



International
Energy Agency

World Energy Outlook

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The global energy outlook after the crisis

Presentation to Delegation from the Federal Tariff
Service, Russian Federation
Paris, 27 May 2010

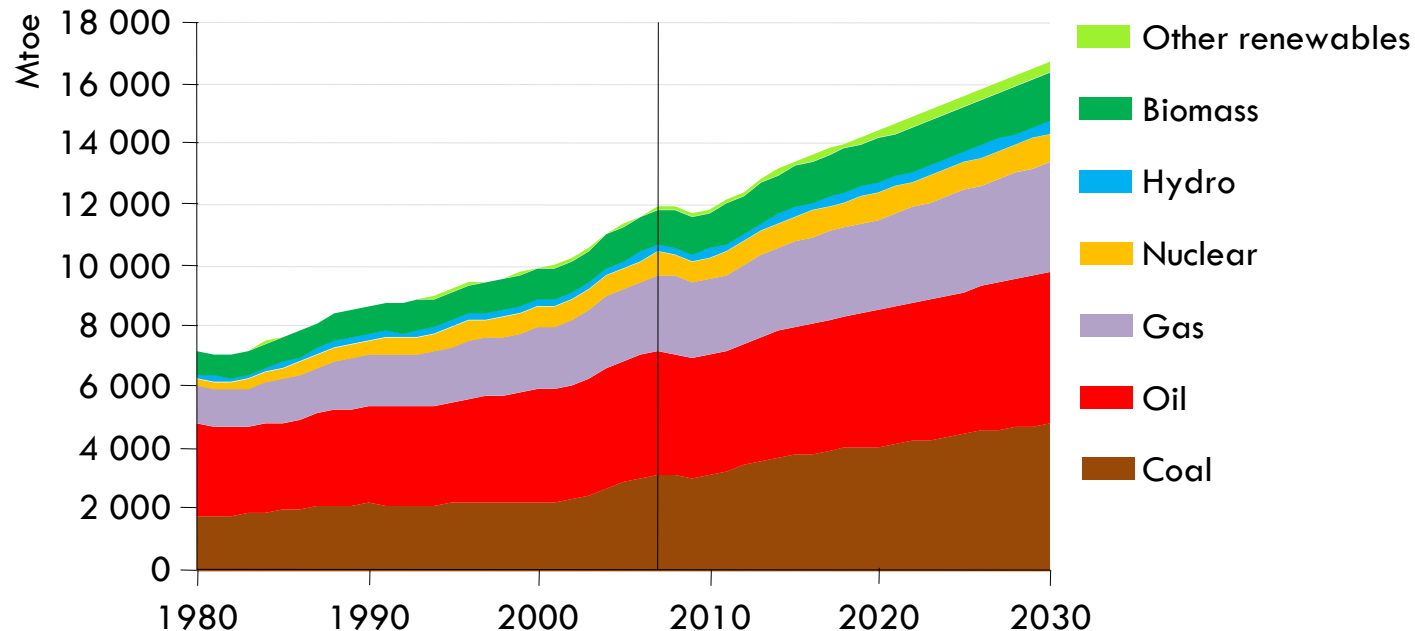
Trevor Morgan
Senior Economist
International Energy Agency

The context

- Signs of recovery from the worst economic slump since the 2nd World War – *but how fast?*
- An oil price collapse & then a rebound – *rising marginal costs point to higher prices in the longer term*
- A slump in energy investment due to the financial & economic crisis – *will it bounce back quickly enough to avert a supply squeeze later?*
- The Copenhagen Accord – *will it pave the way for a stronger deal to ensure that the 2 °C goal is achieved?*

The global energy outlook is for more of the same – *with current government policies*

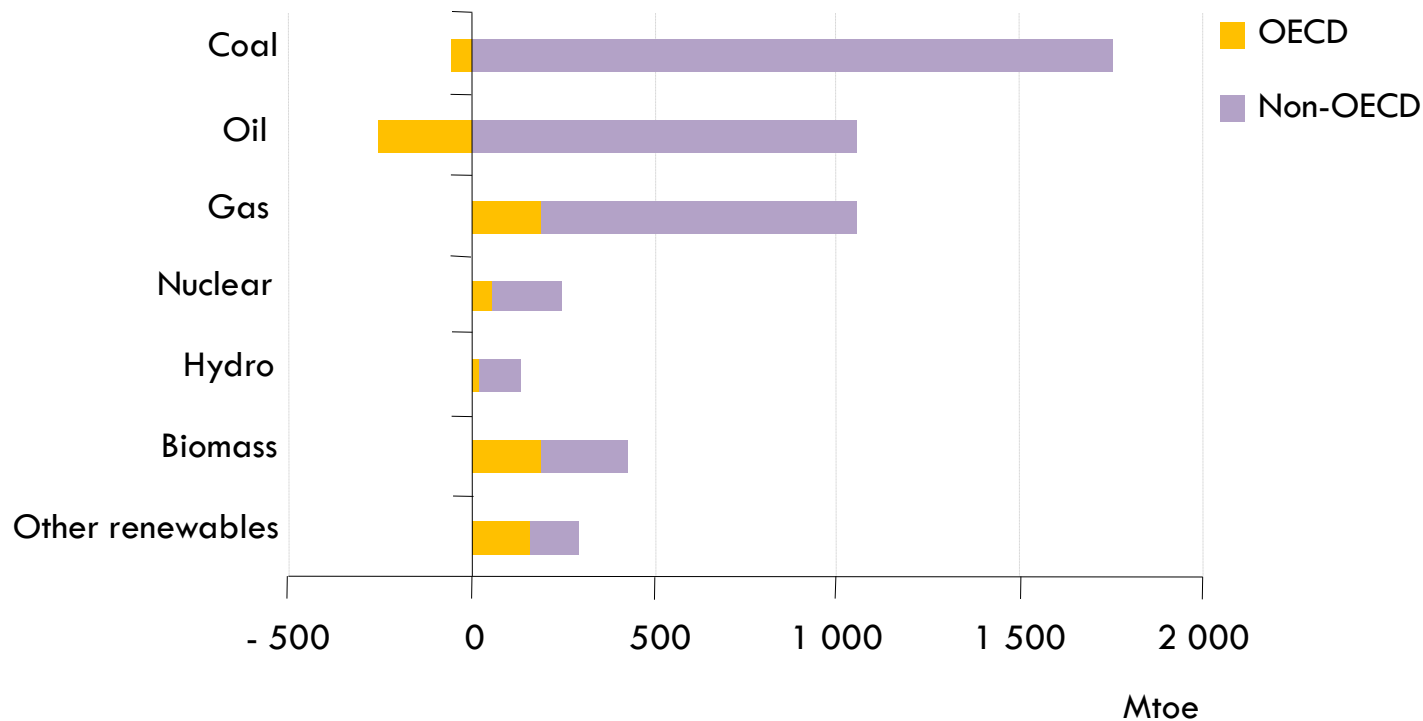
**World primary energy demand by fuel
in the Reference Scenario**



