



World Energy Outlook 2007: Energy Supply and Competitiveness



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Content of the Presentation

- Irish Energy Situation
- Infrastructure Investment
- The Impact of China & India
- Oil Demand
- Gas Supply
- Climate Change Constraints
- Conclusions



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Two Scenarios

- Reference Scenario (RS)
 - Business as usual
 - Linear projections
 - Not realistic
- Alternative Scenario (AS)
 - Considers some more benign policies being implemented
 - Not considering highly ambitious policies such as 2007 EU targets
 - Still not sufficient in terms of sustainability



Ireland's Energy Needs/Constraints

Oil&Gas Demand Share of Total Energy Demand in %	1973	1990	2005	2010	2020
<i>Oil</i>	77.1	47.0	56.0	51.1	53.5
<i>Gas</i>	-	18.1	22.7	28.8	36.0
<i>Oil and Gas Combined</i>	77.1	65.1	78.7	79.9	89.5

CO ₂ Emissions	1973	1990	2005	2010	2020
<i>Mt/year excluding bunker fuels</i>	21.0	30.9	43.8	50.2	56.2



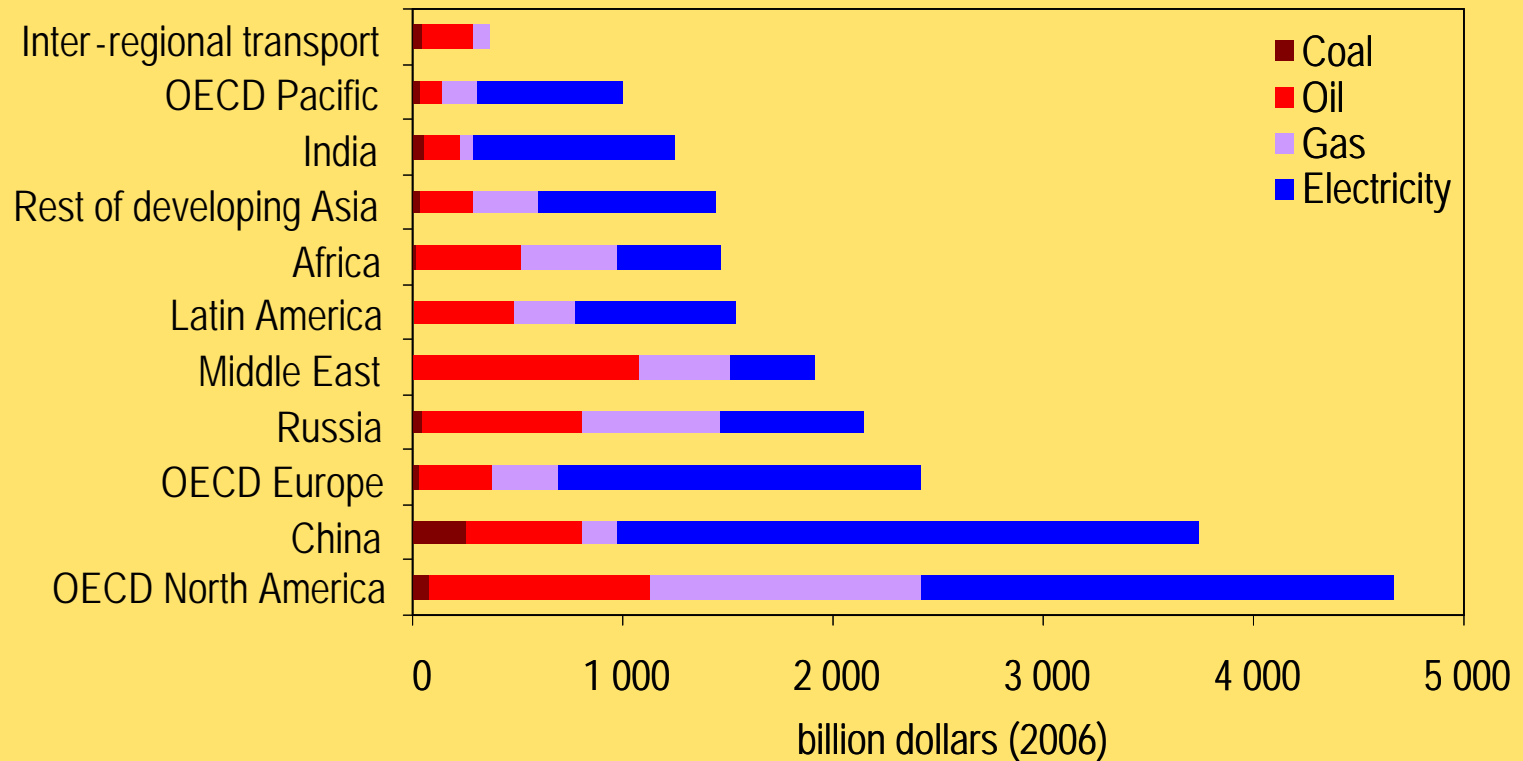
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RS - Cumulative Investment in Energy-Supply Infrastructure, 2006-2030



