

BP Statistical Review of World Energy

June 2013

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Energy in 2012 – Adapting to a changing world



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Energy in 2012 – Adapting to a changing world

Paul Appleby, Head of Energy Economics
Ankara, 3rd October



Outline



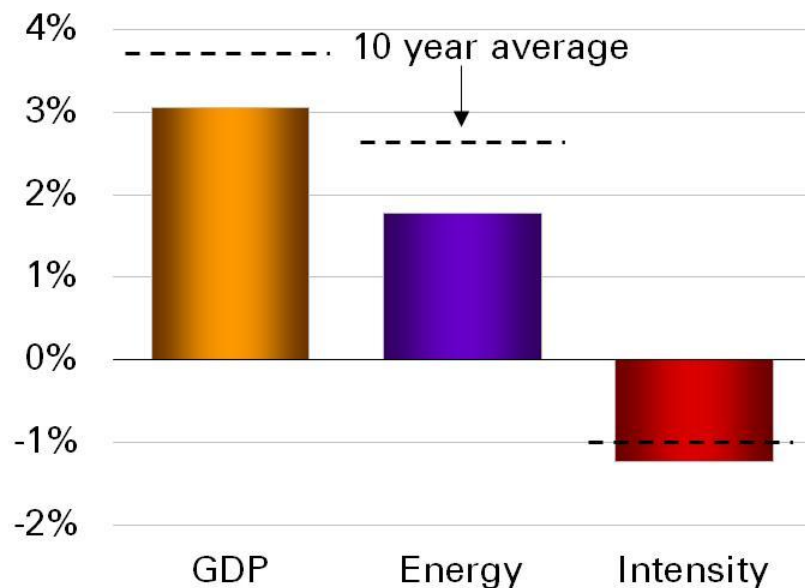
- Introduction
- 2012 in long-term context
- Fuel by fuel
- Concluding remarks



Energy in 2012

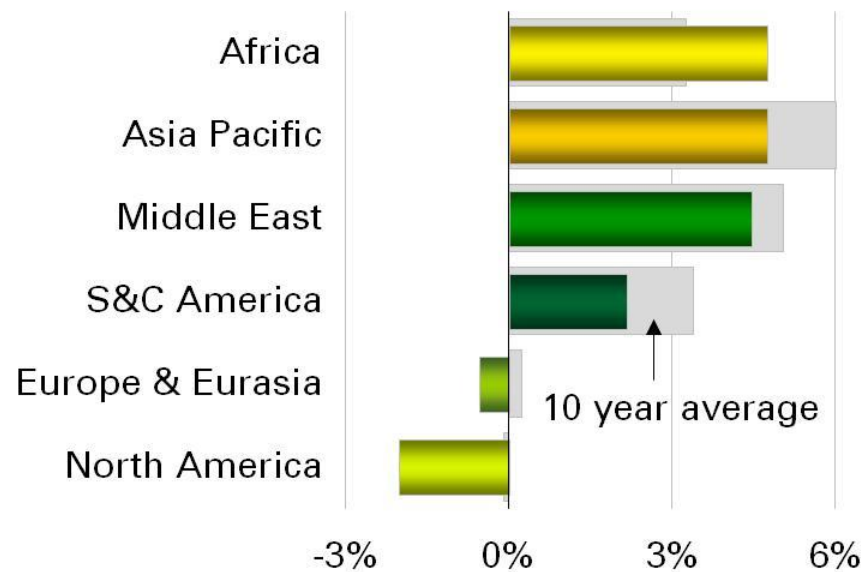
Energy and GDP

Annual change, %



Energy growth by region

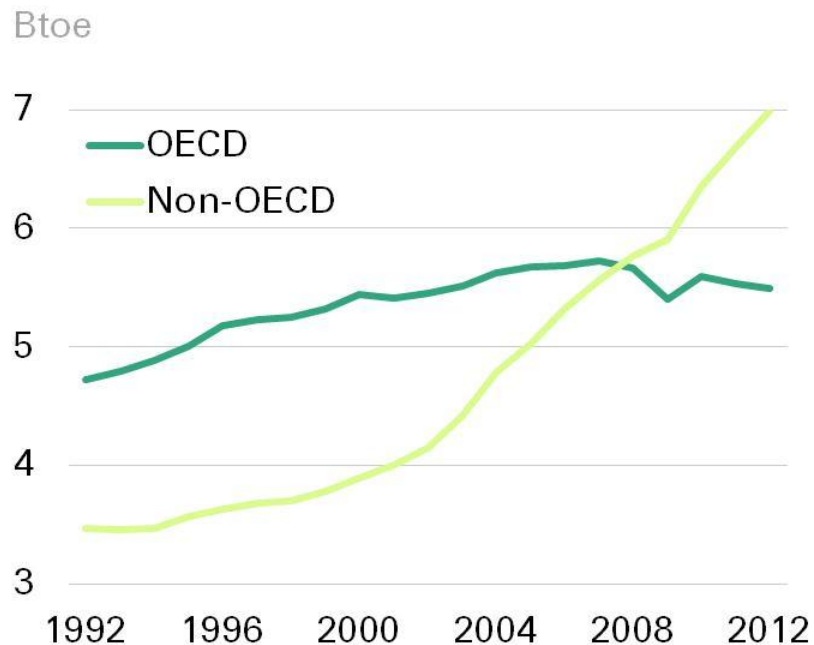
Annual change, %





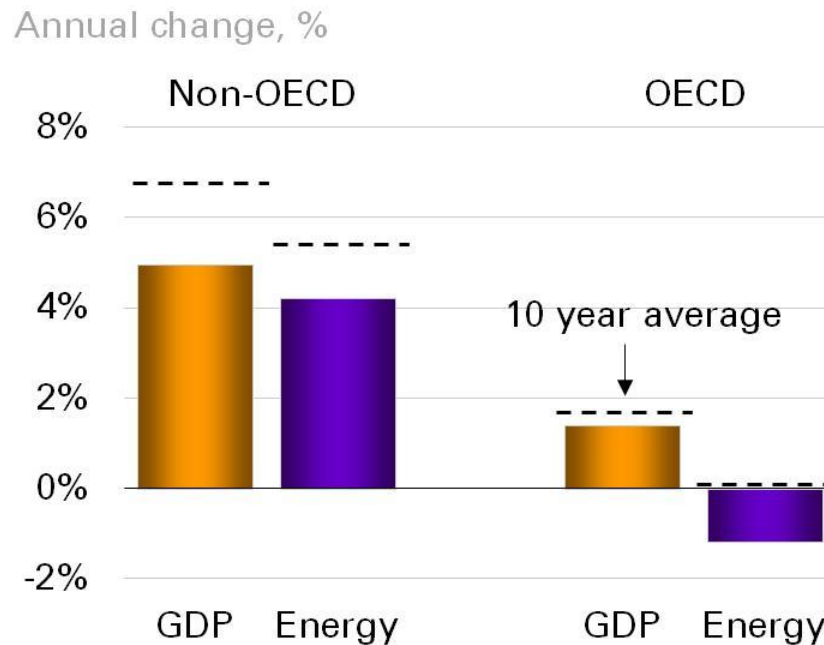
Long-term energy trends

Primary energy demand



Source: includes data from Oxford Economics

Energy and GDP in 2012



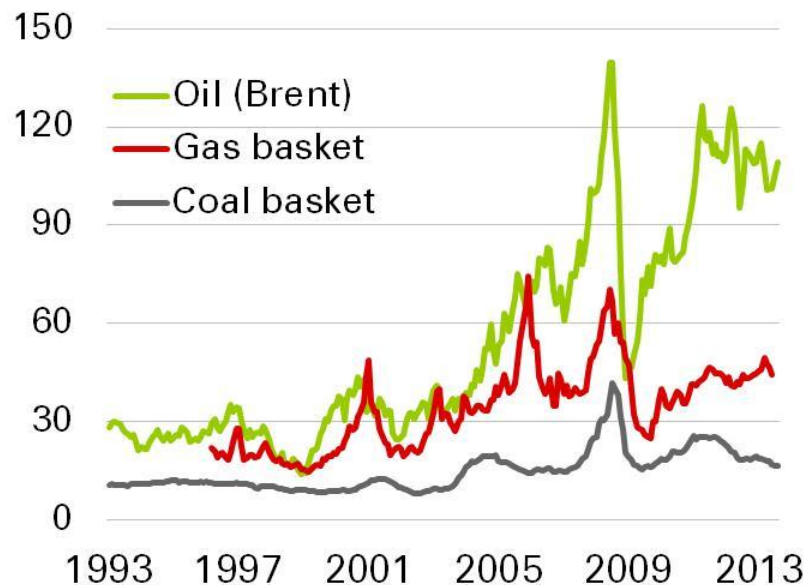
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Energy prices

