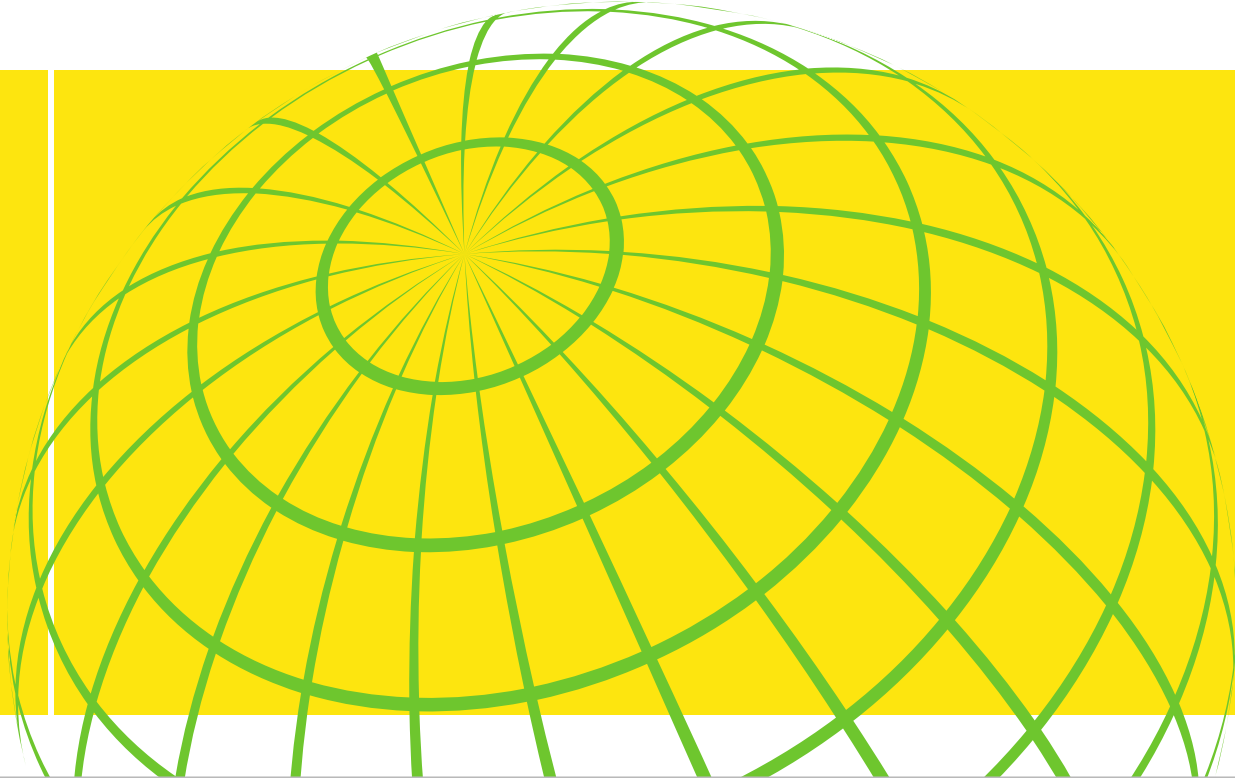


July 2013

BP Energy Outlook 2030

Mark Finley, General Manager, Global Energy Markets