Just over half of all investment needs to 2030 of \$22 trillion are in developing countries, 17% in China & another 6% in India alone



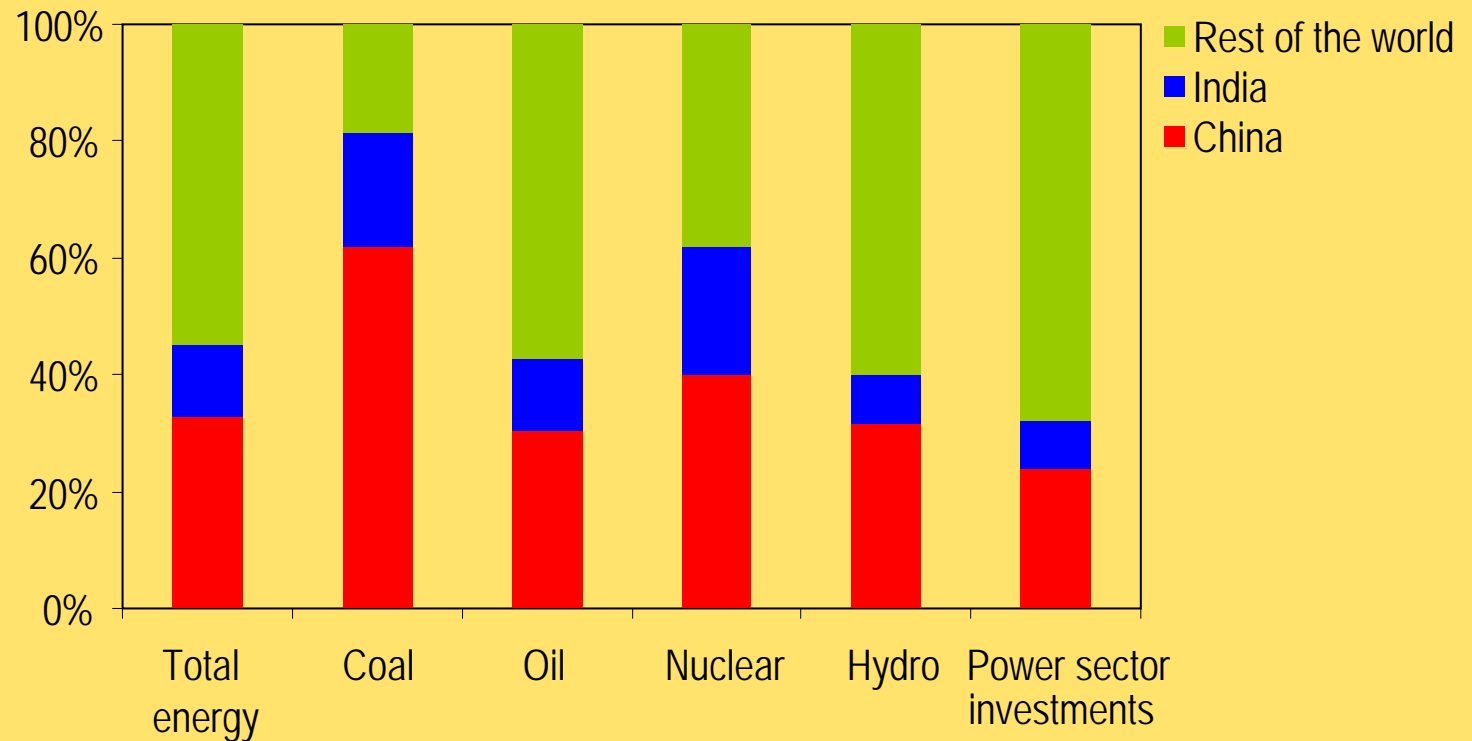
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RS - The Emerging Giants of World Energy