Global demand grows by 40% between 2007 and 2030, with fossil fuels accounting for more than ¾ of the increase

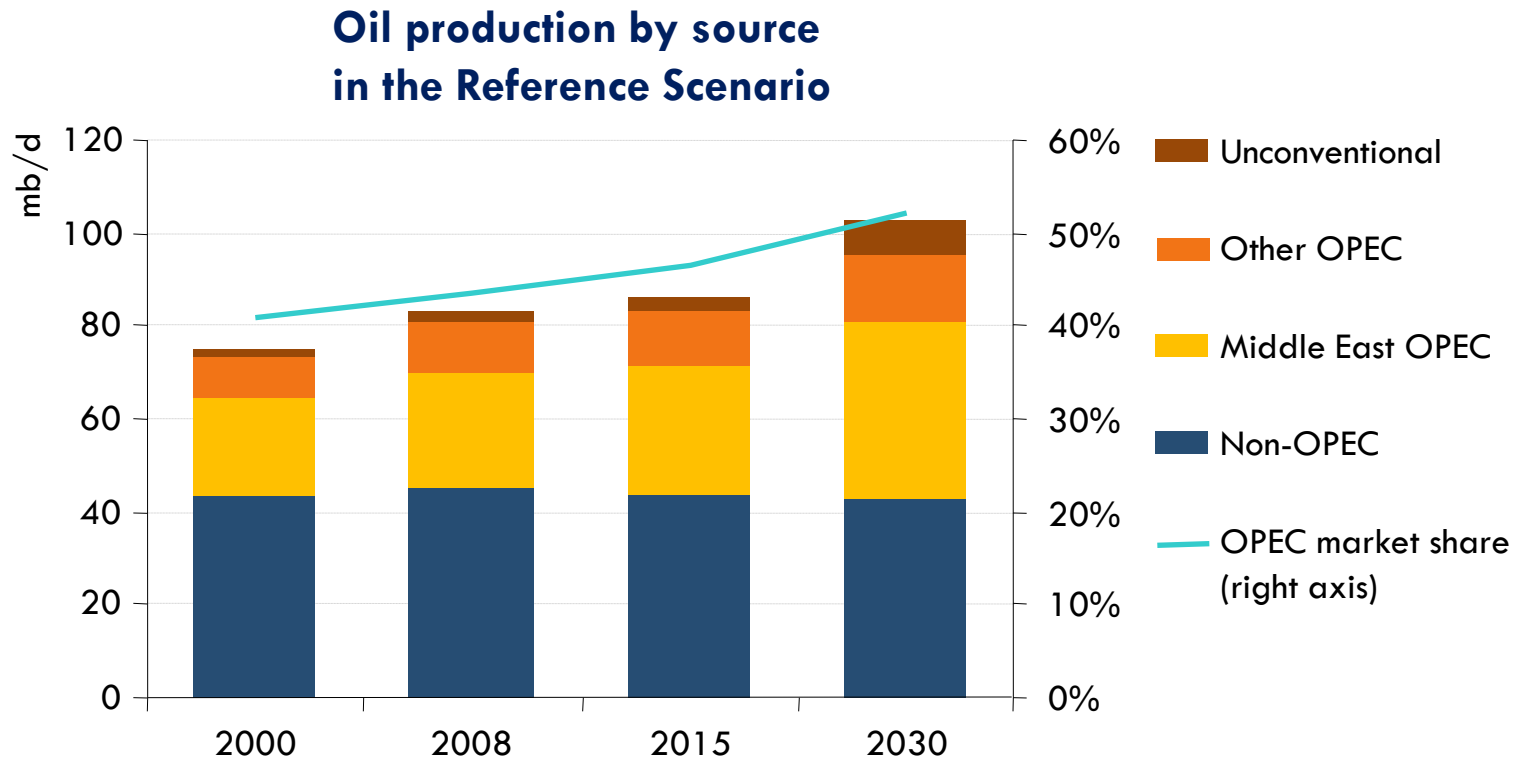
Emerging economies drive demand growth

**Change in primary energy demand by region
in the Reference Scenario, 2007-2030**



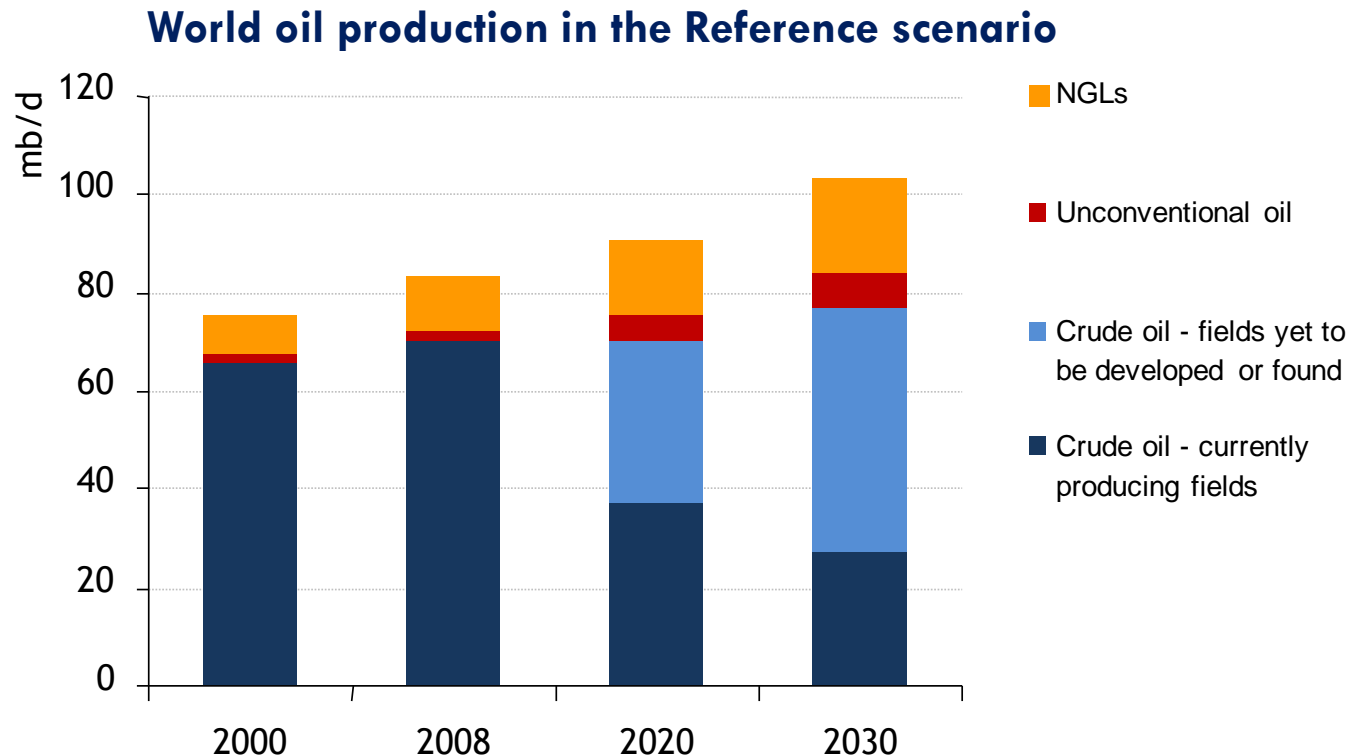