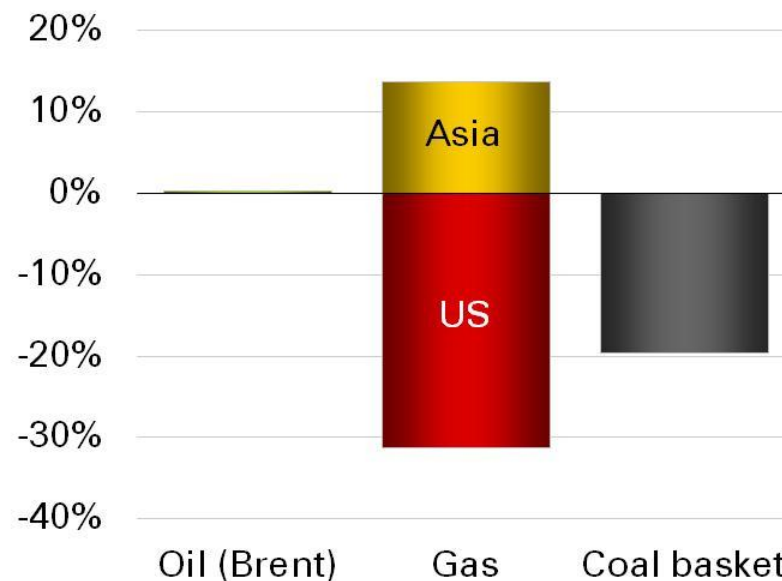
Inflation adjusted prices

\$2012/boe, monthly



2012 price changes

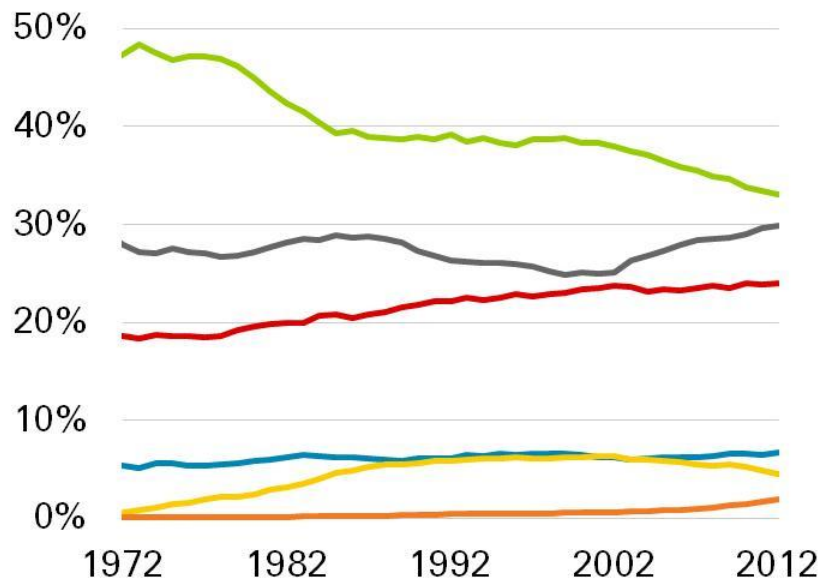
Annual change, %





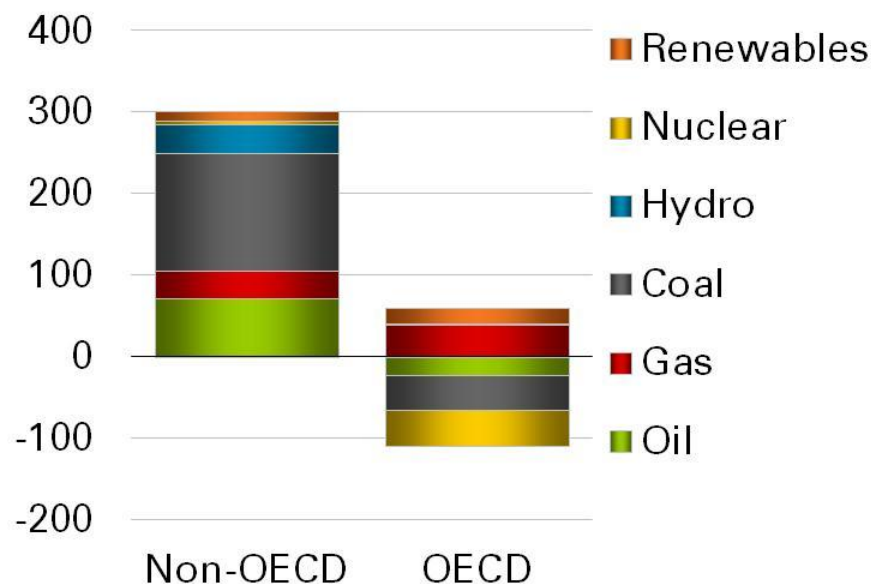
The evolving fuel mix

Shares of global primary energy



2012 energy consumption changes

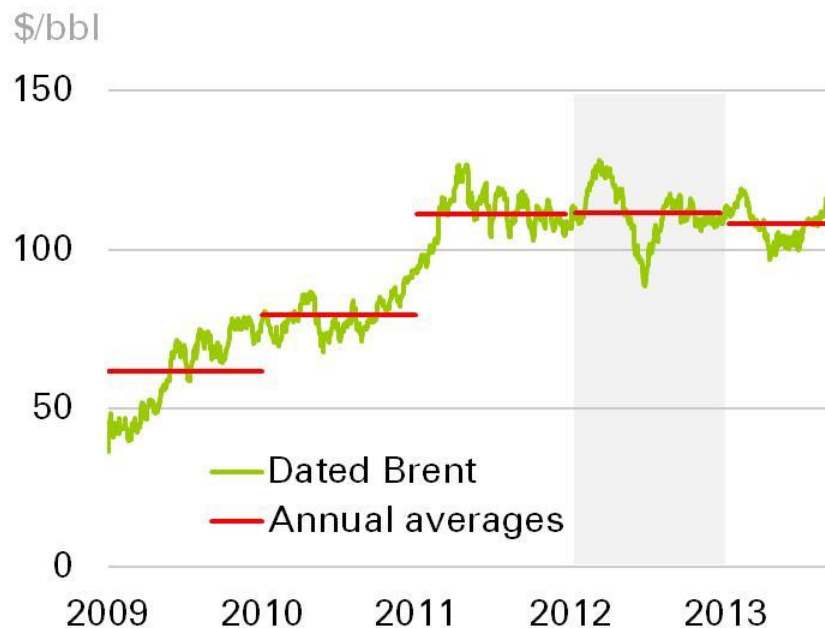
Annual change, Mtoe





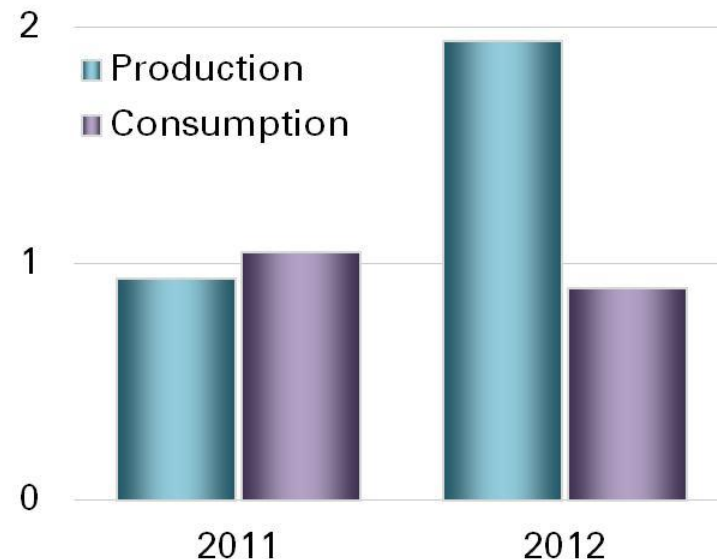
The oil market in 2012

The price of oil



Production and consumption growth

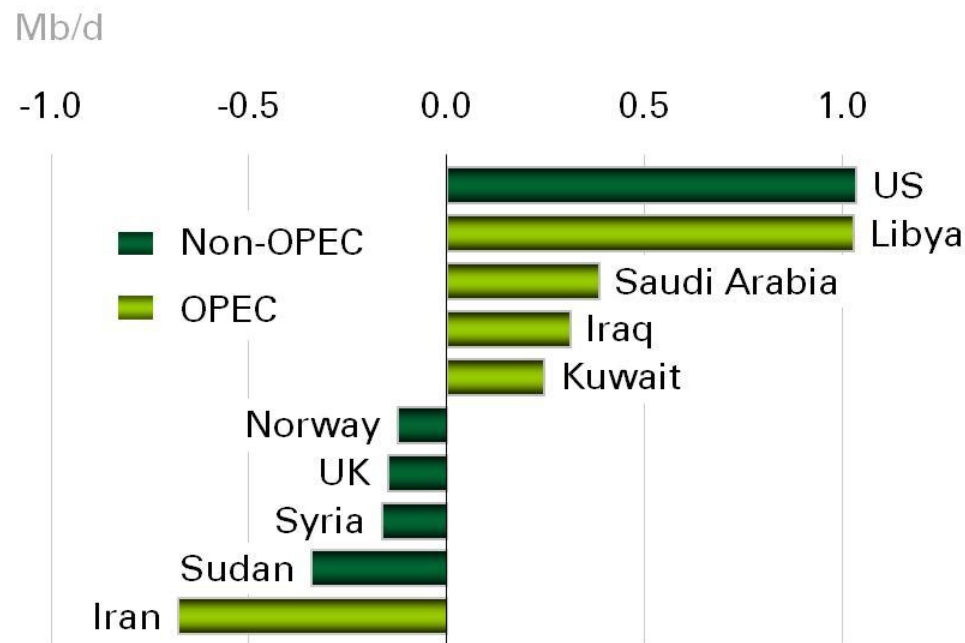
Annual change, Mb/d



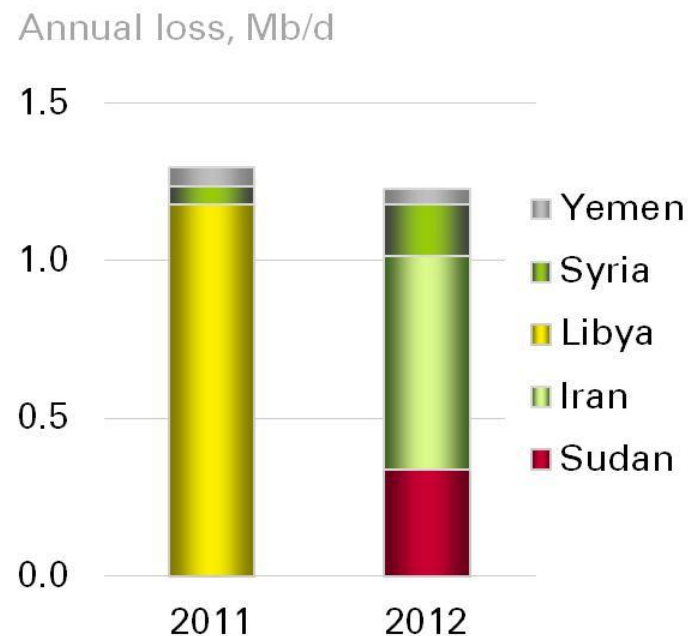


Oil production in 2012