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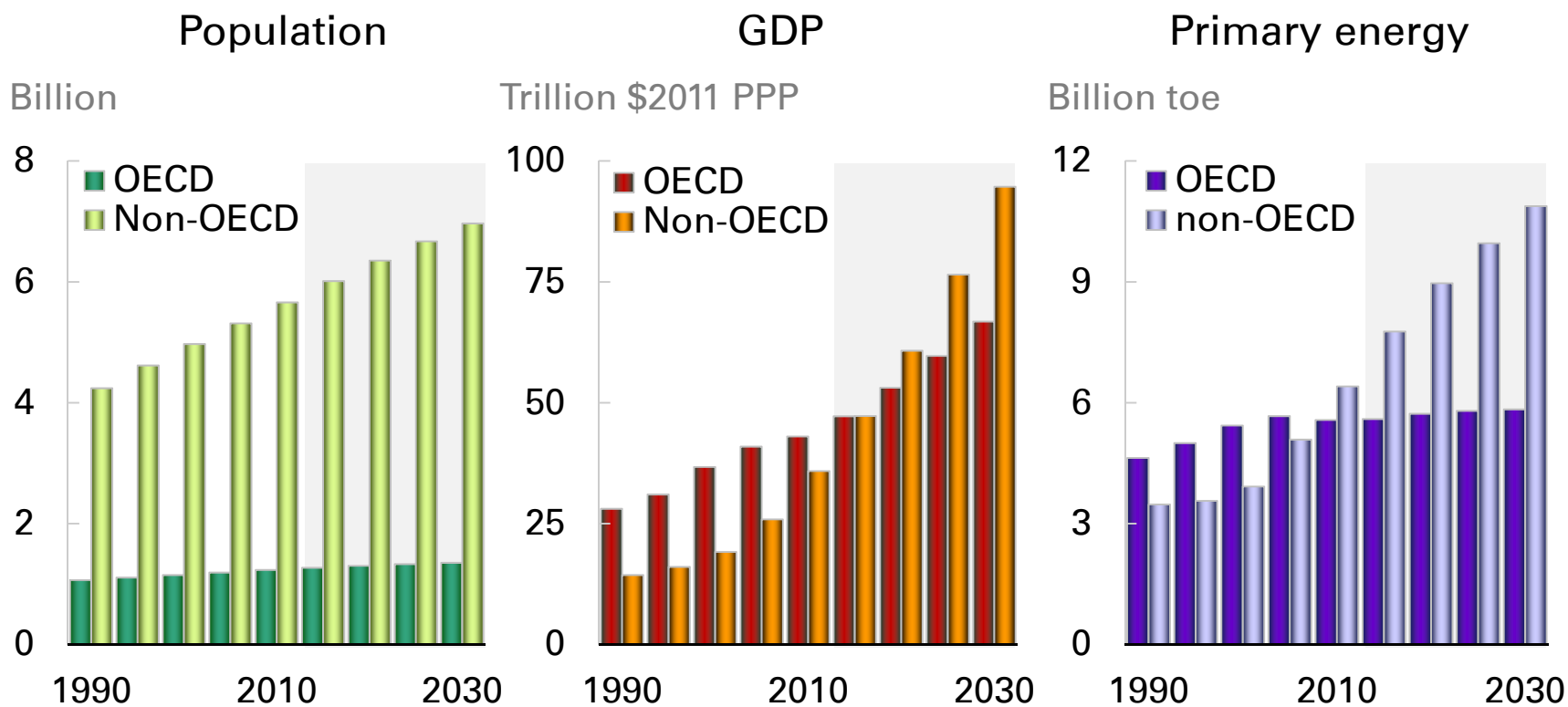
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