Non-OECD countries account for 93% of the increase in world primary energy demand & all of the growth in oil demand, which rises from 85 mb/d in 2008 to 105 mb/d in 2030

Where would the oil come from?



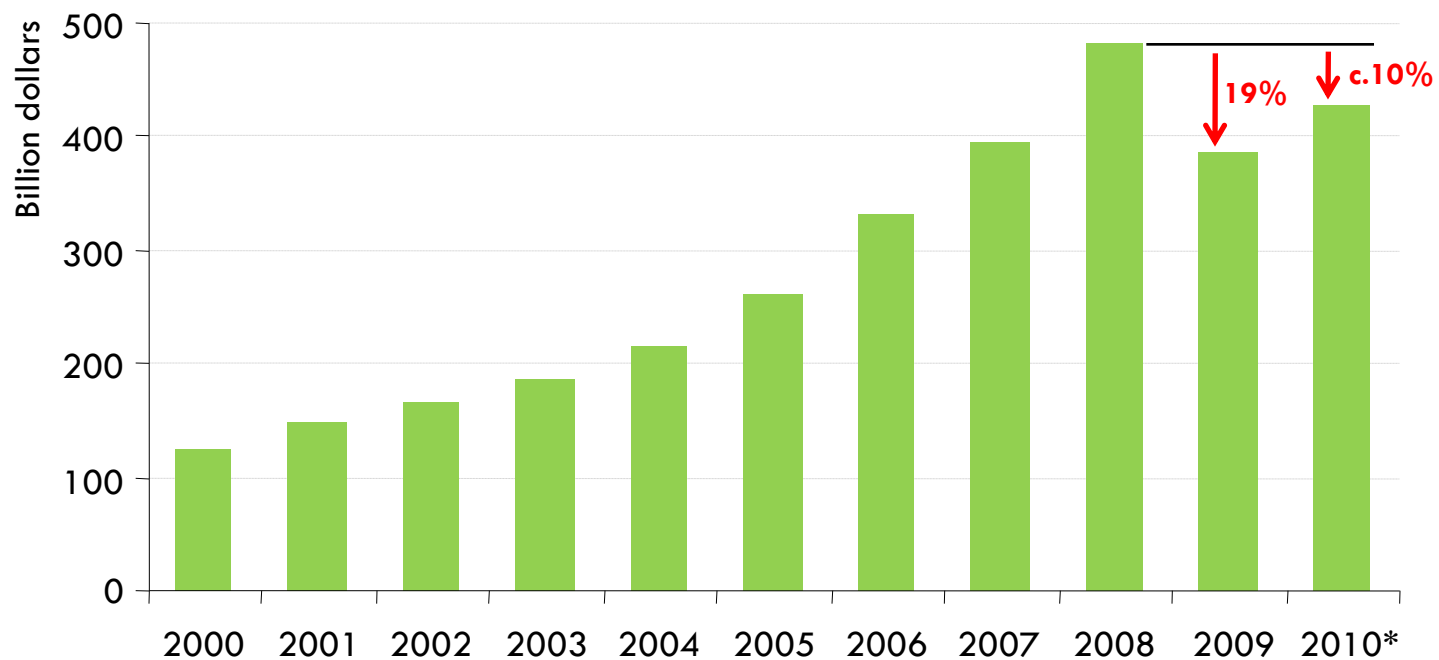
OPEC takes the lion's share of the growth in oil supply as conventional non-OPEC production soon peaks, with unconventional oil also playing a growing role

