



## 36<sup>th</sup> Euroheat & Power Congress

27-28 May 2013, Vienna, Austria

Future for Sustainable Buildings

Today's students will be tomorrow's designers

Marc LaFrance, 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 map shows the continents of North America, South America, Europe, Africa, and Asia. The highlighted countries are listed on the right side of the map.

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.

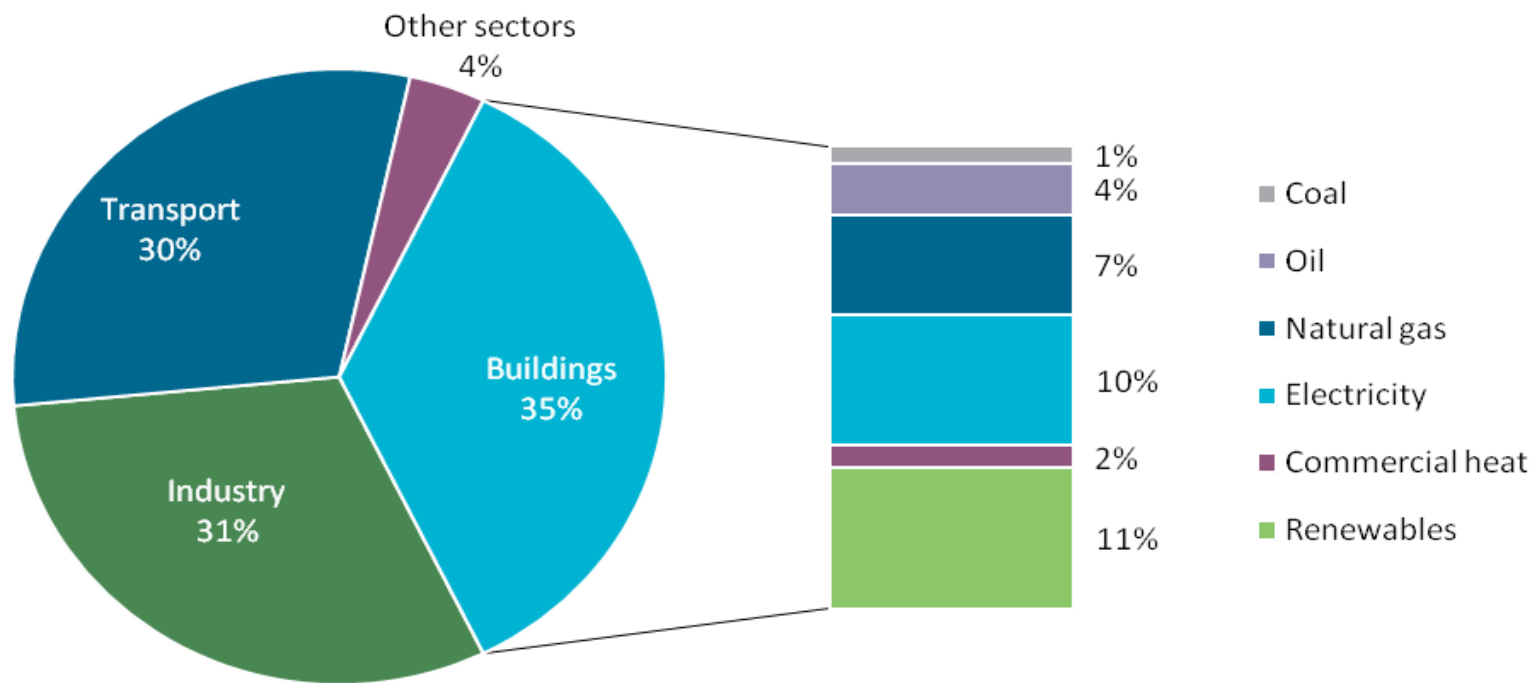


# IEA Shared Goals

- **Diversity, efficiency, flexibility within the energy sector**
- **Ability to respond promptly and flexibly to energy emergencies**
- **Environmentally sustainable provision & 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**



# Final Energy Consumption by Sector and Buildings Energy Mix, 2010





## 2DS

a vision of a **sustainable** energy system of reduced Greenhouse Gas (GHG) and CO<sub>2</sub> emissions