Largest changes



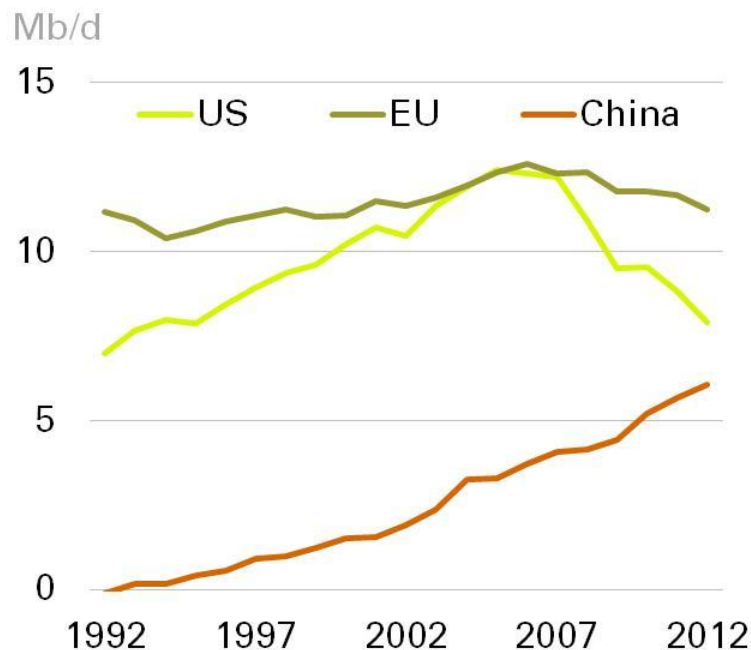
Supply disruptions





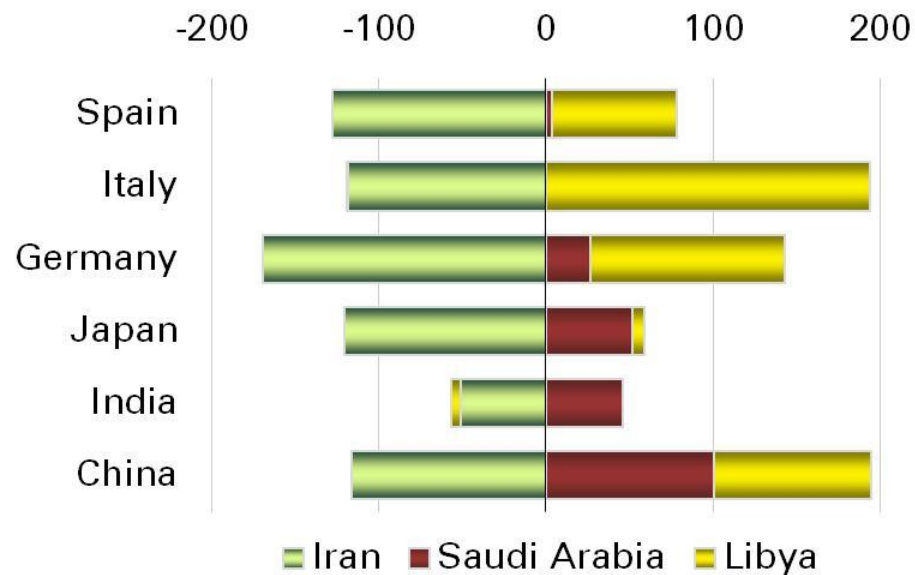
Emerging oil trade patterns

Net oil imports



Adjustment to 2012 disruptions

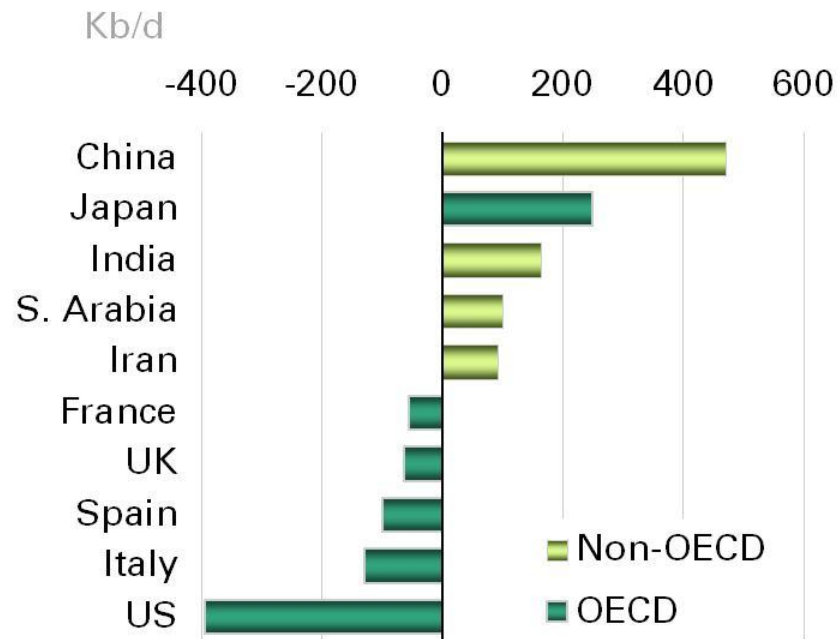
Change in trade, Kb/d



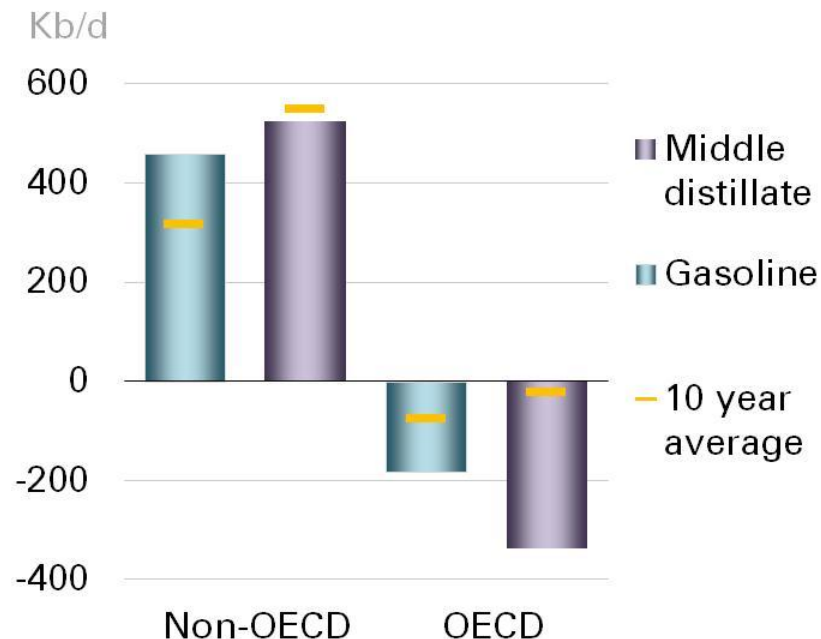


Oil consumption in 2012

Largest changes



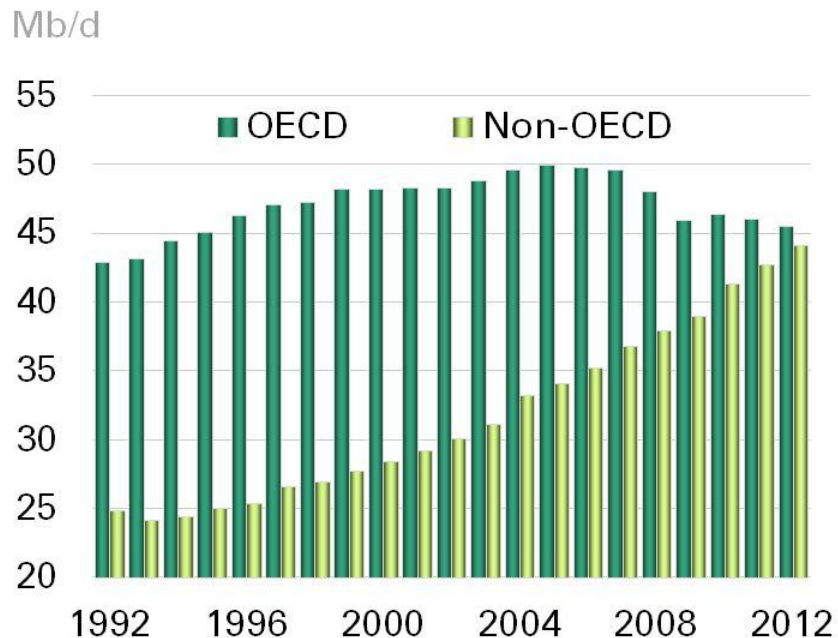
Growth by product type





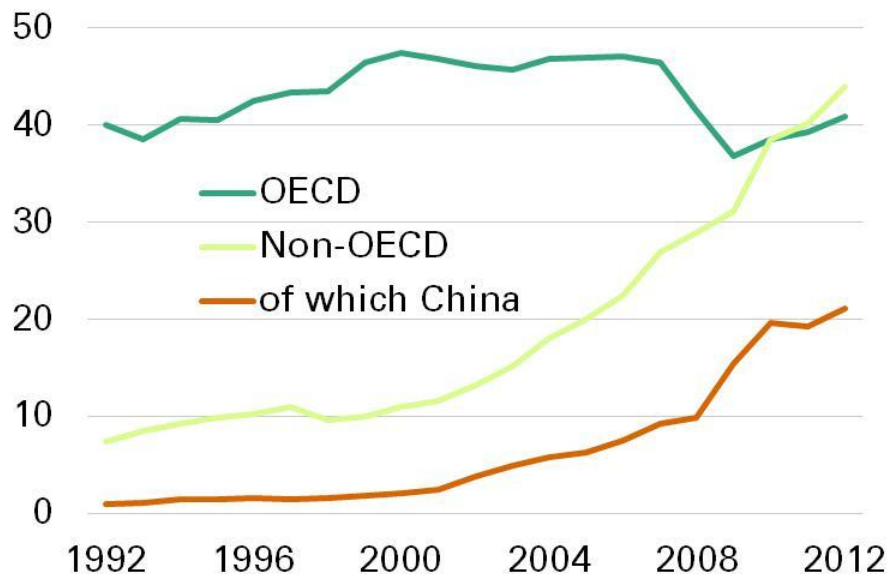
Oil consumption and mobility

Oil consumption trends



Vehicle sales

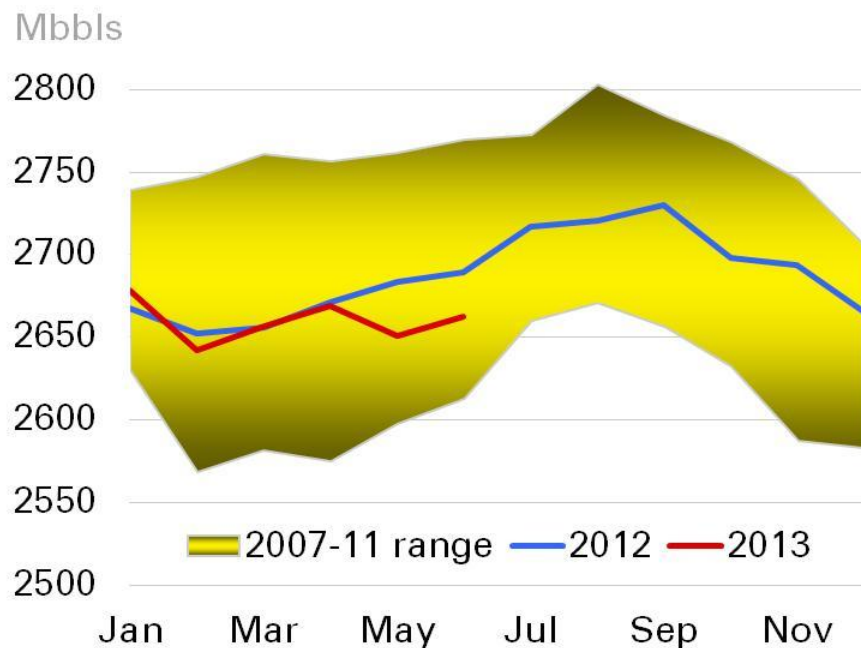
New registrations (millions)





