



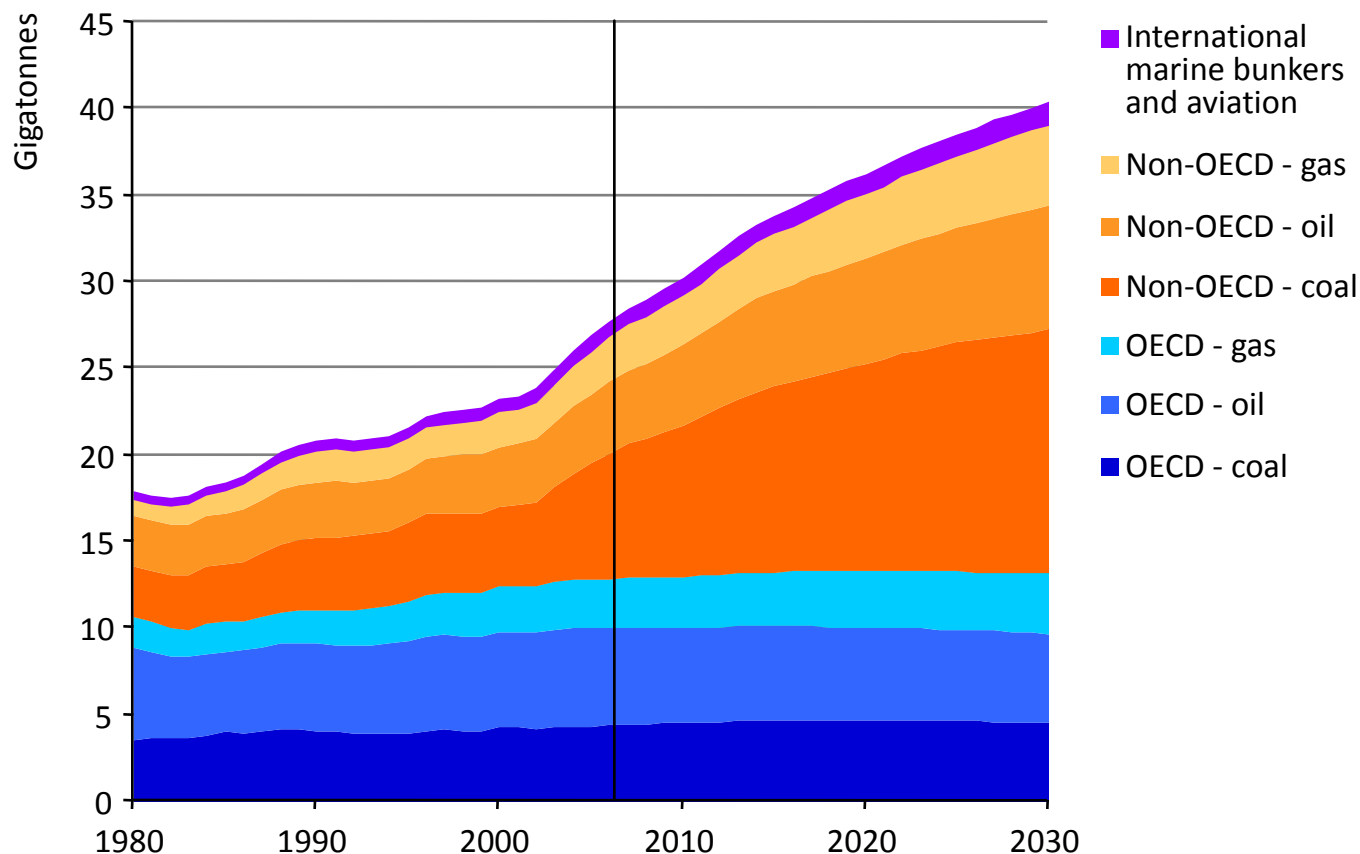
Ensuring Green Growth in a Time of Economic Crisis: The role of Energy Technology