Increase in Primary Energy Demand & Investment
Between 2005 & 2030 as Share of World Total



China & India will contribute more than 40% of the increase in global energy demand to 2030 on current trends

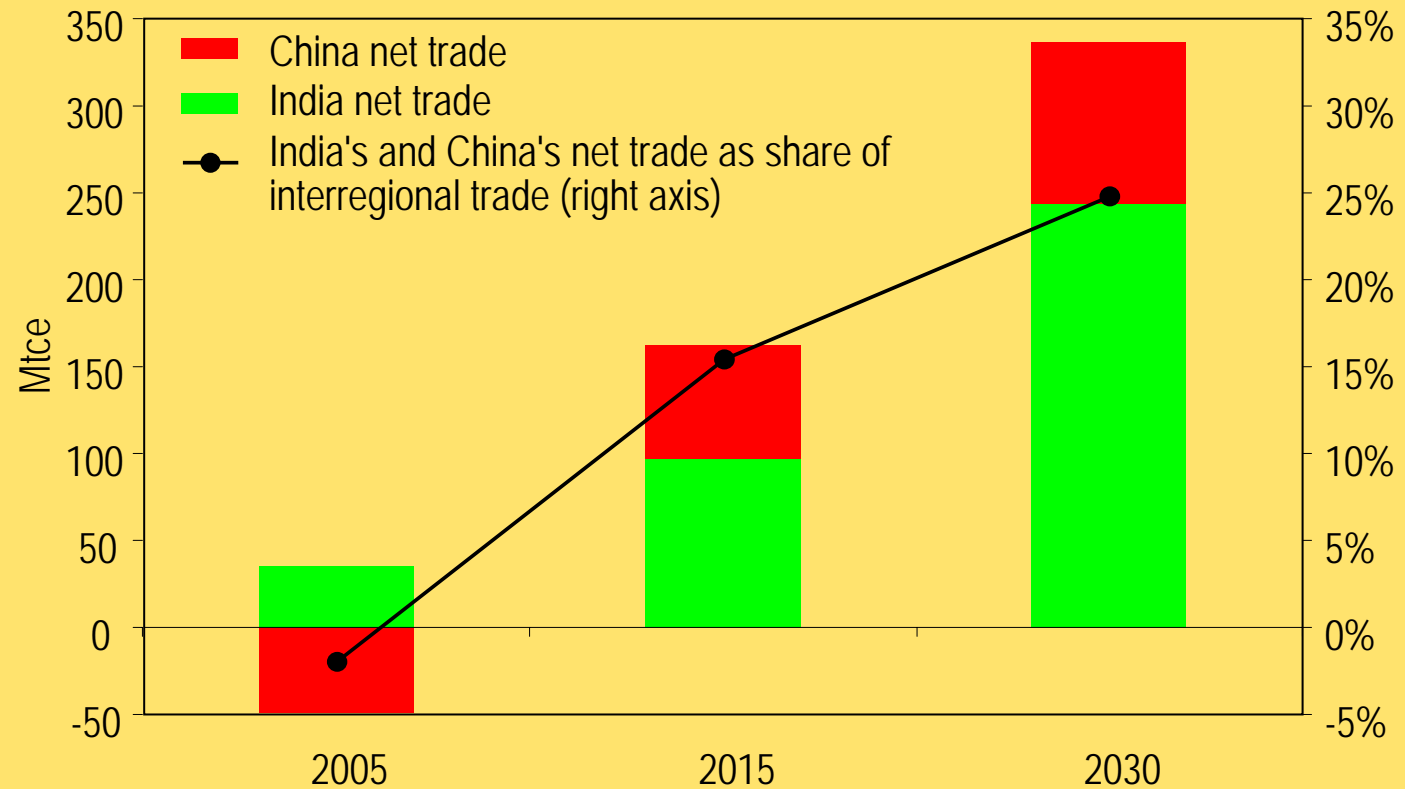


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RS - China & India Coal Imports



China recently became a net coal importer like India, with both putting increasing pressure on international coal markets



