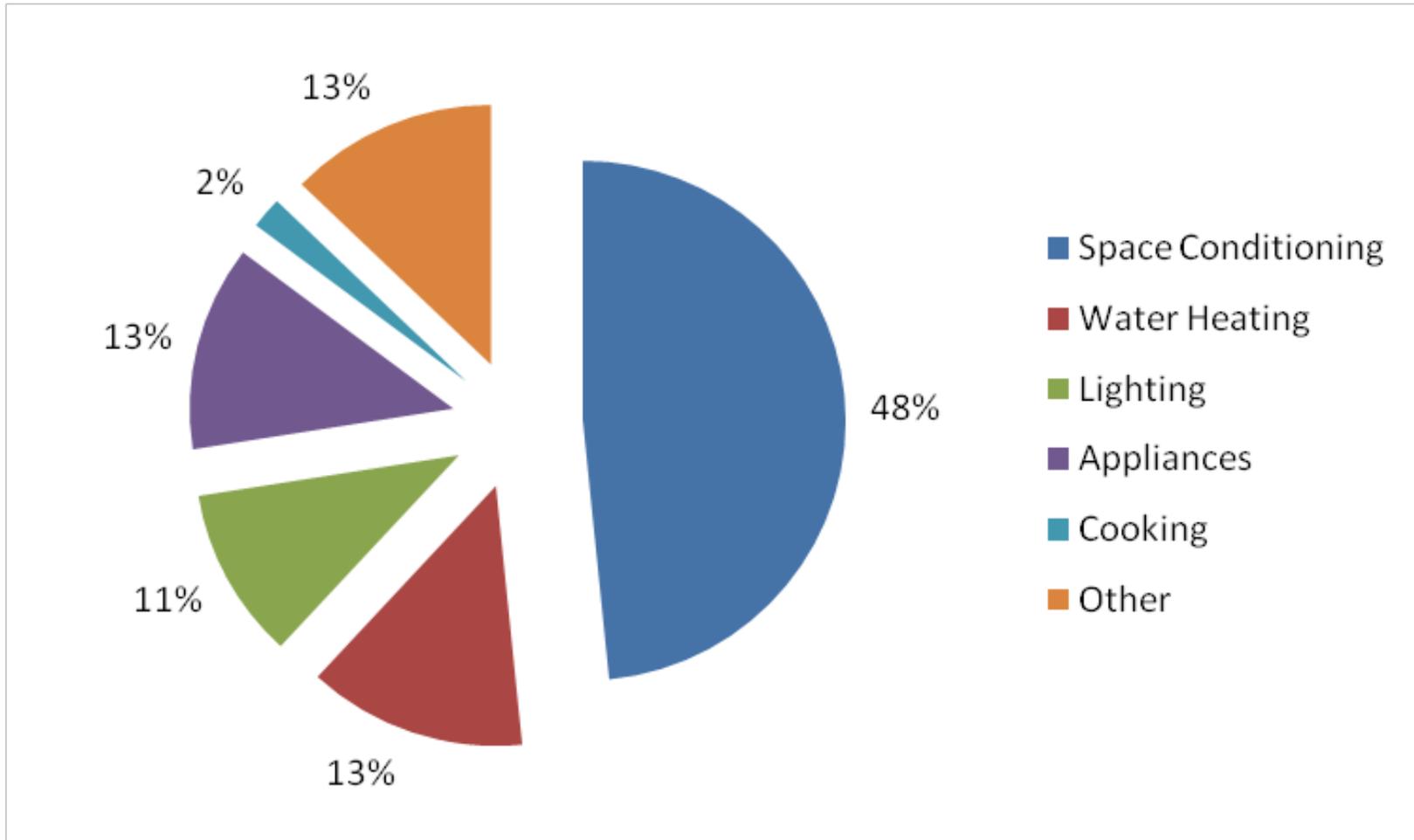


A common understanding among all stakeholders

- Goal to achieve
- Milestones to be met
- Gaps to be filled
- Actions to overcome gaps and barriers
- What and when things need to be achieved