G8 Environment Ministers Meeting

22 April, Siracusa

**Mr. Nobuo Tanaka
Executive Director
International Energy Agency**

Energy-related CO₂ emissions in a 'Business as usual' scenario



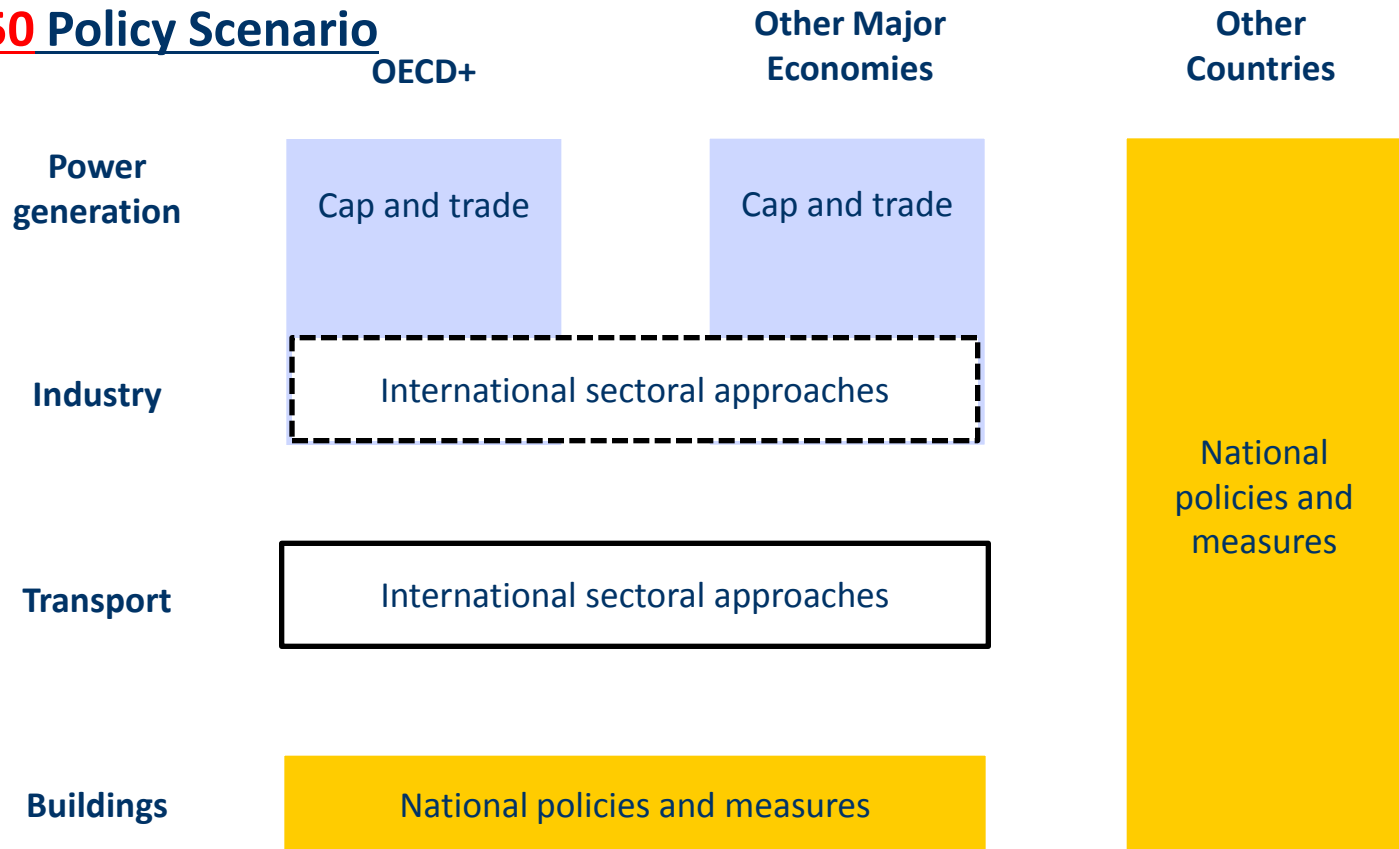
Source: World Energy Outlook 2008

97% of the projected increase in emissions between now & 2030 comes from non-OECD countries – three-quarters from China, India & the Middle East alone