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RS - Global Oil Supply Prospects to 2015

- Oil supply/demand balance is set to remain tight
- In total, 37.5 mb/d of gross capacity additions needed in 2006-2015
 - 13.6 mb/d to meet demand & rest to replace decline in existing fields
- OPEC & non-OPEC producers have announced plans to add 25 mb/d through to 2015
- Thus, a further 12.5 mb/d of gross capacity would need to be added or demand growth curbed
- Otherwise, a supply crunch cannot be ruled out



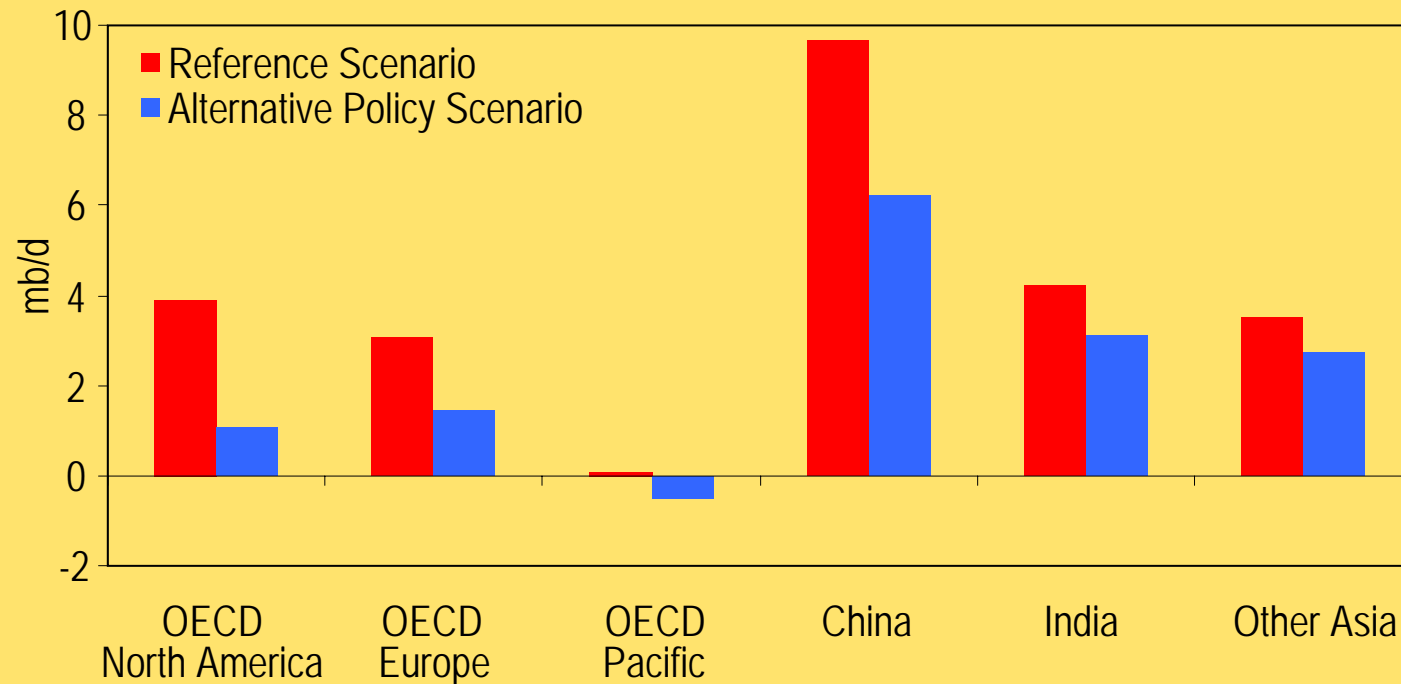
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AS - Increase in Net Oil Imports, 2006-2030



New policies reduce global oil demand by 14 mb/d by 2030, cutting sharply the need for imports



Changing Face of the LNG Industry

	2000	2006	2010 (projection)
Volume	103 mtpa (140 bcm)	159 mtpa (215 bcm)	200-250 mtpa (270-340 bcm)
Middle East's share	17%	24%	31-32%
Biggest exporter	Indonesia (26%)	Qatar (15%)	Qatar (23%)
Japan's share	54%	41%	25%
Players (country/region)	12 exporters 11 importers	13 exporters 16 importers	18/19 exporters 19 importers
Ships	127	219	369