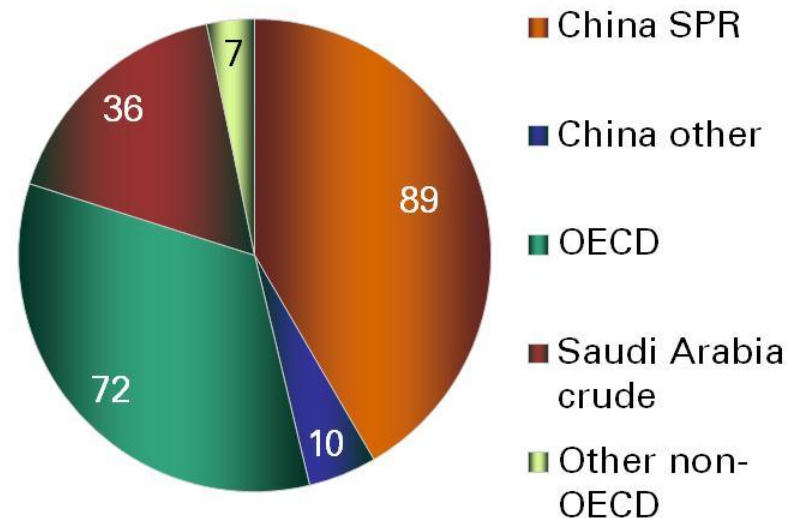
Oil inventories

OECD commercial inventories



Inventory increases in 2012

Mbbbls

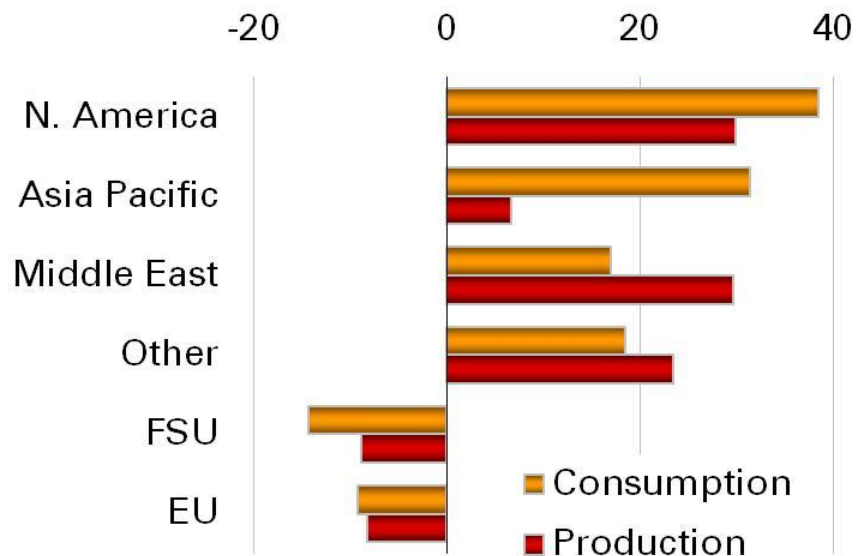




Global natural gas balance

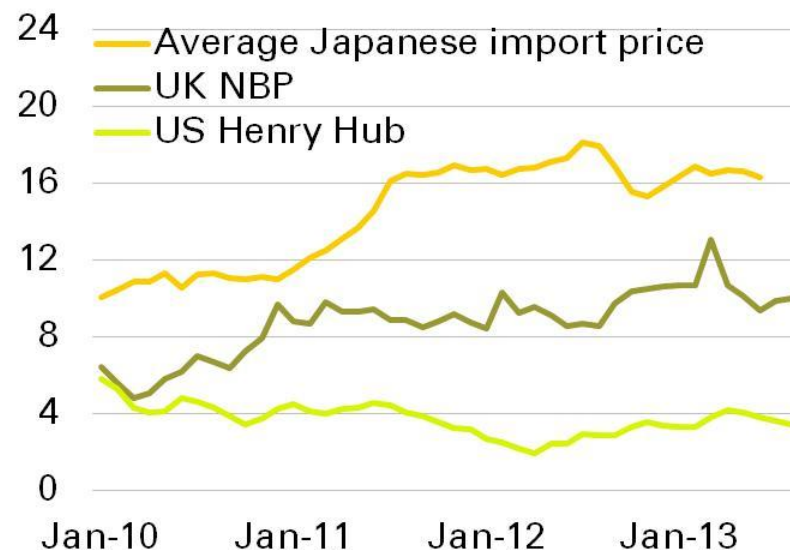
Global growth in 2012

Annual change, Bcm



International gas prices

\$/mmBtu

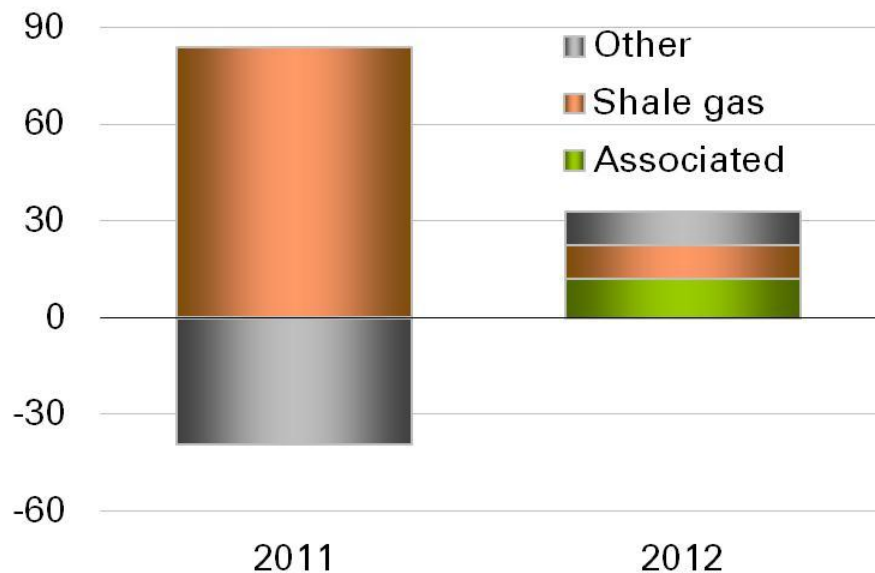




US natural gas production

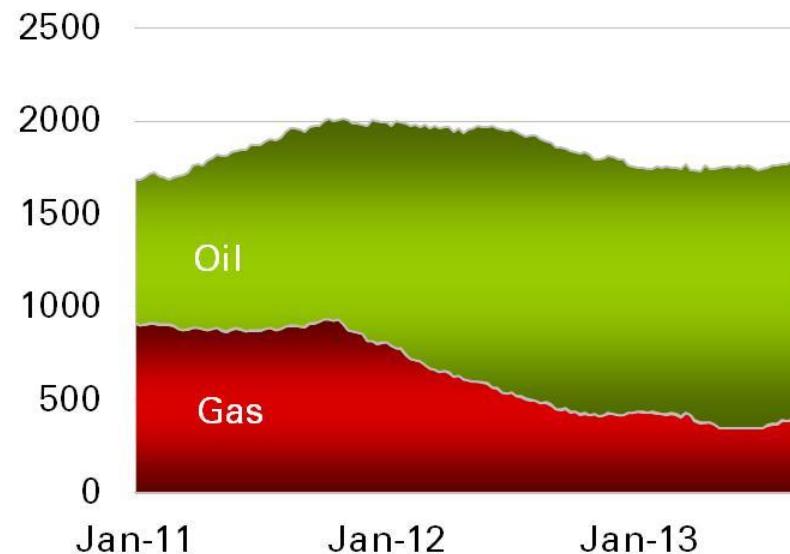
Production growth

Annual change, Bcm



Rig count

Count

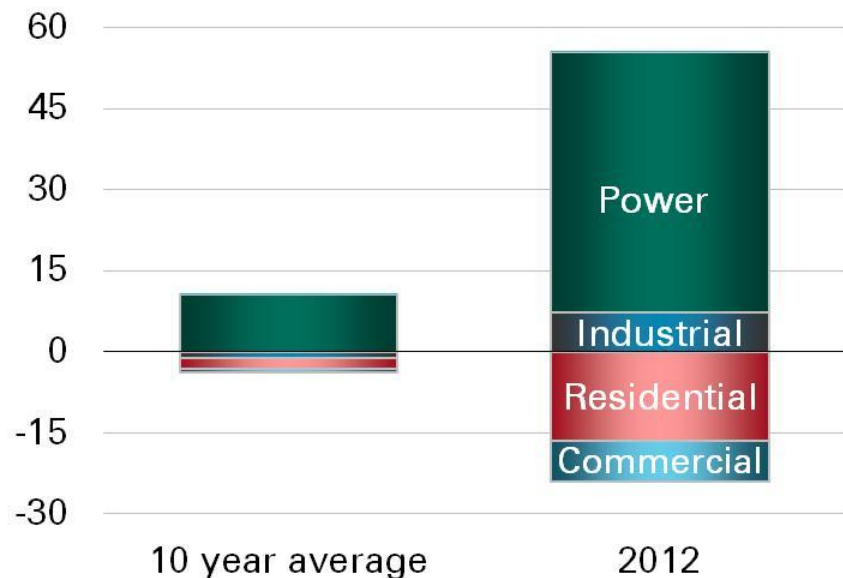




US coal to gas switching

Natural gas consumption growth

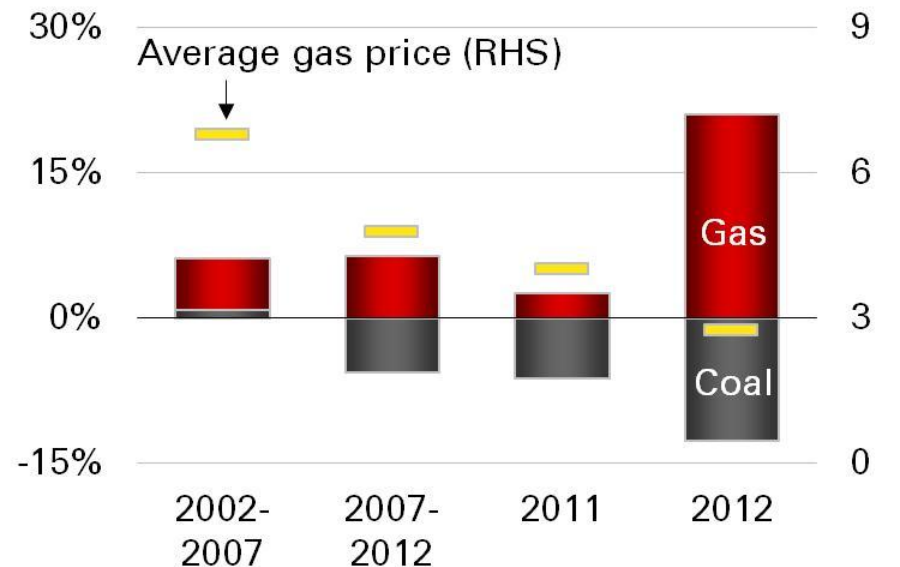
Annual change, Bcm



Power generation

Annual change, %

\$/mmBtu

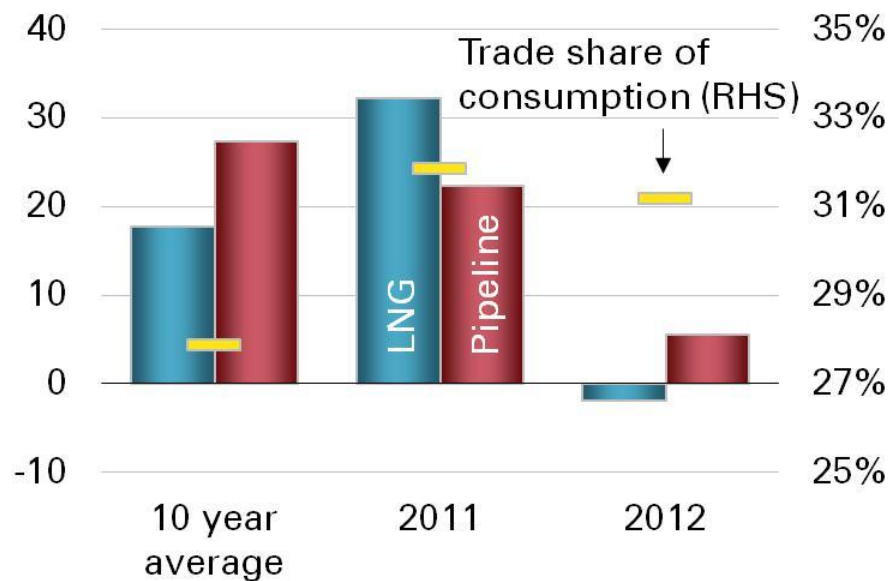




Natural gas trade