Copenhagen: a plausible post-2012 global climate-change policy regime

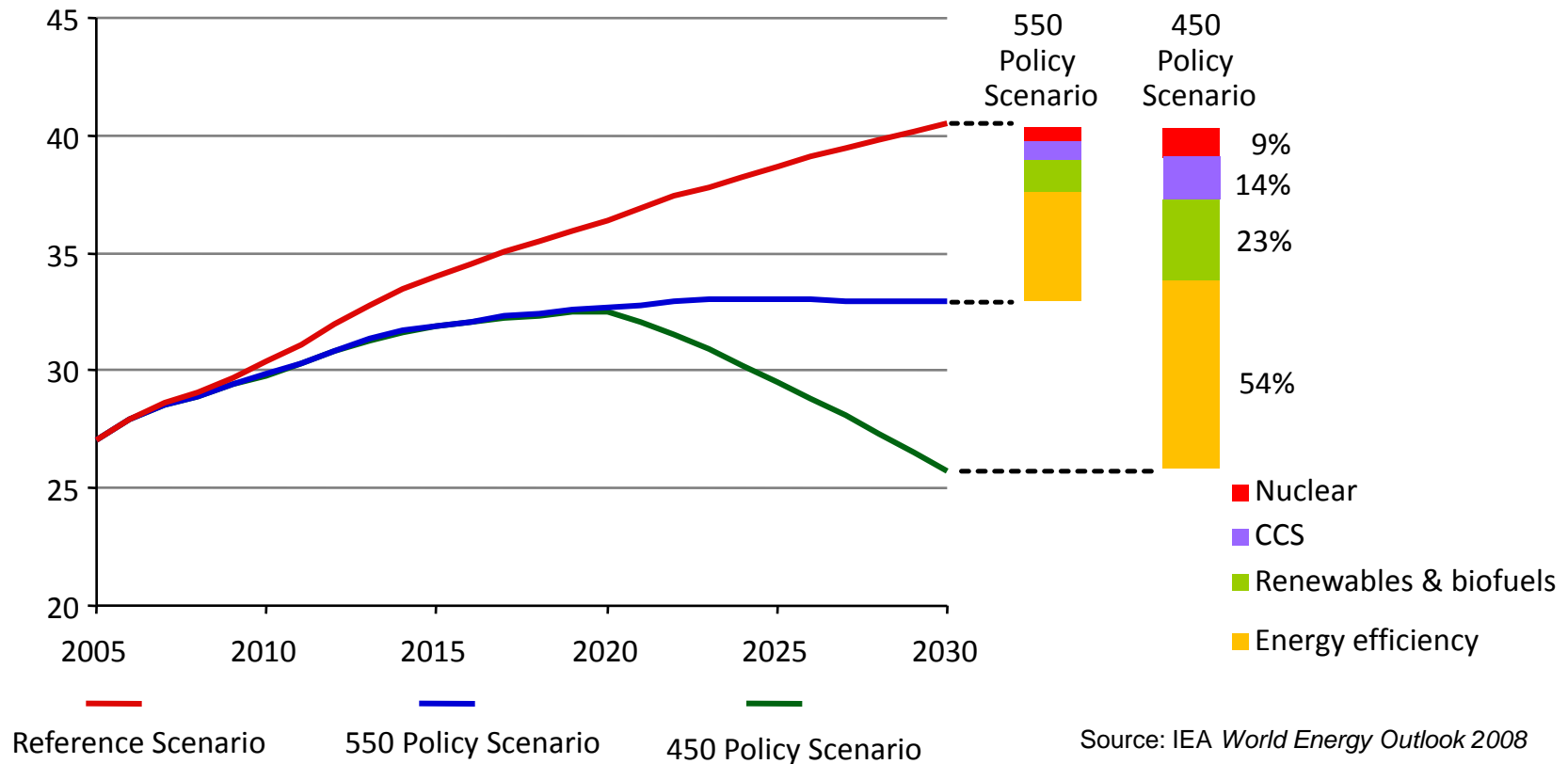
The **450** Policy Scenario



A combination of cap and trade systems, international sectoral approaches and national policies