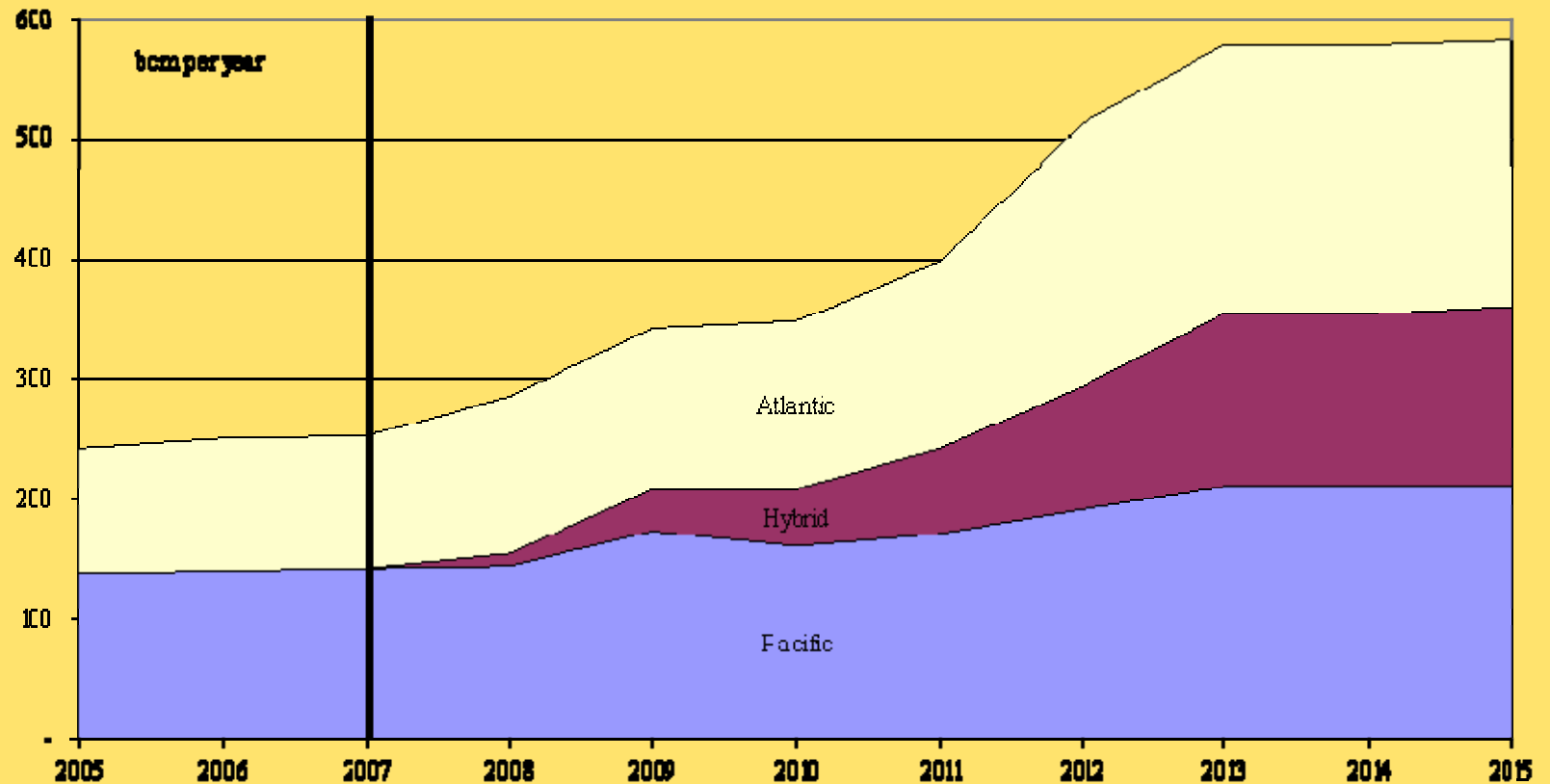


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Liquefaction capacity



Hybrid - more flexibility due to location

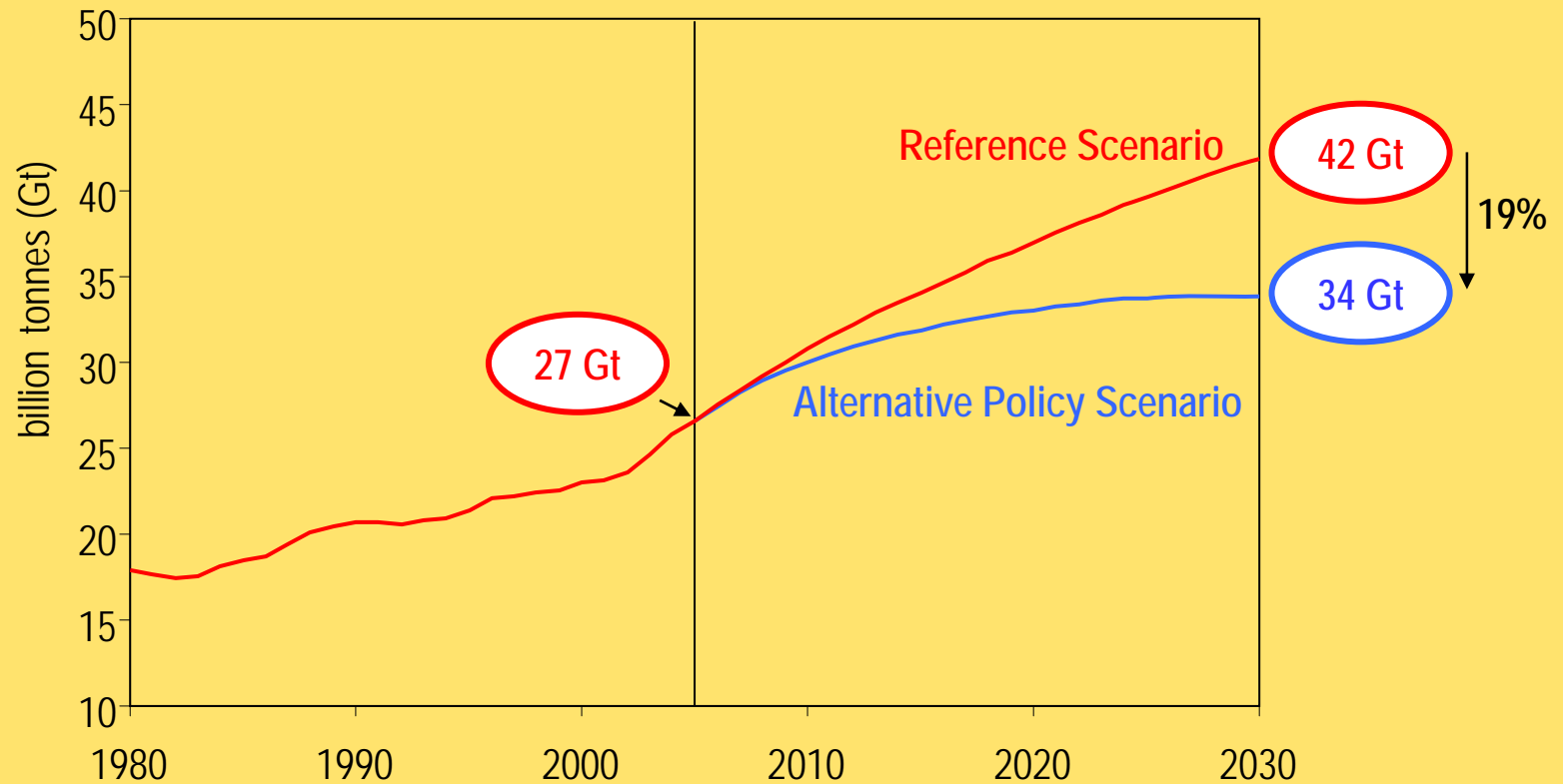


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AS - Global Energy-Related CO₂ Emissions



Global emissions will increase by 57% in the Reference Scenario, but they level off in the Alternative Policy Scenario