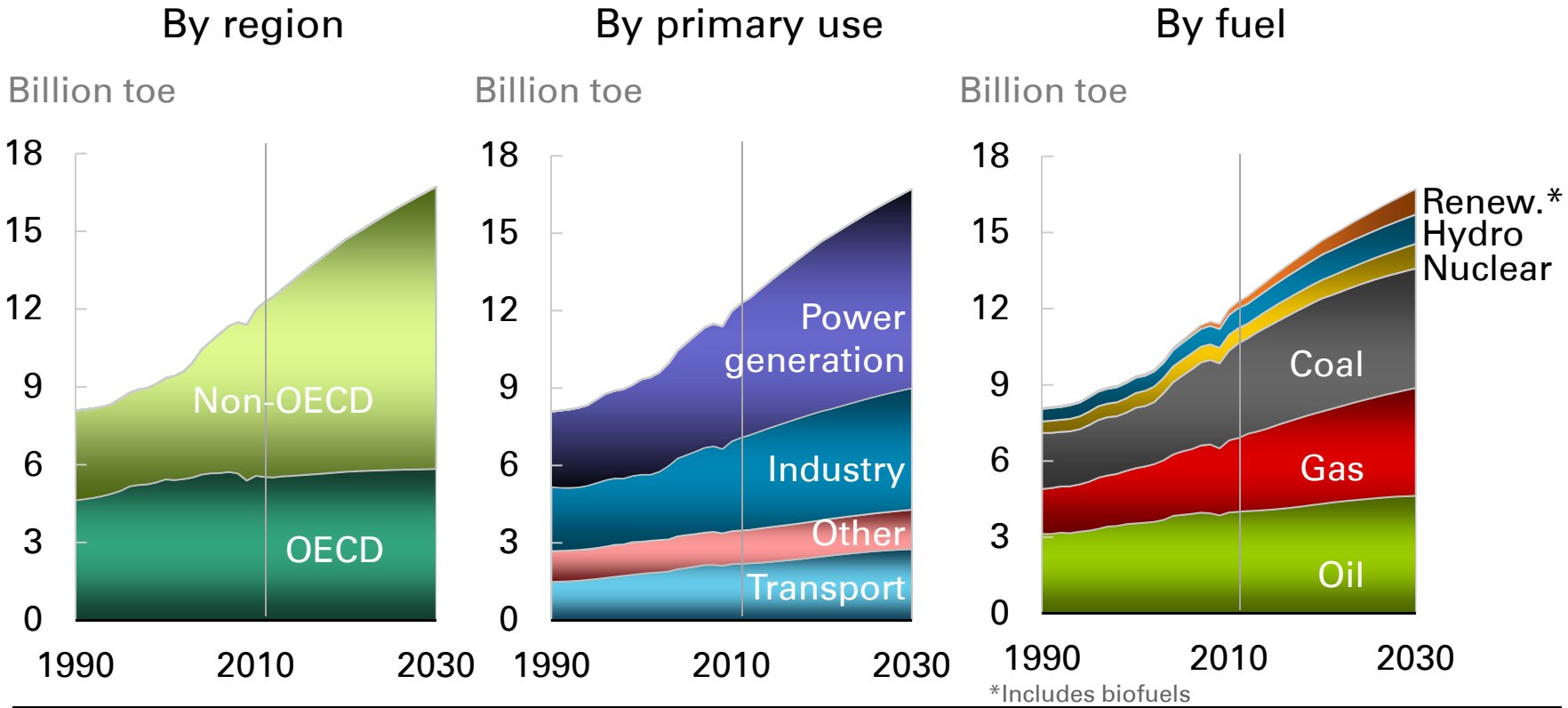
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Population, income and energy growth