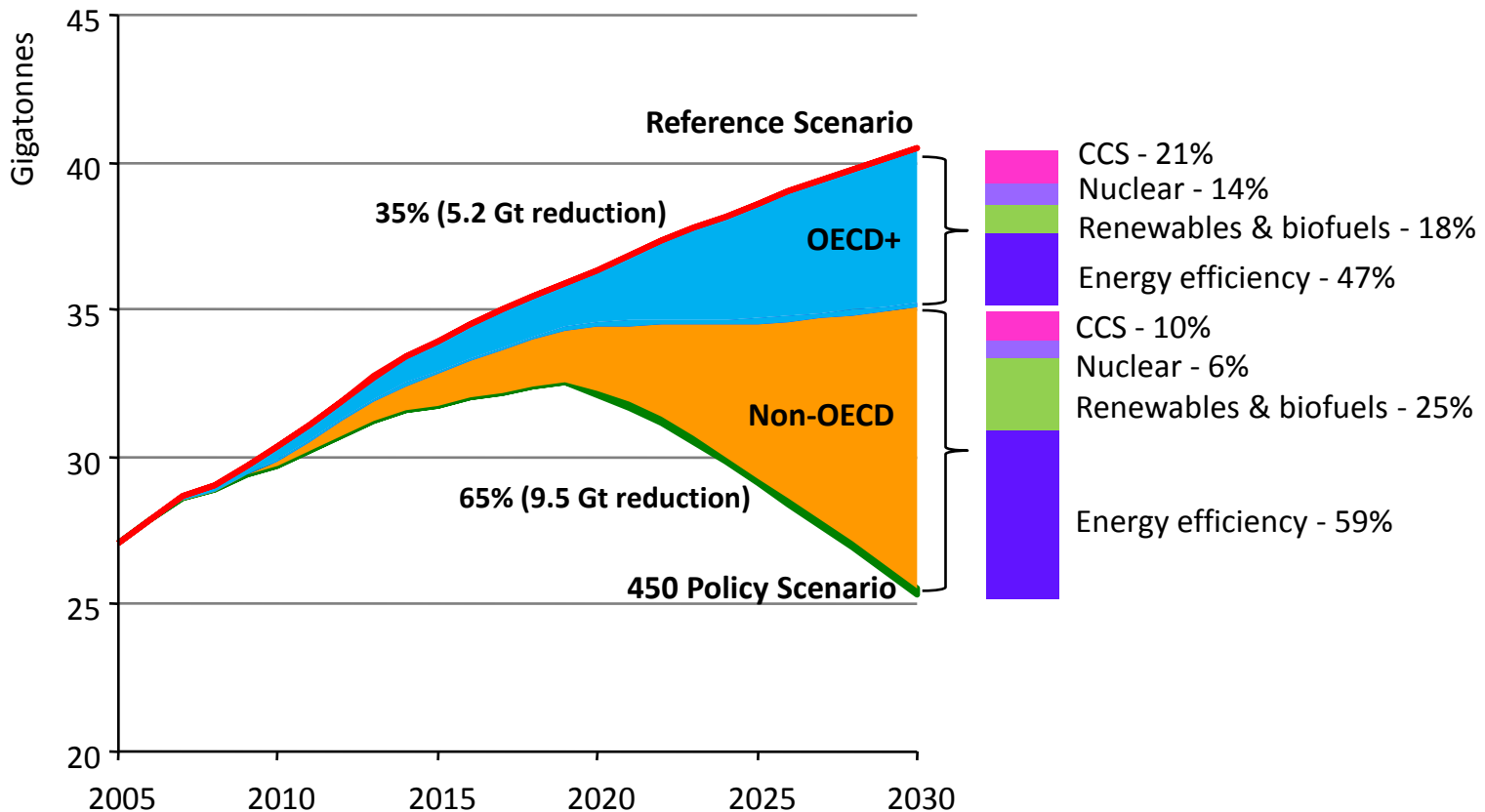
Clean energy technologies play a key role in reducing CO2 emissions



Technological progress is needed to achieve some emissions reductions but efficiency gains and deployment of existing low-carbon energy accounts for most of the savings.