Decline rates are of critical importance to future upstream oil investment needs



On current policies, 63 mb/d of gross capacity would need to be installed between 2008 & 2030 – equal to 6 times the current capacity of Russia

Worldwide upstream oil & gas investment is beginning to rebound

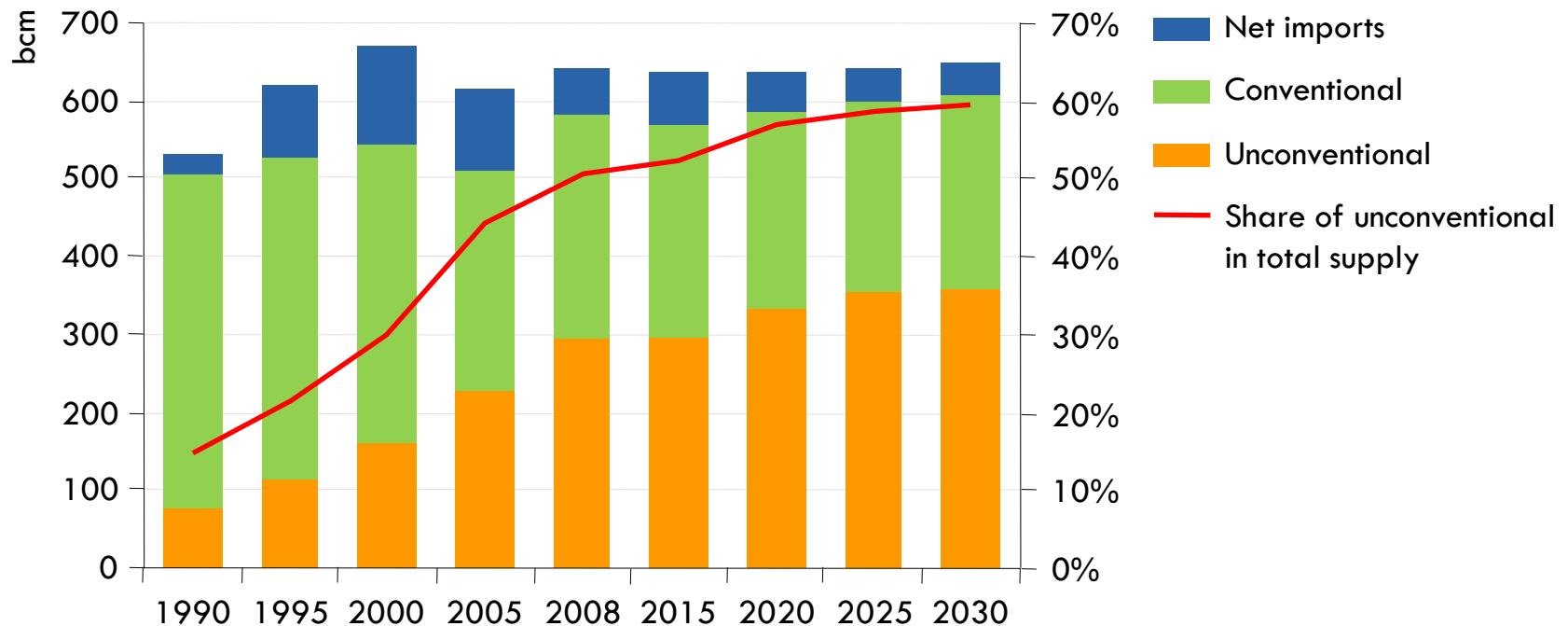


* Planned spending

Global upstream spending fell in 2009, for the first time in a decade, by over \$90 billion in 2009, but is set to bounce back by around 10% in 2010 on current plans