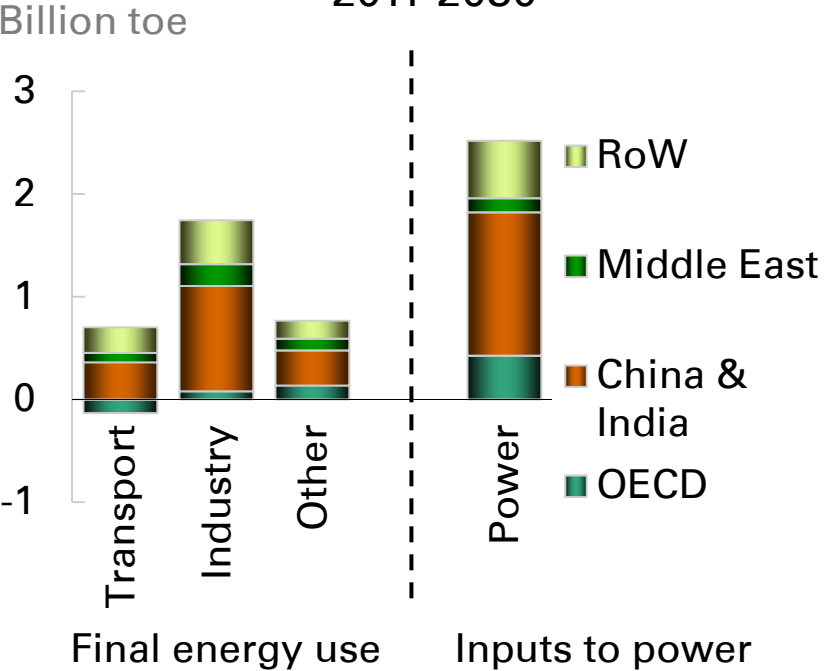
Industrialisation drives energy growth



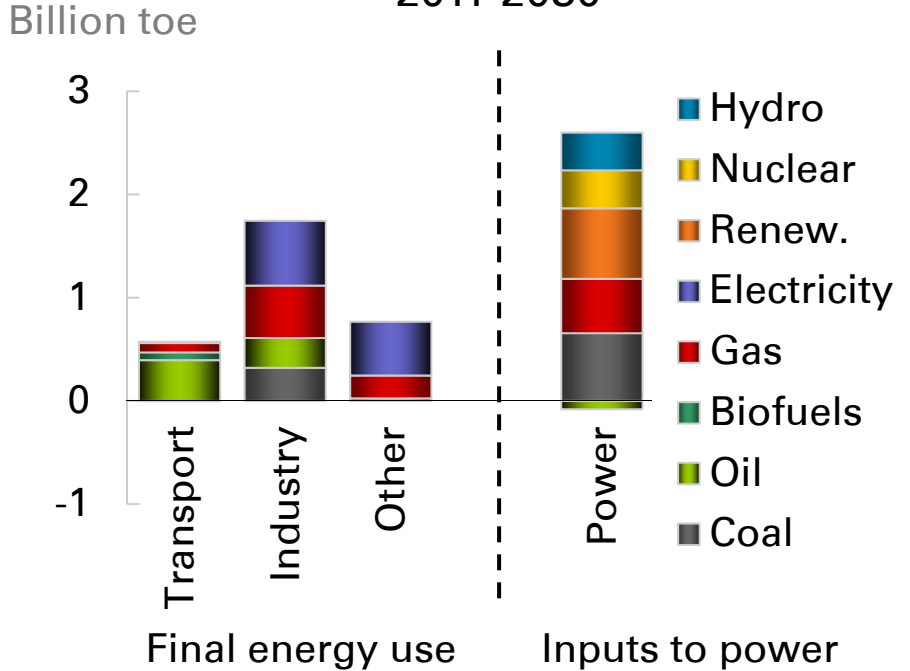


The power sector leads primary energy growth

Growth by sector and region, 2011-2030