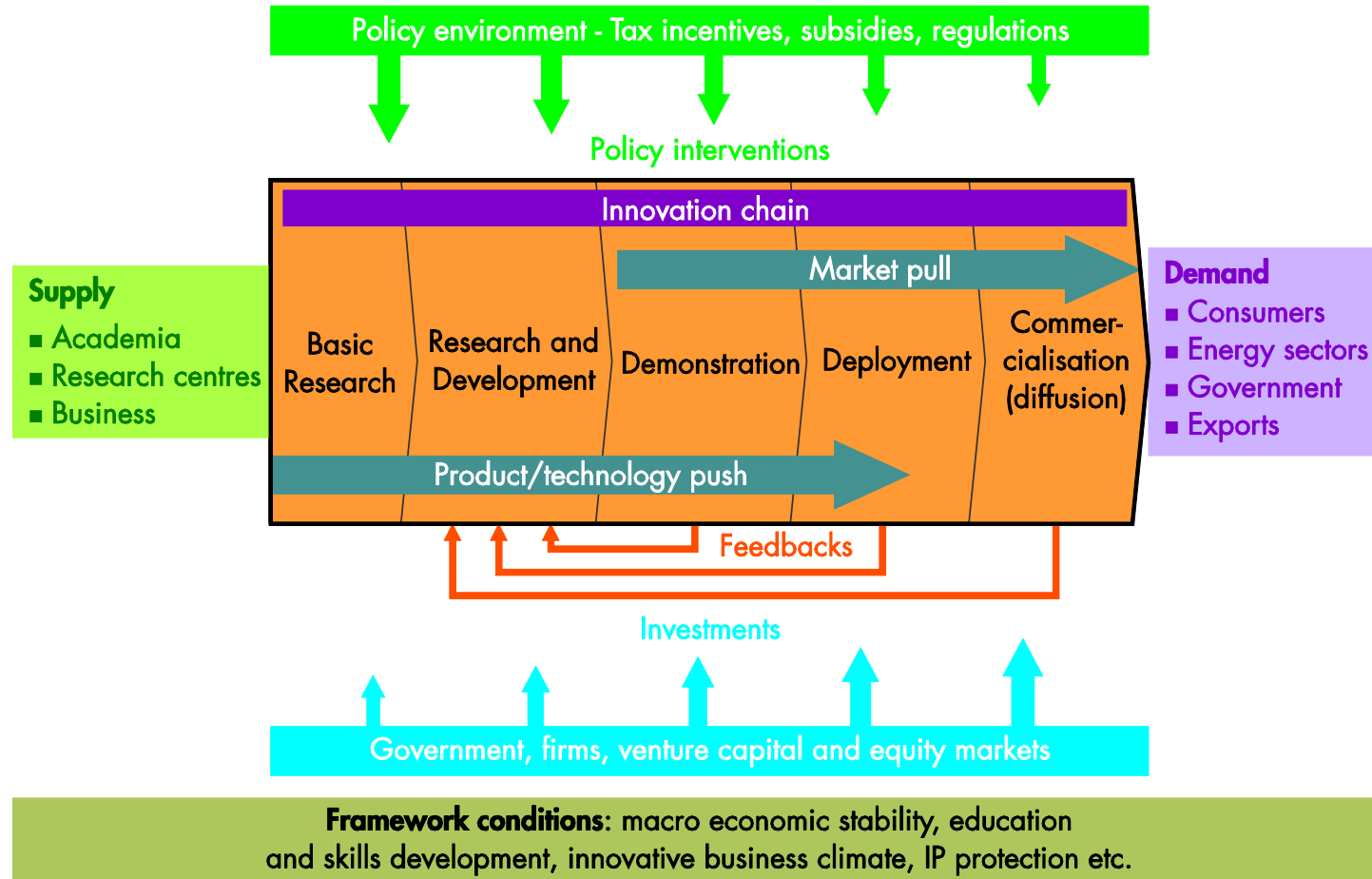
Reductions in energy-related CO₂ emissions in the 450 Policy Scenario



- **OECD and non-OECD countries must both work towards reducing CO₂ emissions**
- **Energy efficiency plays a key role for both OECD and non-OECD countries**
- **To inform the international climate negotiations, the IEA will release an early excerpt of the WEO 2009 climate change analysis, to coincide with the UNFCCC meeting in Bangkok**



Developing and deploying energy technologies



Roadmaps can accelerate deployment of key clean energy technologies

● Supply side

- ◆ CCS power generation
- ◆ Coal – IGCC
- ◆ Coal – USCSC
- ◆ Nuclear III + IV
- ◆ Solar – PV
- ◆ Solar – CSP
- ◆ Wind
- ◆ Biomass – IGCC & co-combustion
- ◆ Electricity networks
- ◆ 2nd generation biofuels