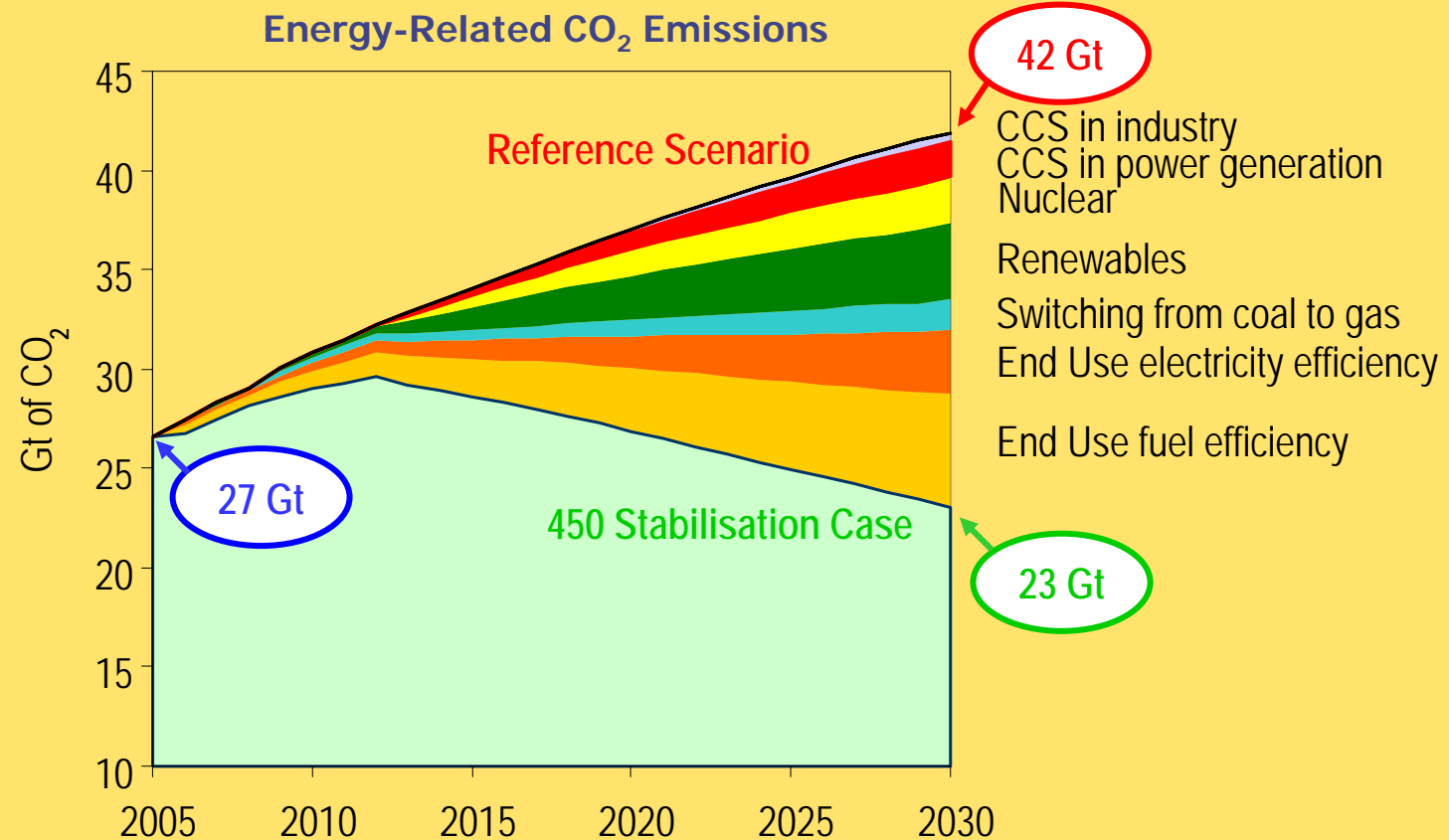


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AS – CO₂ Emissions - 450 Stabilisation Case



**By 2030, emissions are reduced to some 23 Gt,
a reduction of 19 Gt compared with the Reference Scenario**



Conclusions





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Conclusions

● Globally

- *Global energy system is on an increasingly unsustainable path – rectifying this will not be free*
- *China and India are transforming the global energy system by their sheer size and growth, driving up prices*
- *Challenge for all countries is to achieve transition to a more secure, lower carbon energy system*

● Ireland

- *High dependency on fossil fuels which have seen rapid price increases*
- *Investment is required and will have to be paid for by energy users*
 - Electricity interconnector
 - Networks
 - LNG Terminal?