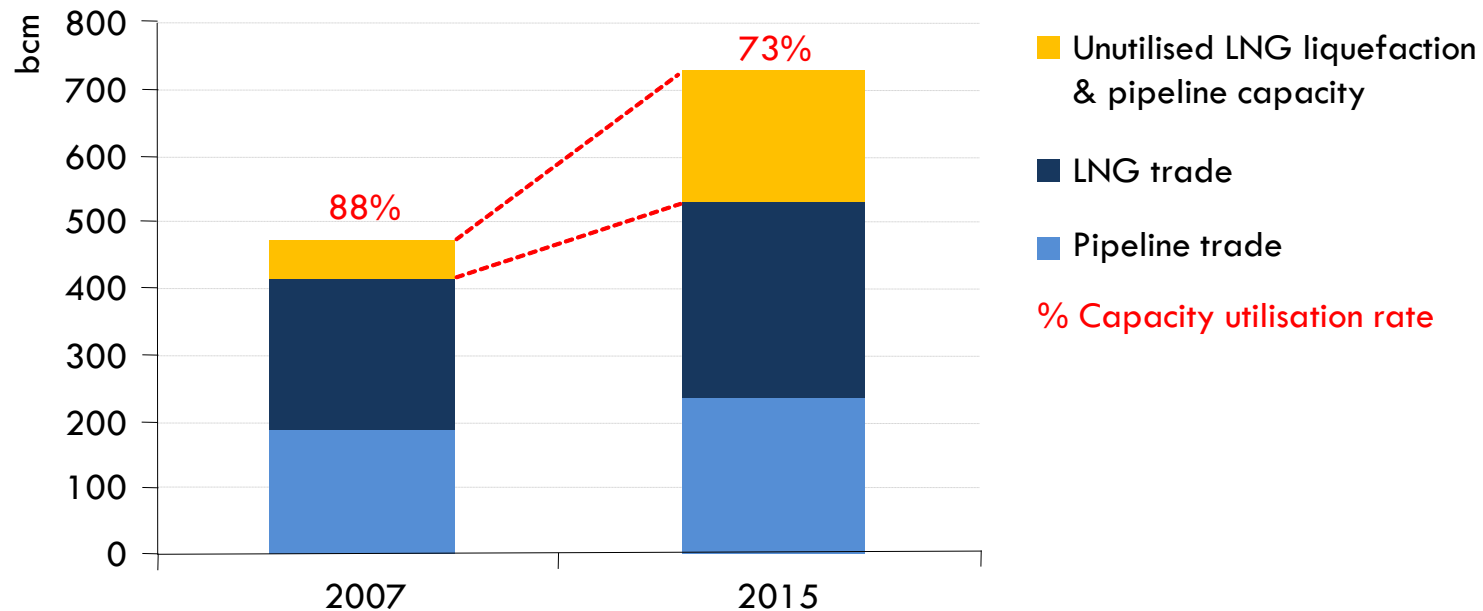
US shale gas is indeed a global gas game-changer

US natural gas supply in the Reference Scenario



Mainly as a result of shale gas production growth, US gas output grows gradually through to 2030, outstripping US demand & squeezing US net imports

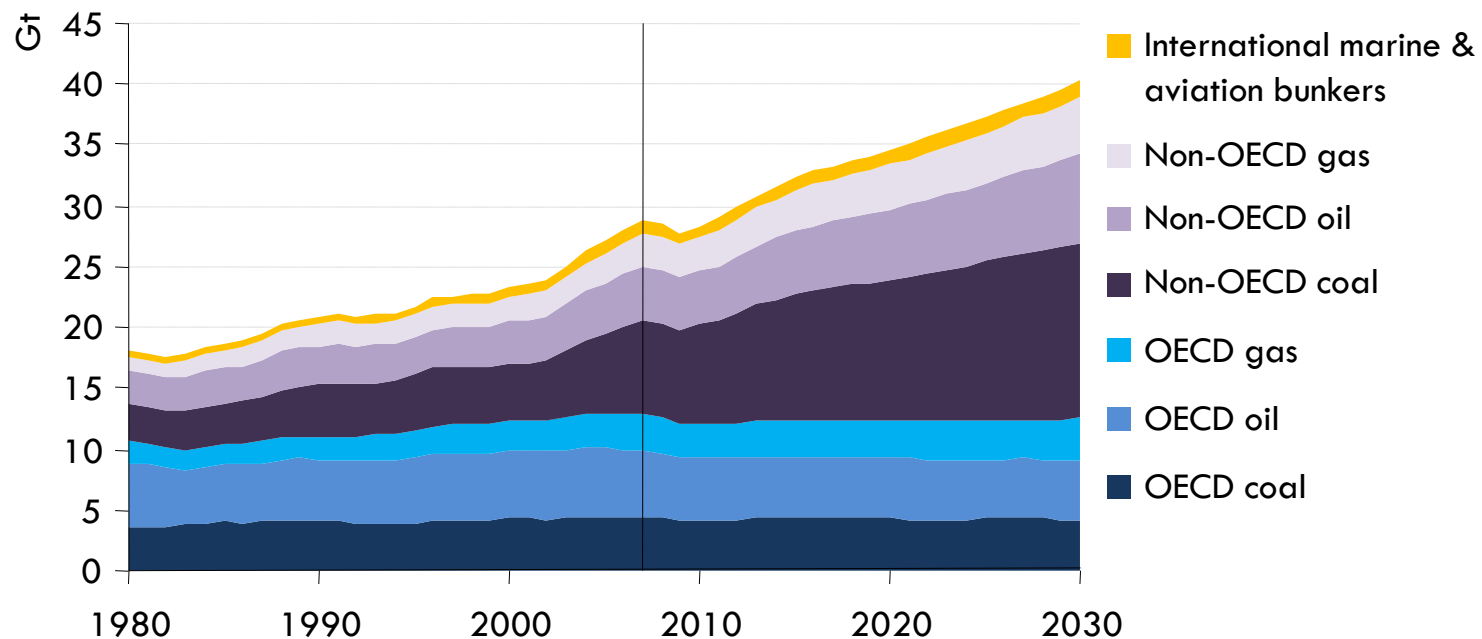
Natural gas inter-regional transportation capacity