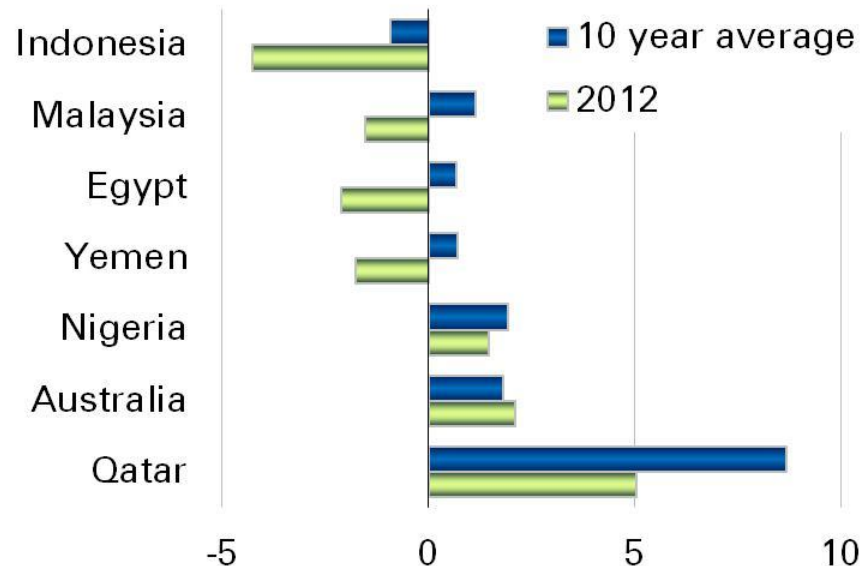
LNG and pipeline trade

Annual change, Bcm



LNG exports

Annual change, Bcm

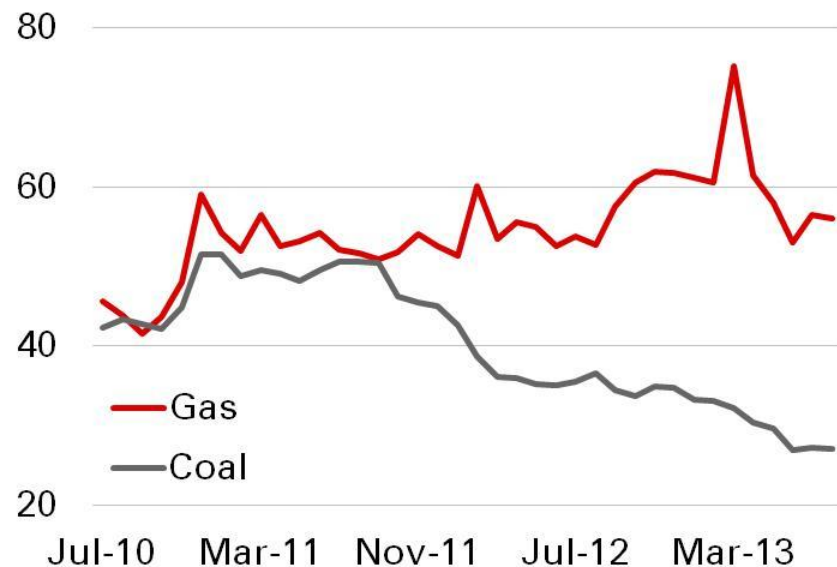




European gas-coal competition

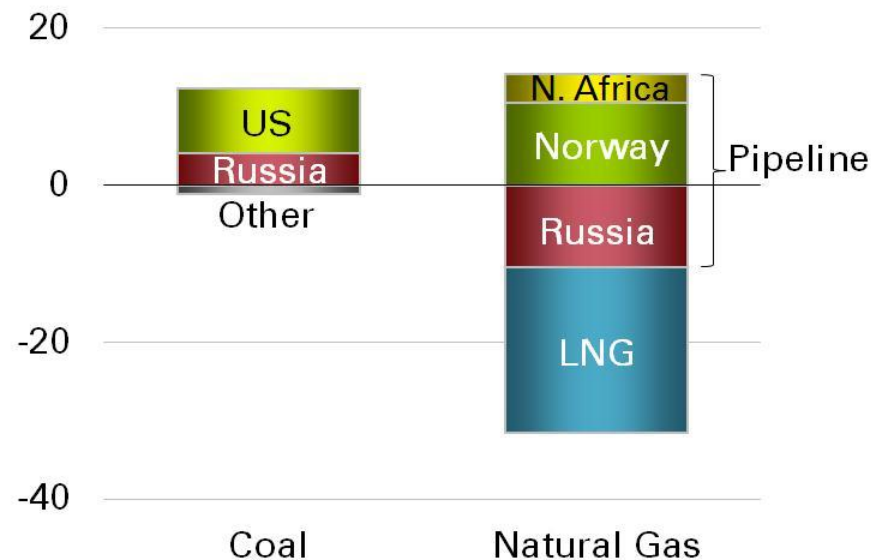
EU power generation cost

€/MWh



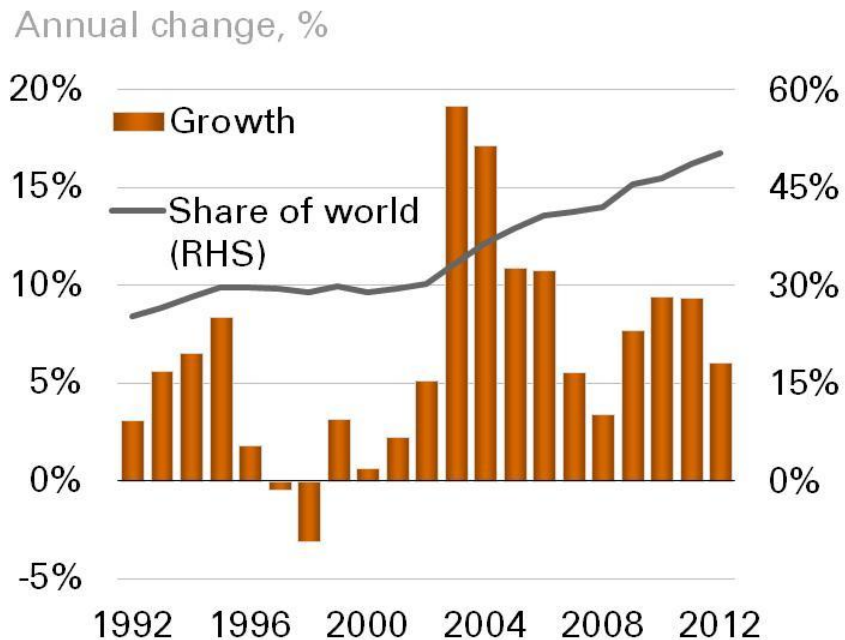
2012 changes in EU imports

Annual change, Mtoe

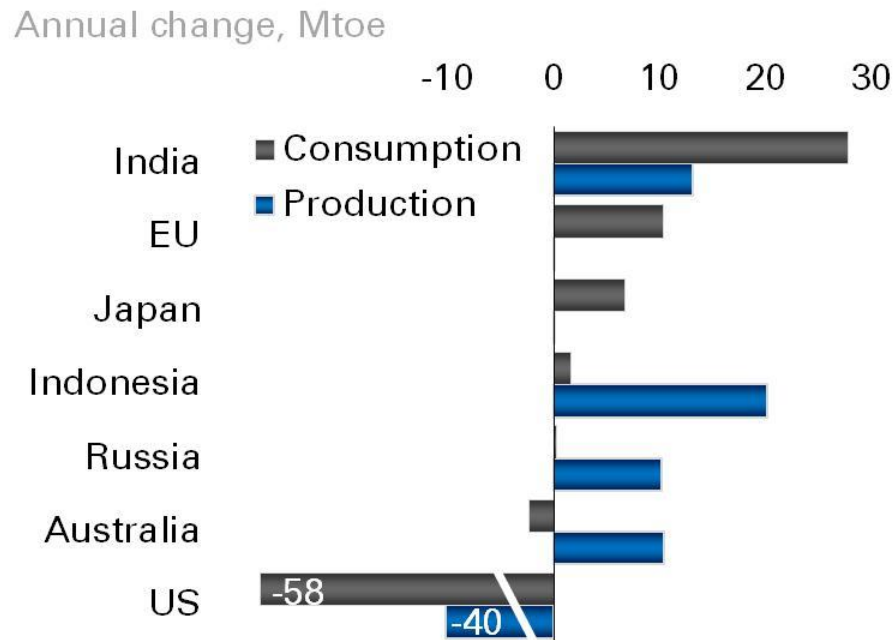


The coal market in 2012

Coal consumption in China



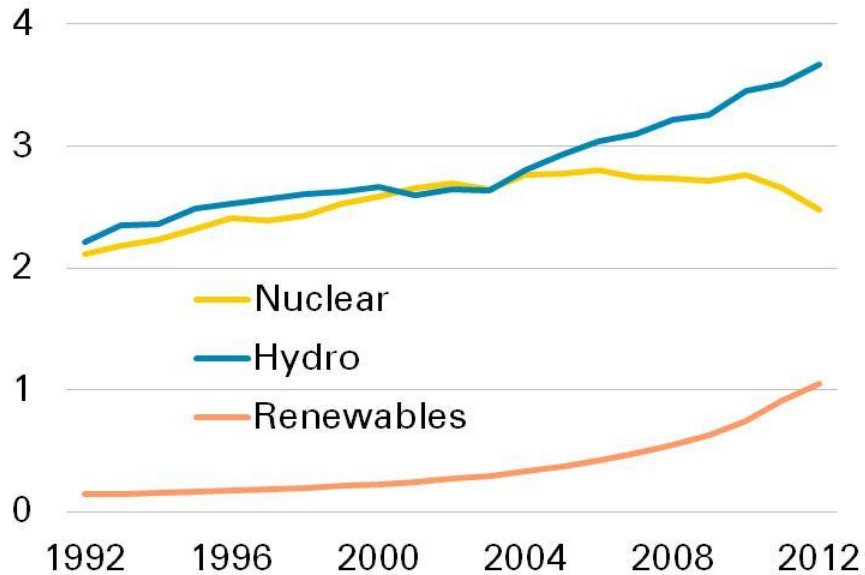
Largest changes outside China in 2012



Hydro, other renewables and nuclear

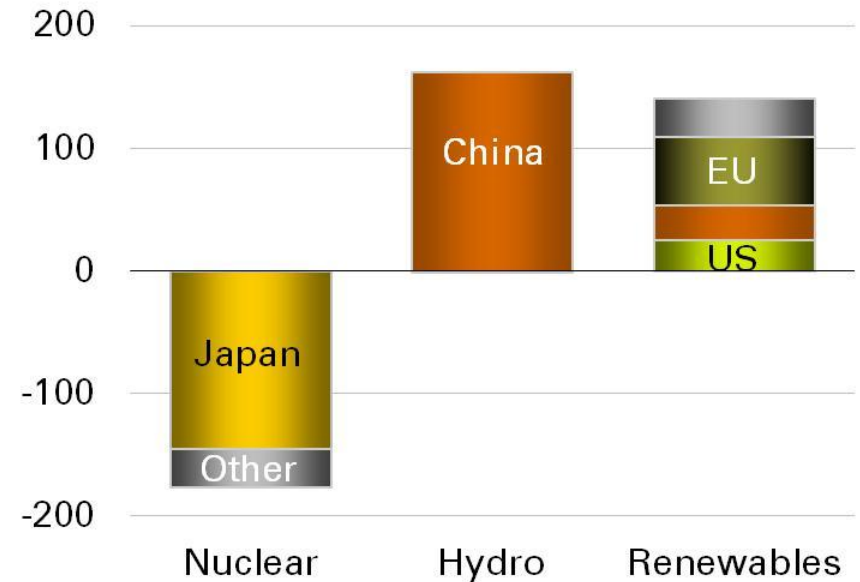
Power generation

Thousand TWh



Output changes in 2012

Annual change, TWh

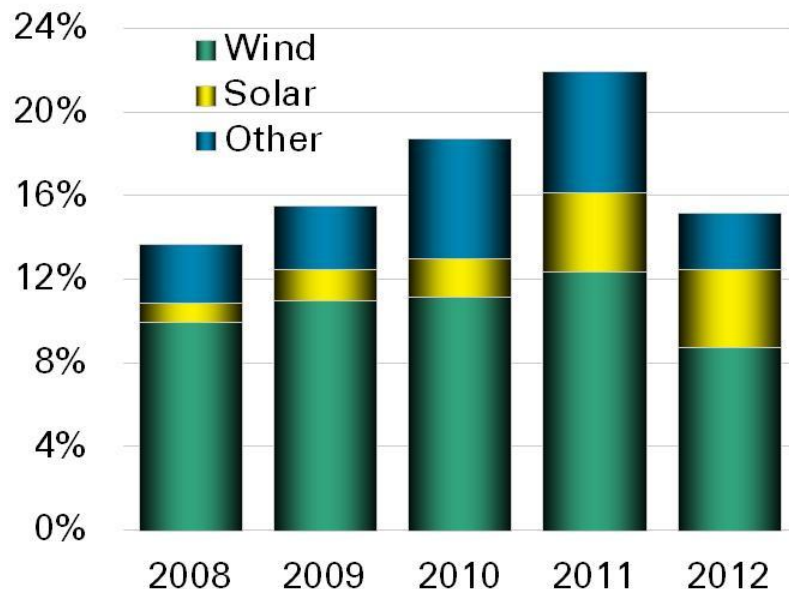