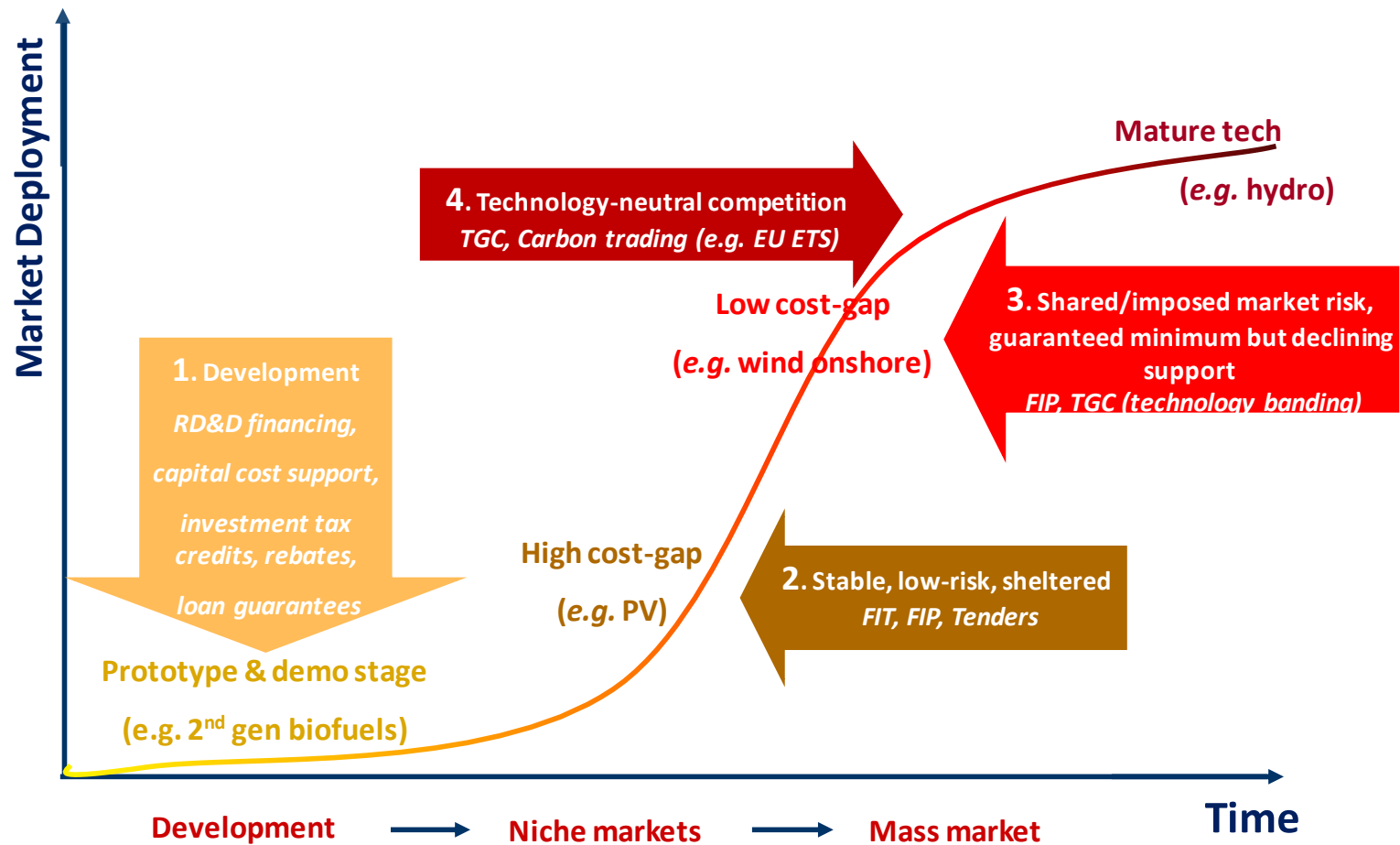
● Demand side

- ◆ Energy efficiency in buildings
- ◆ Energy efficient motor systems
- ◆ Efficient ICEs
- ◆ Heat pumps
- ◆ Plug-ins and electric vehicles
- ◆ Fuel cell vehicles
- ◆ Industrial CCS
- ◆ Solar heating
- ◆ Efficient industry processes (starting with Cement)

Work has already begun on technologies shown in green, and these roadmaps will be launched later in 2009.