A global glut of gas is building – approaching 200 bcm in the next few years – as a result of weaker than expected demand growth & a wave of new capacity additions

Current policies fall far short of what is needed to achieve the Copenhagen objective

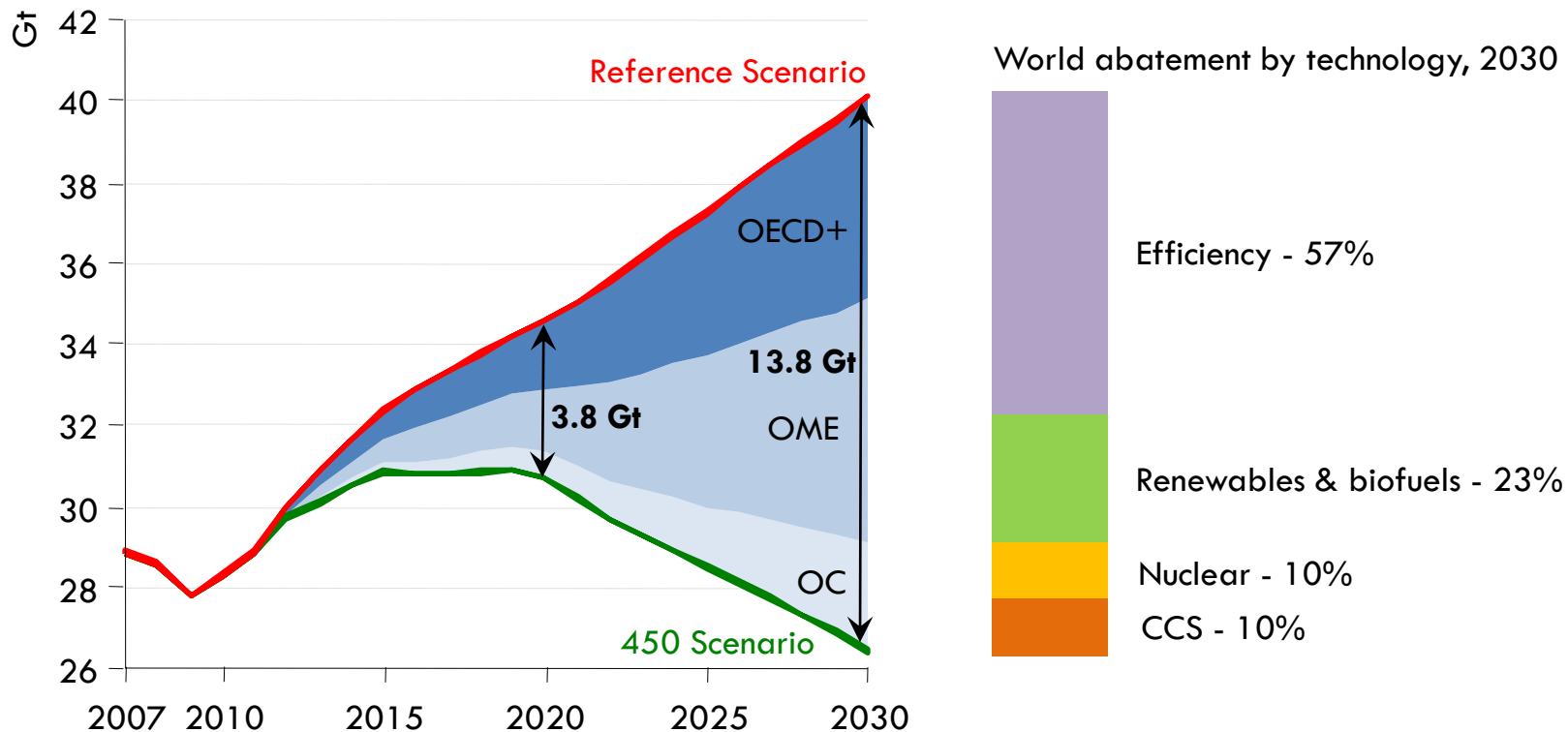
**Energy-related CO₂ emissions
in the Reference Scenario**



CO₂ emissions fell by an estimated 3% in 2009 to under 28 Gt but are set to rebound to 40 Gt in 2030, putting us on course for an eventual rise in global temperature of around 6 °C

Limiting temperature rise to 2 degrees requires big & quick emission reductions in *all* regions