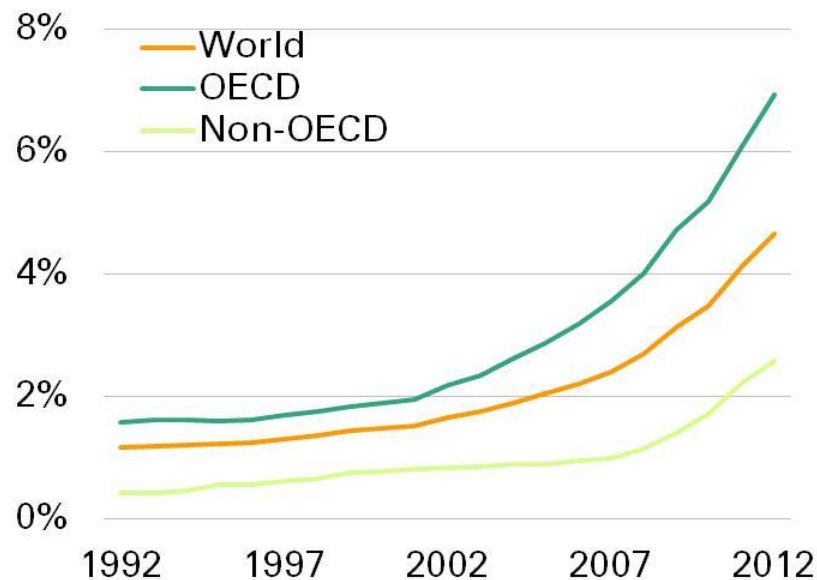
Renewables in power generation

Contributions to growth

Annual change, %



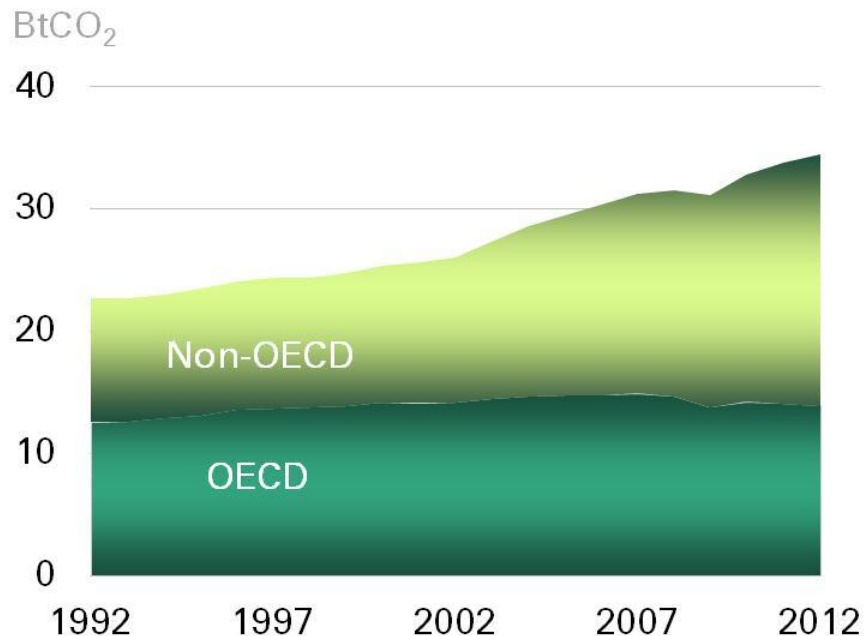
Renewables share of power



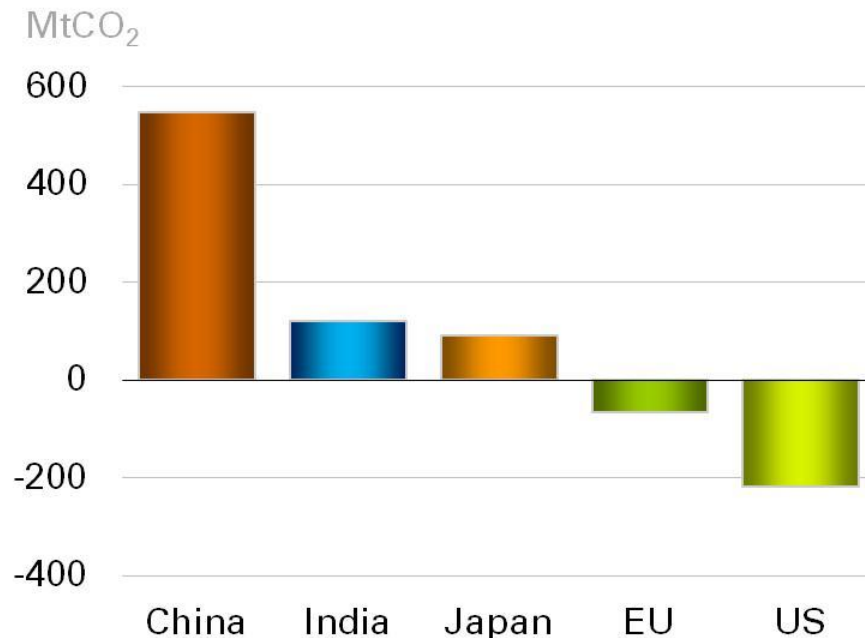


Carbon emissions

Global emissions from energy use

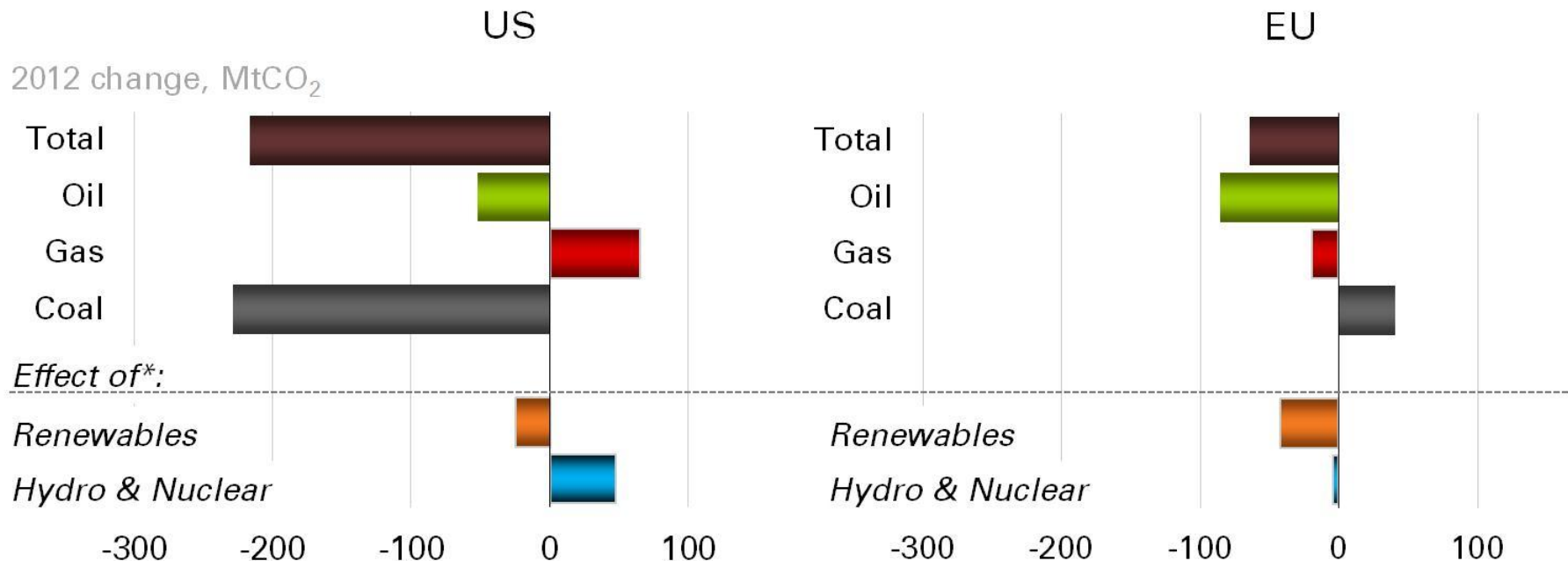


Largest emission changes in 2012





Carbon emissions by fuel: US and EU



* The net effect of changes in non-fossil fuels in power on emissions, based on 2011 shares of fossil fuels in power generation

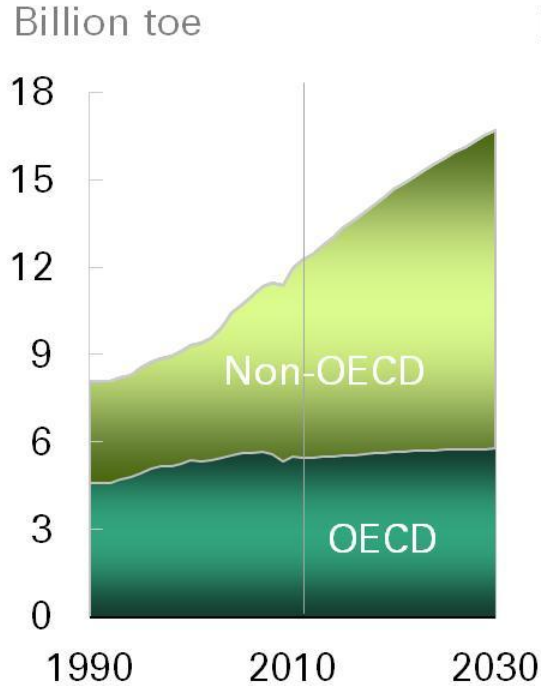
Conclusion

Energy in 2012

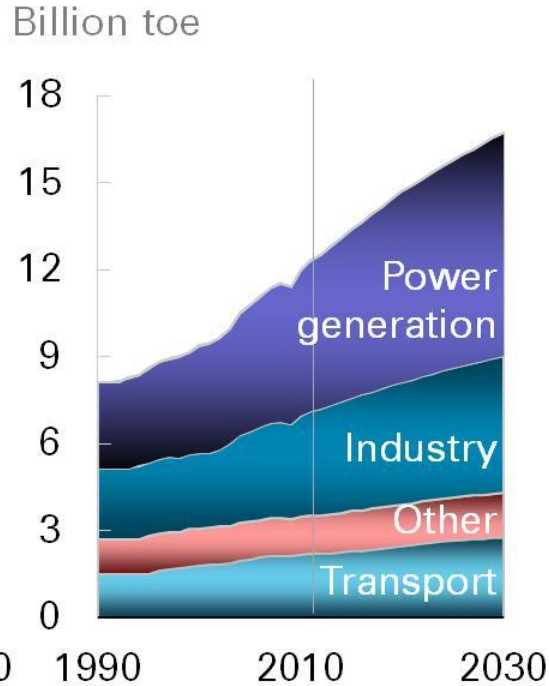
- Fundamental adjustment
 - And short-term aberrations
- Market and price driven
 - Sometimes with surprises
- Policy matters