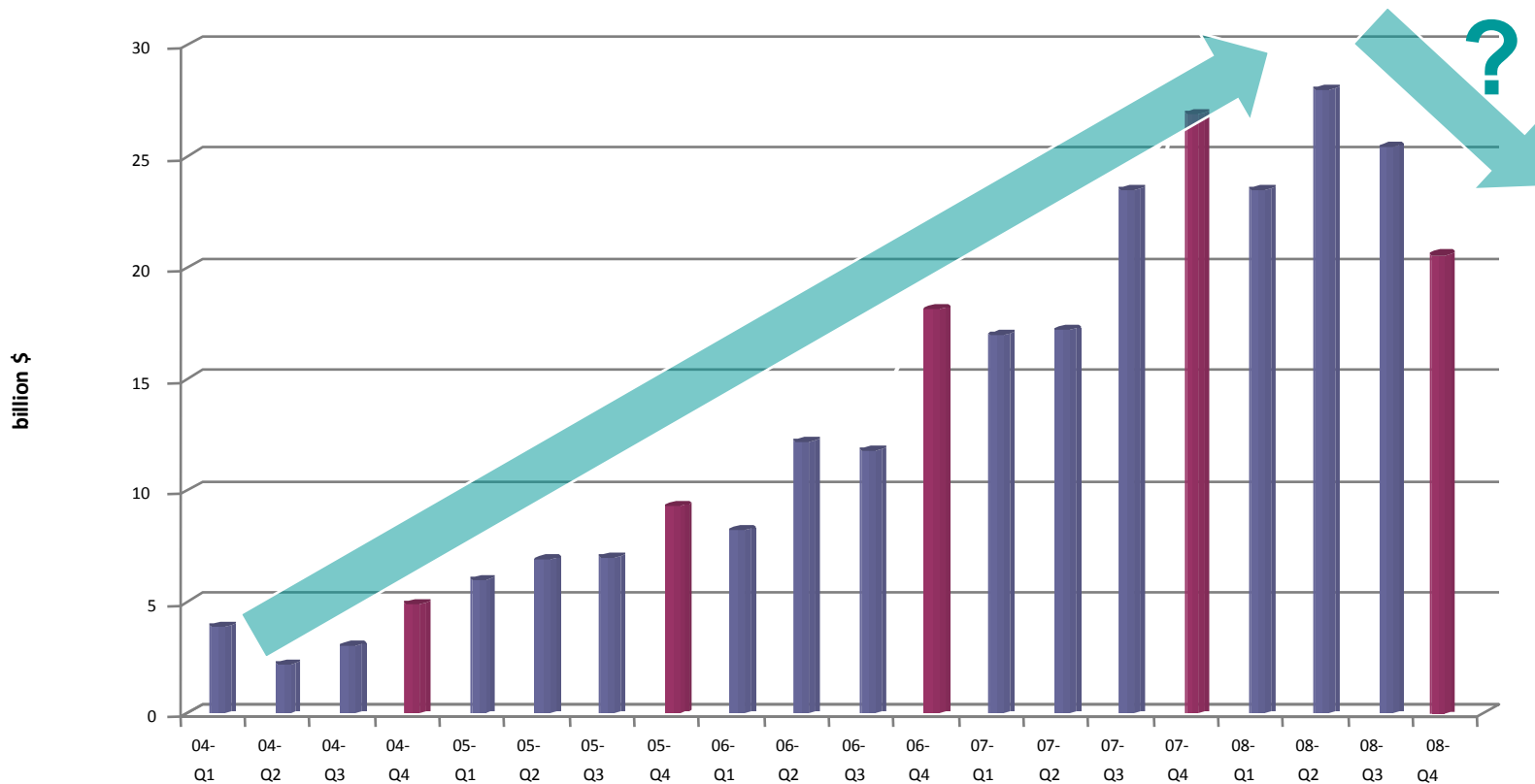
Supporting low carbon technologies: from development to deployment



Source: IEA, 2008.



Impact of financial crisis on investment in renewable energy



Source: New Energy Finance

Investment in renewable is decreasing since the 3rd quarter of 2008, affected by the rising cost of credit and the fall in oil and gas prices.



Actions today to curb CO2 emissions

	Job Intensity	Long-Term Cost Reduction	CO ₂ Reduction	Security of Supply
Building Refurbishment	high	moderate	high	moderate
Switch to Cleaner Cars	moderate	moderate	moderate	high
Wind, Solar	high	high	moderate	moderate
Smart Metering	high	high	low	moderate
Battery Development	moderate	high	high	high
Clean Energy R&D	moderate	high	moderate	moderate
CCS	low	moderate	high	moderate

Impact: ■ high ■ moderate ■ low



Summary

- **Economic crisis** must not make us lose focus on long-term goal of a more secure and sustainable energy future
- **Energy technology** is key to this future
- **An integrated and strategic policy approach** is required that bridges the short to the long-term
 - ◆ Initial emphasis on energy efficiency
 - ◆ Roadmaps and international co-operation
 - ◆ Increasing RD&D funding for new technologies
 - ◆ Tailored deployment policies
- **A Clean Energy New Deal** can provide win-win benefits