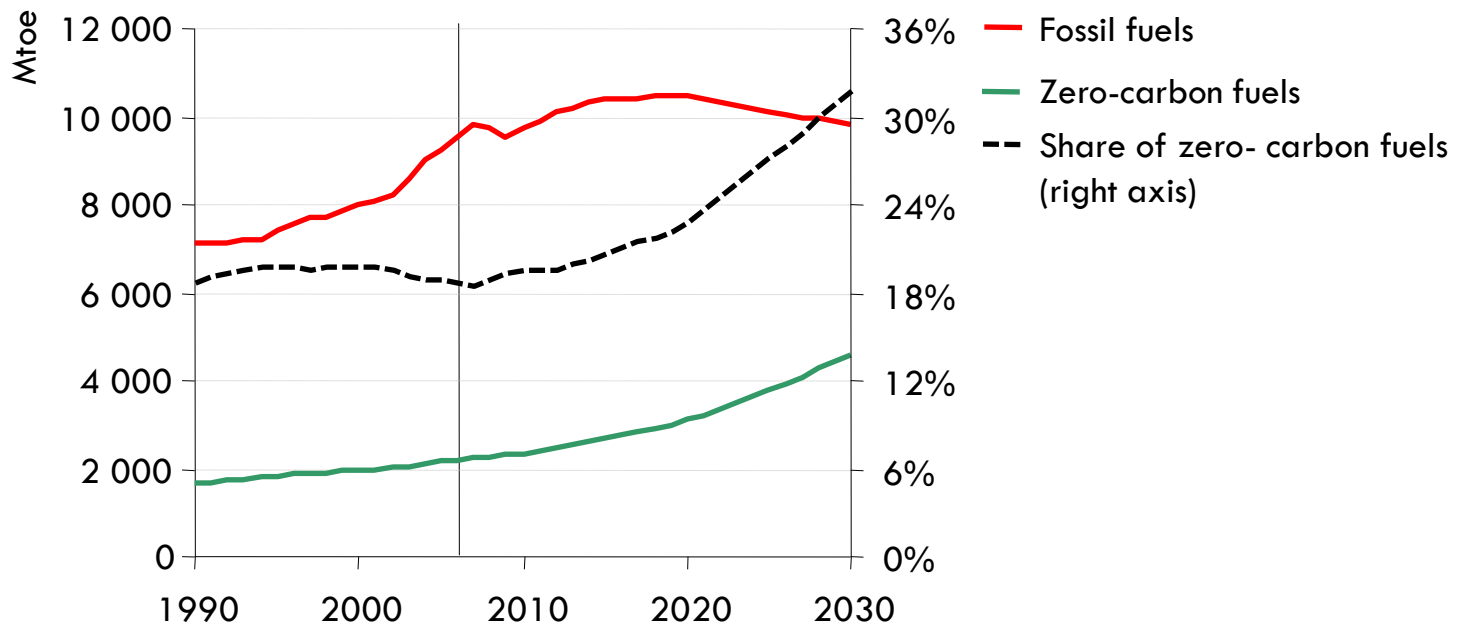
Abatement of world energy-related CO₂ emissions in the 450 Scenario



An additional \$10.5 trillion of investment is needed in total in the 450 Scenario, with measures to boost energy efficiency accounting for most of the abatement through to 2030

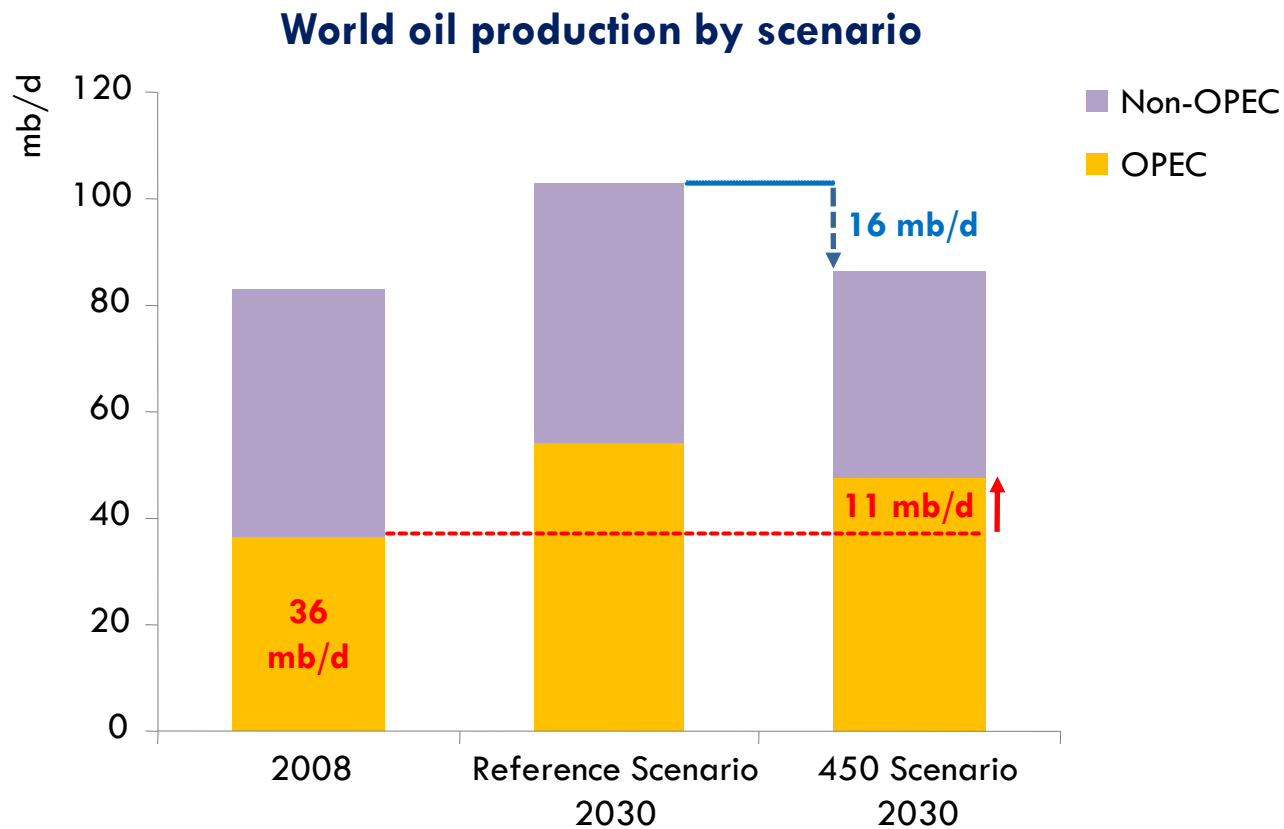
A rapid decarbonisation of the global fuel mix is required