Industrialisation drives energy growth

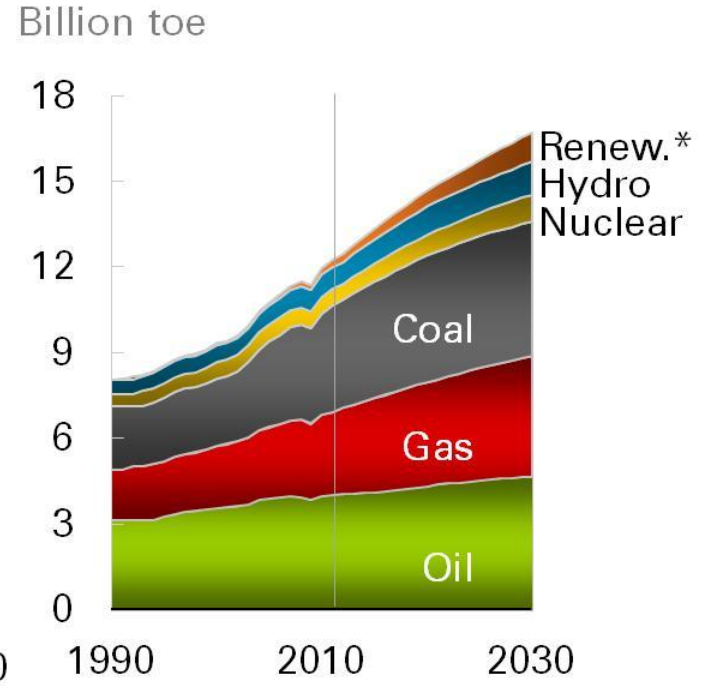
By region



By primary use



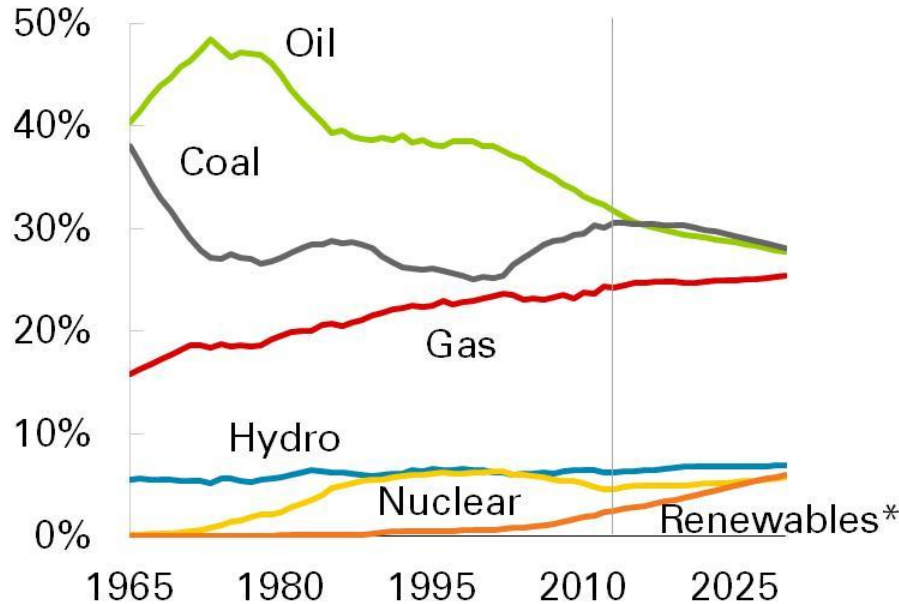
By fuel



*Includes biofuels

Fuel shares and energy prices

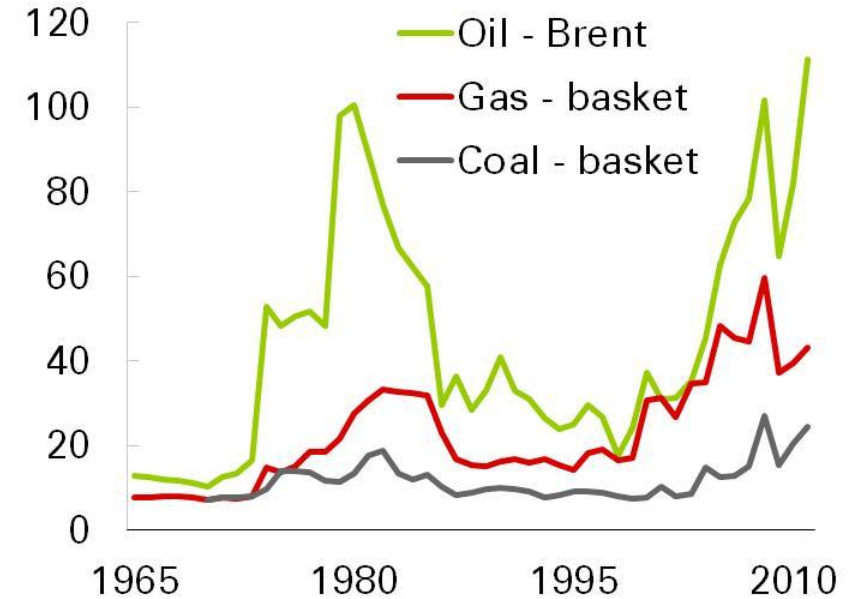
Shares of world primary energy



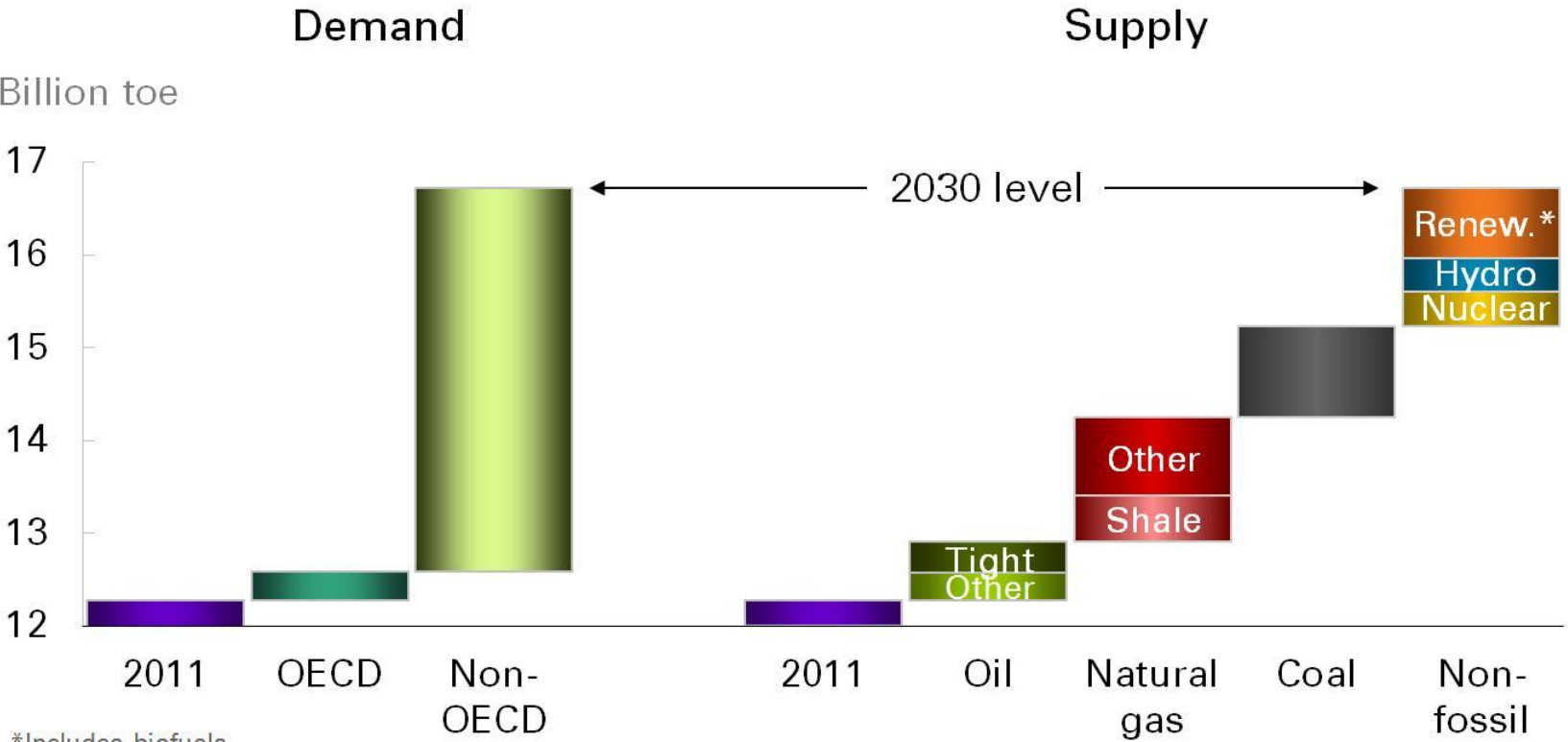
*Includes biofuels

Energy prices

\$2011/boe



Energy supply growth



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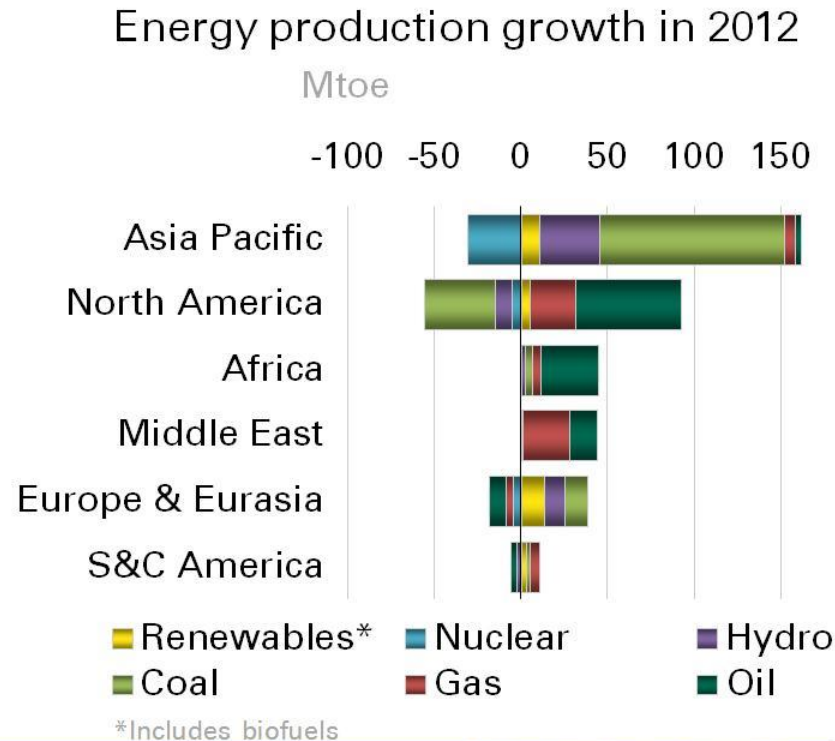
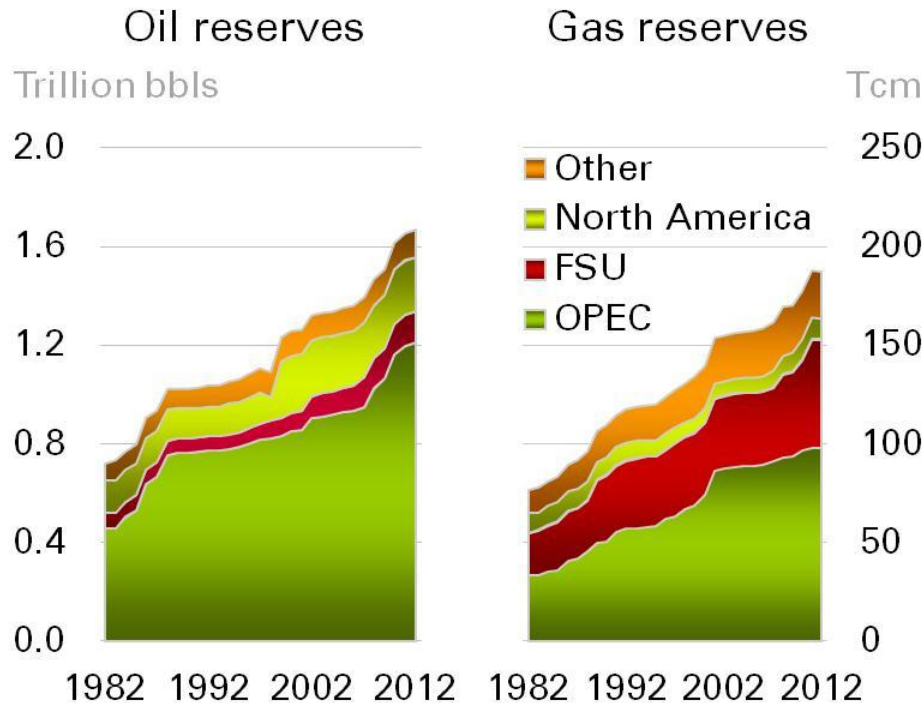