**The 2°C Scenario**

## 4DS

reflecting pledges by countries to cut emissions and boost energy efficiency

**The 4°C Scenario**

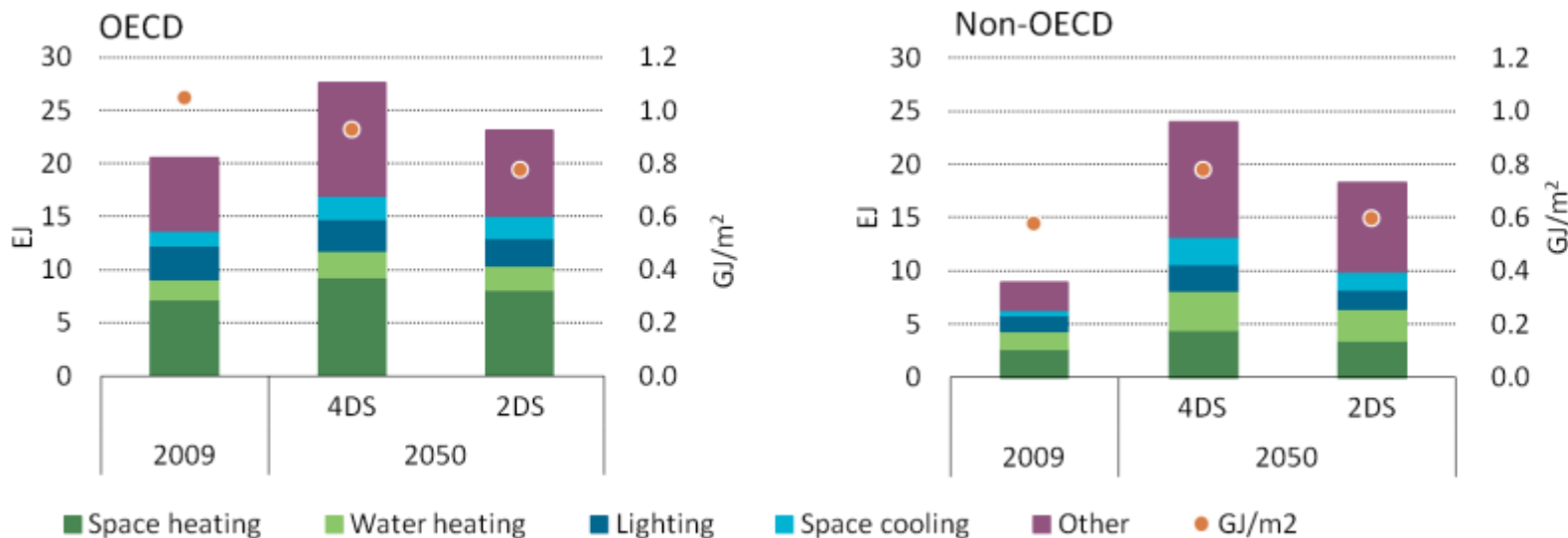
## 6DS

where the world is now heading with potentially **devastating** results

**The 6°C Scenario**



# ETP 2012 Forecast – Heat is Major End-Use







## Sustainable Solutions for Heat in Buildings

- Reduced heating loads
  - Better envelopes (insulation, air sealing and windows)
  - New construction and affordable retrofit measures
- Modern district heating providing renewable energy, waste heat, and lower grade heat for heat pumps
  - 4<sup>th</sup> generation distribution systems, with advanced co-generation, biomass, etc
  - Free cooling with river or ground water
  - Zero energy building options for dense urban areas





## Future of Sustainable Buildings

- Technology solutions – today and R&D for tomorrow
- Capacity building: developed and developing countries – students are the future
- Integration of renewable resources with efficient, low energy buildings





## Current IEA Building Activities

- The IEA CHP/DHC Initiative – Phase III
- Comprehensive Building Technologies Publication (available soon)
  - Energy savings forecast to 2050
  - Regional analyses
  - Key technology descriptions and recommendations
  - Recommended policy action
- Building Envelope Roadmap
- Enhanced Building Modeling Collaboration with Stakeholders





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