U.S. buildings energy use in 2010



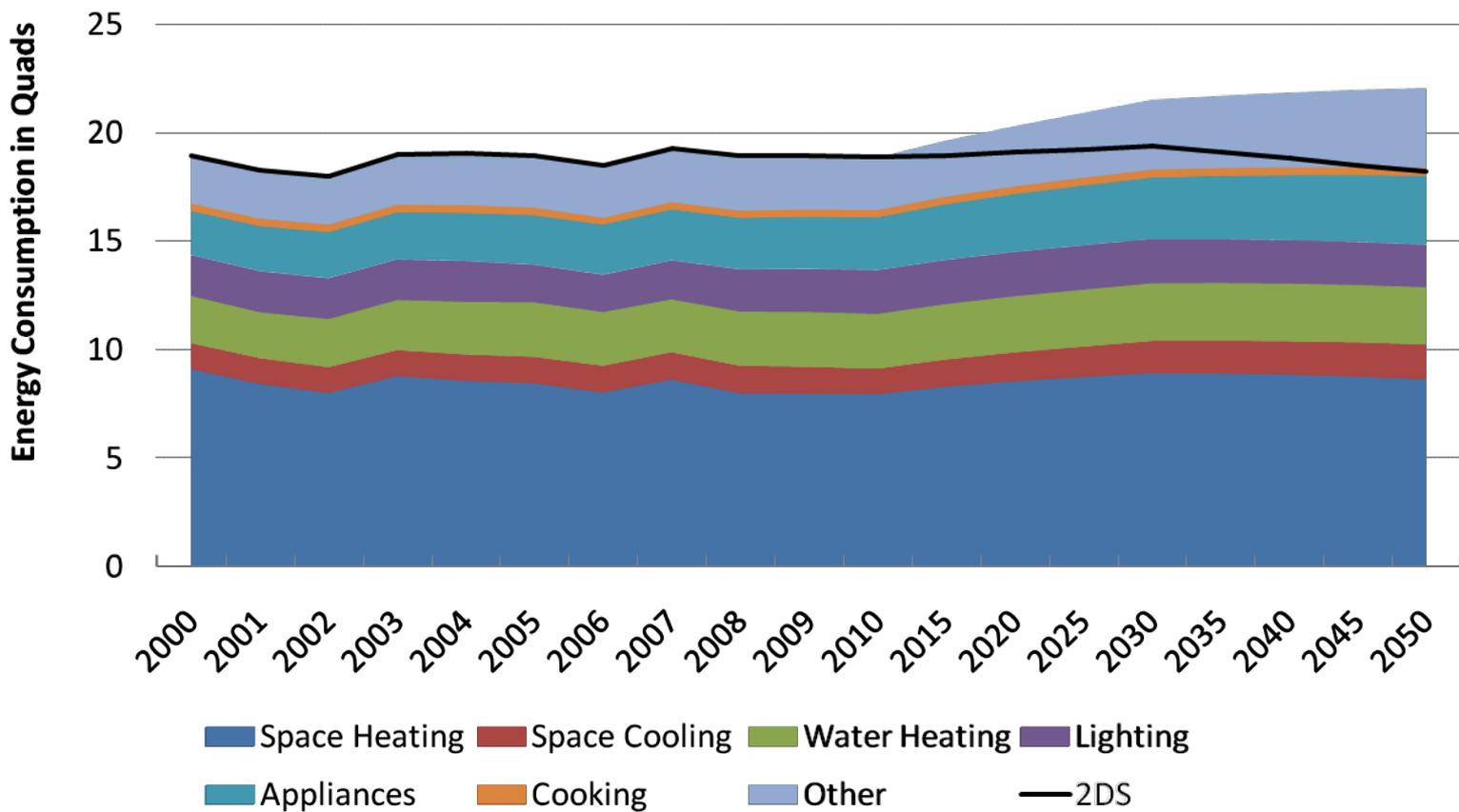
U.S. buildings energy use

30%

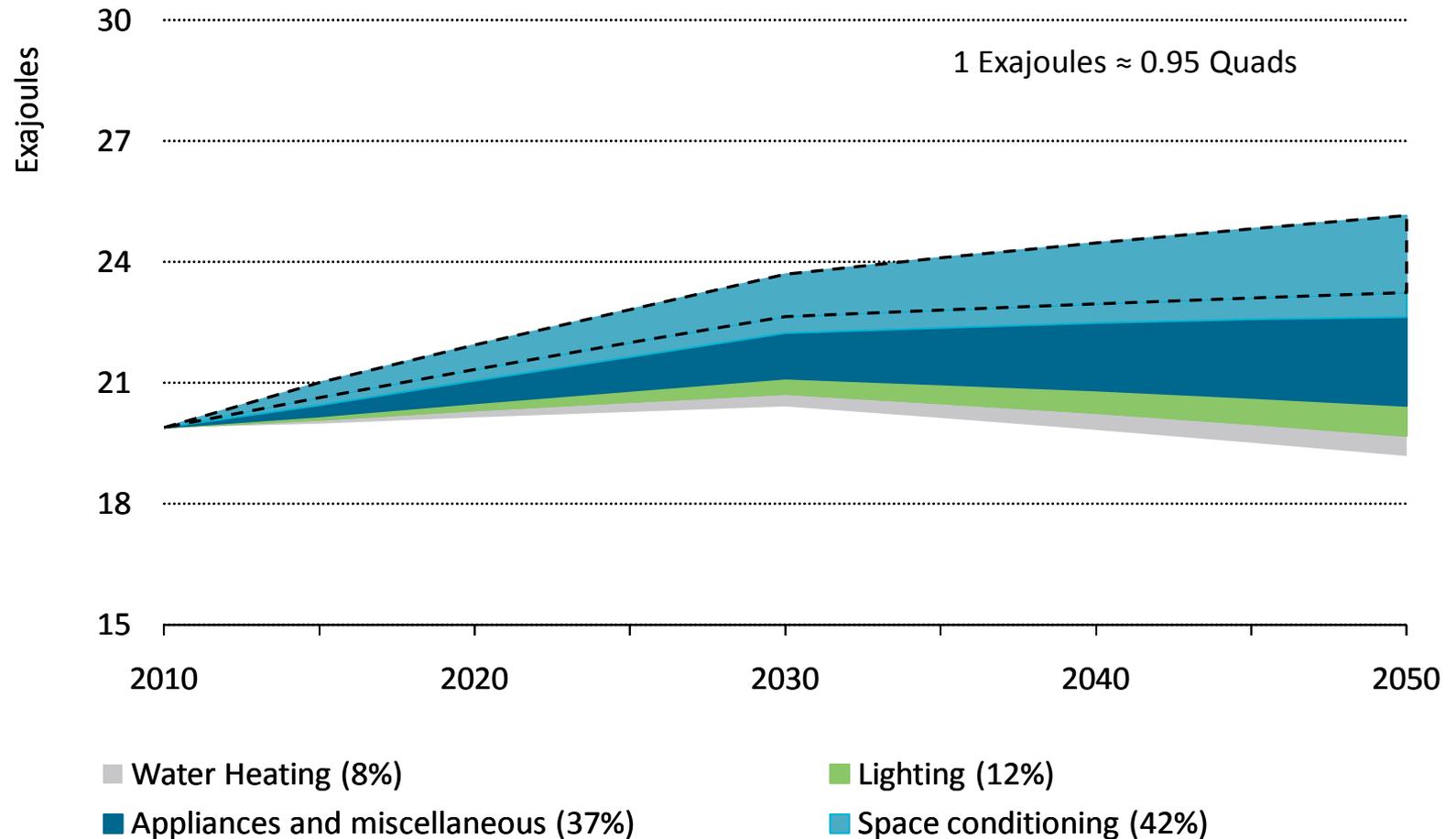
world building energy consumption

18%

14%



Preliminary results – expected energy reduction by end-use (6DS to 2DS)



Three-quarters of space conditioning reduction estimated to be from building shell improvement

IEA Building Shell Technology Roadmap

Collaboration with stakeholders to:

- Define and analyse available technologies
 - *Windows, roofs, sealants, and insulation*
 - *Status of market penetration and suitability for contexts/regions*
- Develop vision for technology deployment
 - *Energy targets and deployment goals*
 - *Cost performance objectives*
- Assess policy, financial, and related needs

IEA Building Shell Technology Roadmap

Next steps:

- Improved regional data on building shell components
 - *Current market and energy performance*
 - *Regional/contextual analysis (e.g. heat in Northeast)*
- Study of cutting edge technologies
 - *Availability and penetration*
 - *Cost performance*
 - *Energy efficiency potential*
- Roadmap development and publication



IEA buildings shell roadmap – publication Q2 2013

1- Introduction

2- Technology

3- Vision for deployment to 2050

4- Policy support and milestones

5- Financial support and recommendation

6- Roadmap action plan

Thank you for your attention!

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