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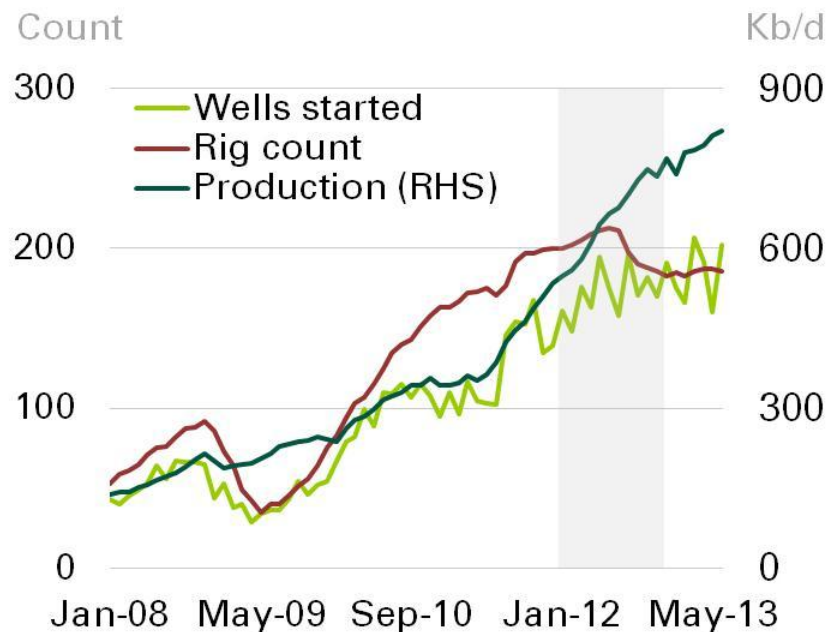
Reserves and production





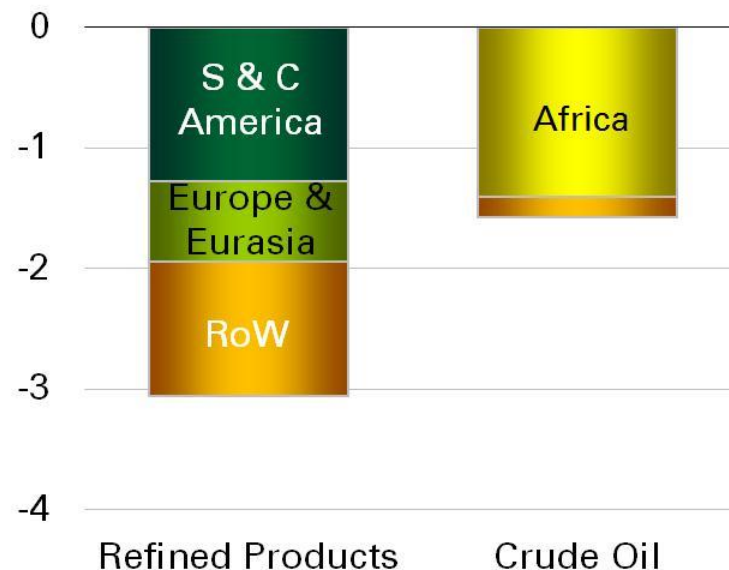
US oil supply: cause and effect

North Dakota production



Net US oil imports

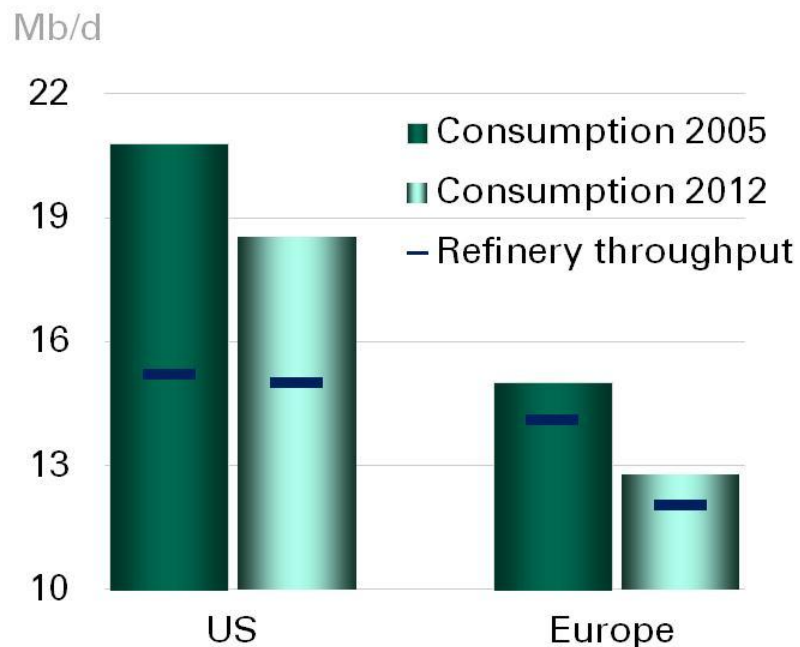
Change since 2007, Mb/d



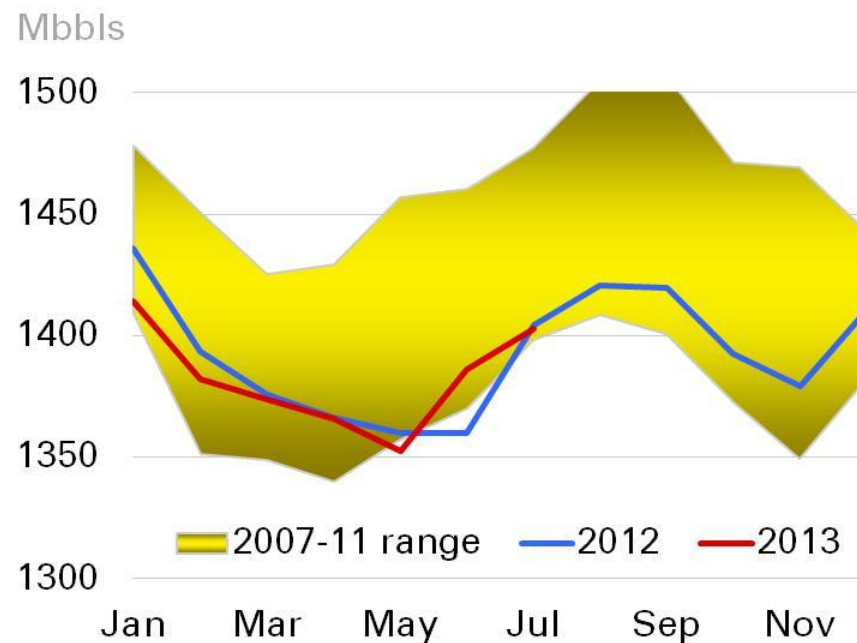


Crude run rebalancing and product stocks

Oil consumption and crude runs

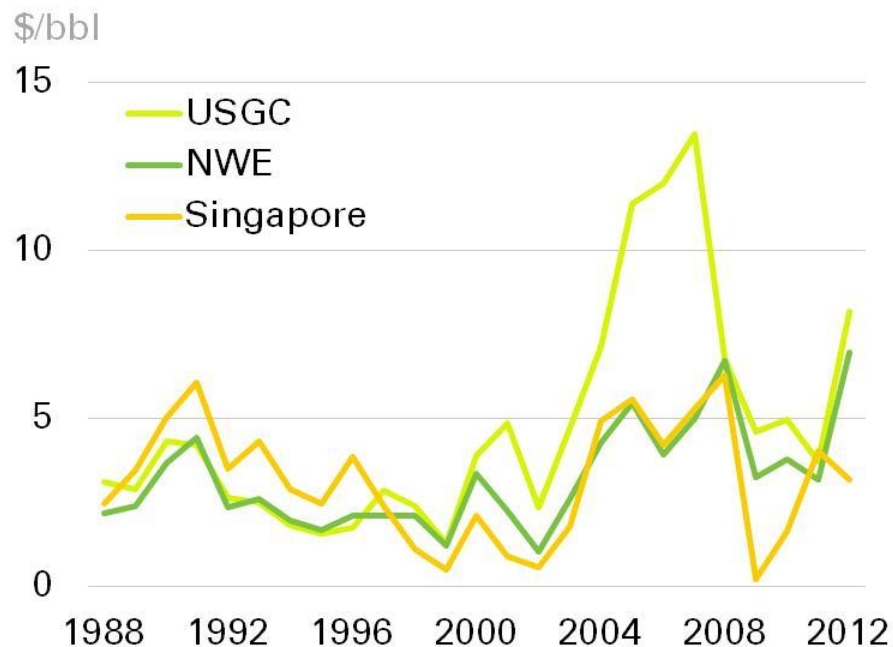


OECD product stocks



Refining margins and capacity

Upgrading margins



Unused refining capacity