World primary energy demand by fuel in the 450 Scenario



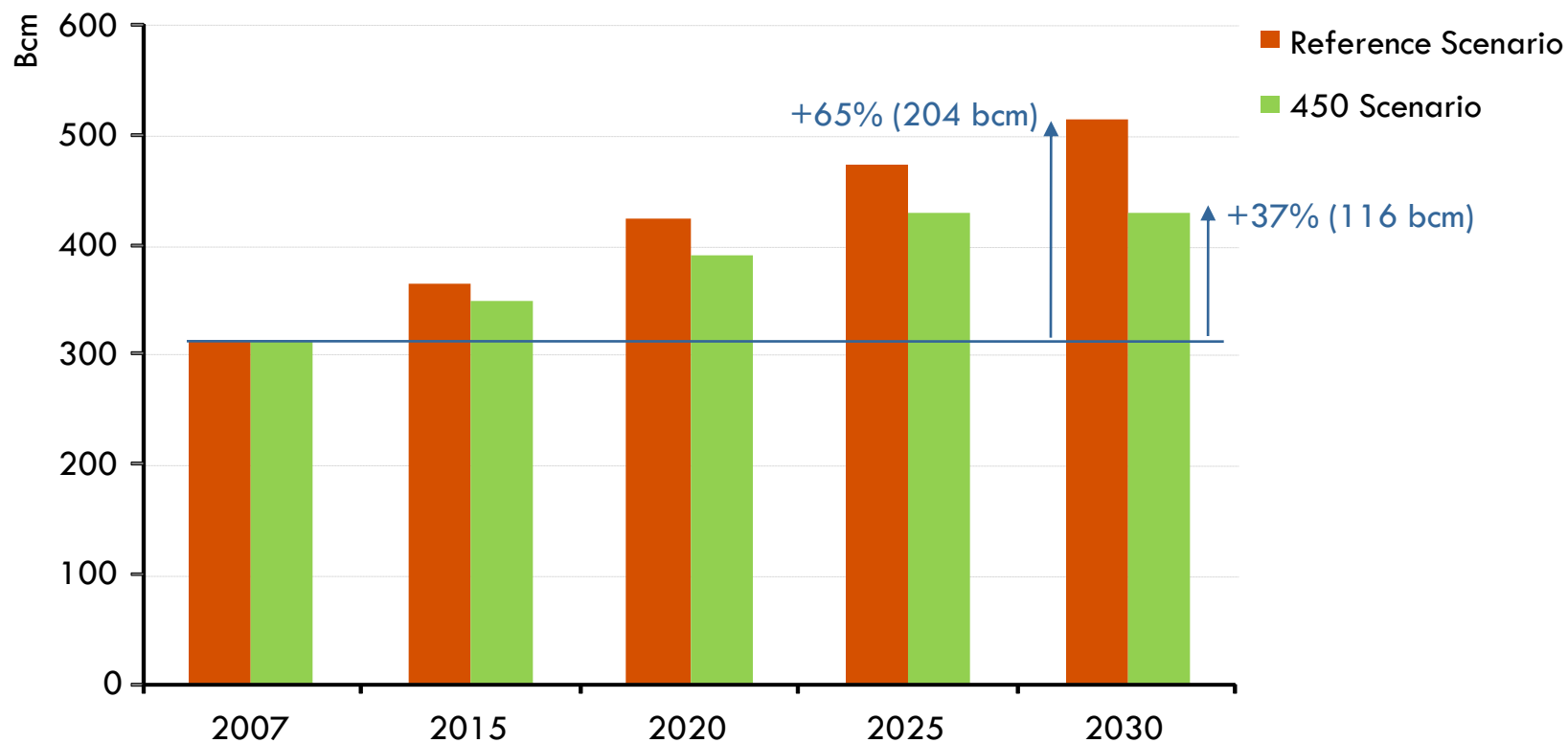
In the 450 Scenario, demand for fossil fuels peaks by 2020, with zero-carbon fuels making up a third of the world's primary sources of energy demand by 2030

Non-OPEC producers would bear the brunt of lower demand



Curbing CO₂ emissions would improve energy security by cutting demand for oil, but even in the 450 Policy Scenario, OPEC production increases by 11 mb/d between now and 2030

EU primary natural gas imports by scenario



EU gas imports continue to grow in the 450 Scenario, but plateaus by around mid-2020s

Concluding remarks

- The financial crisis has halted the rise in global energy use, but its long-term upward path will resume soon on current policies
- Oil investment has fallen sharply, posing questions on medium term supply
- A sizable glut of natural gas is developing
- A 450 path requires massive investments, but would bring substantial benefits
- Natural gas can play a key role as a bridge to a cleaner energy future
- Copenhagen Accord a politically significant step towards a legally binding deal, but not sufficient to limit temperature rise to 2 °C

WEO will be back in 2010...

- A full update of energy projections through to 2035
- In-depth analysis of headline issues
 - > *Climate policy*
 - > *Fossil energy subsidies*
 - > *Outlook for renewables*
 - > *Unconventional oil*
 - > *Energy poverty*
 - > *Outlook for Caspian energy*



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Thank you

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