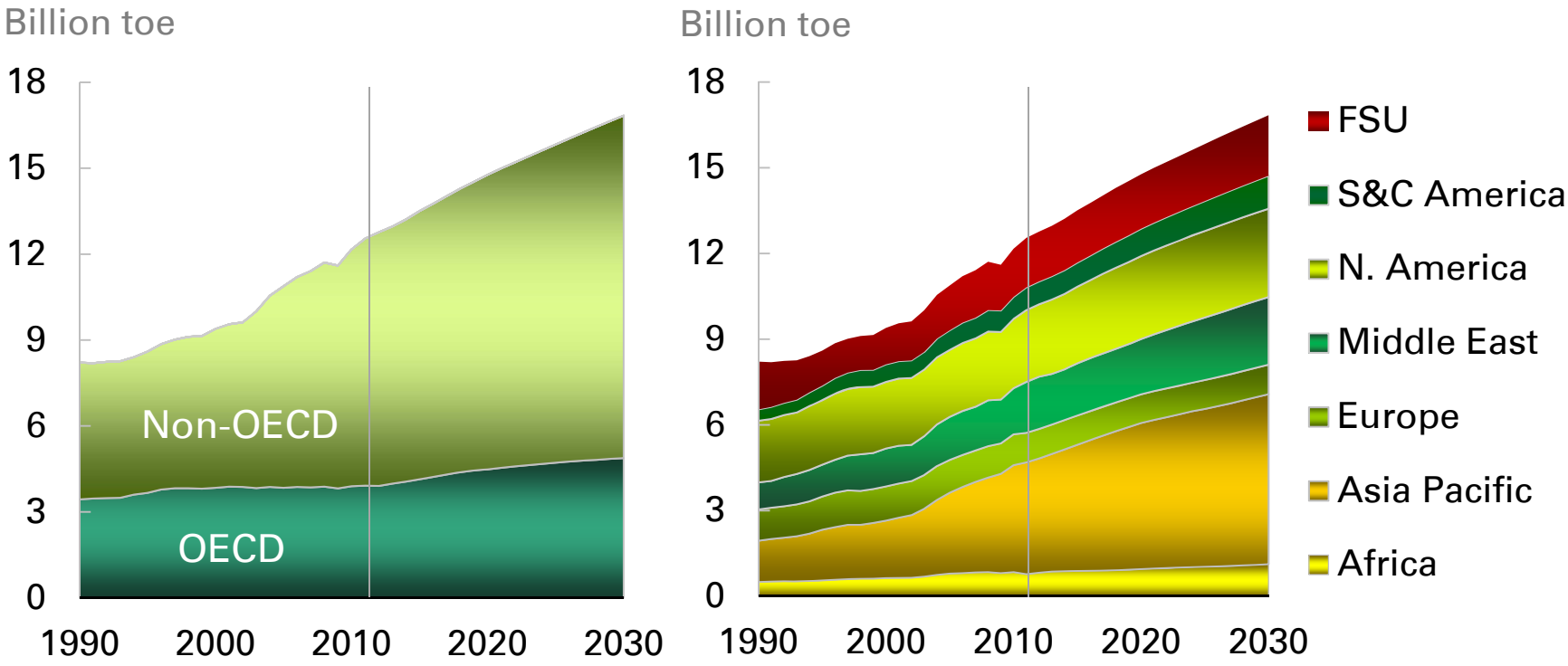


Growth by sector and fuel, 2011-2030





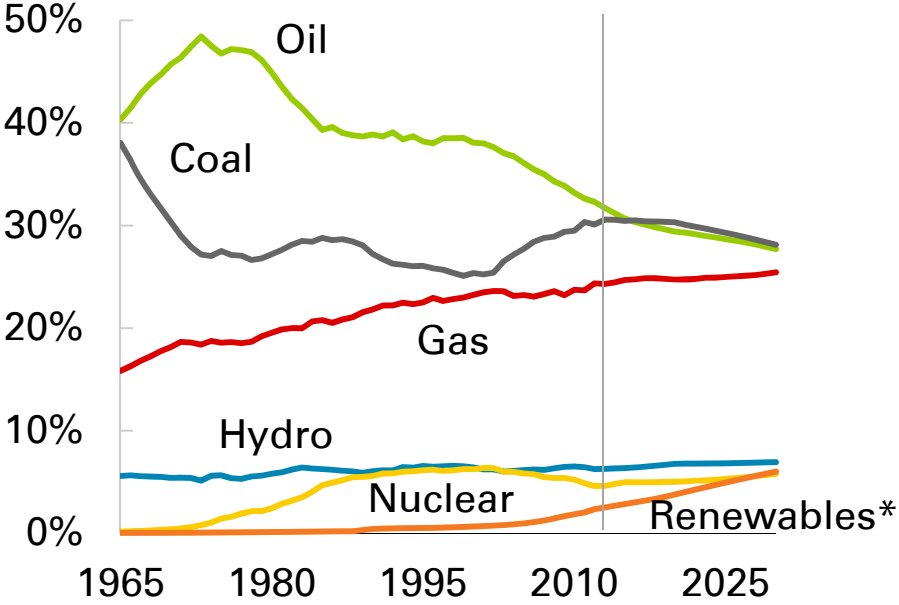
Emerging economies dominate energy production





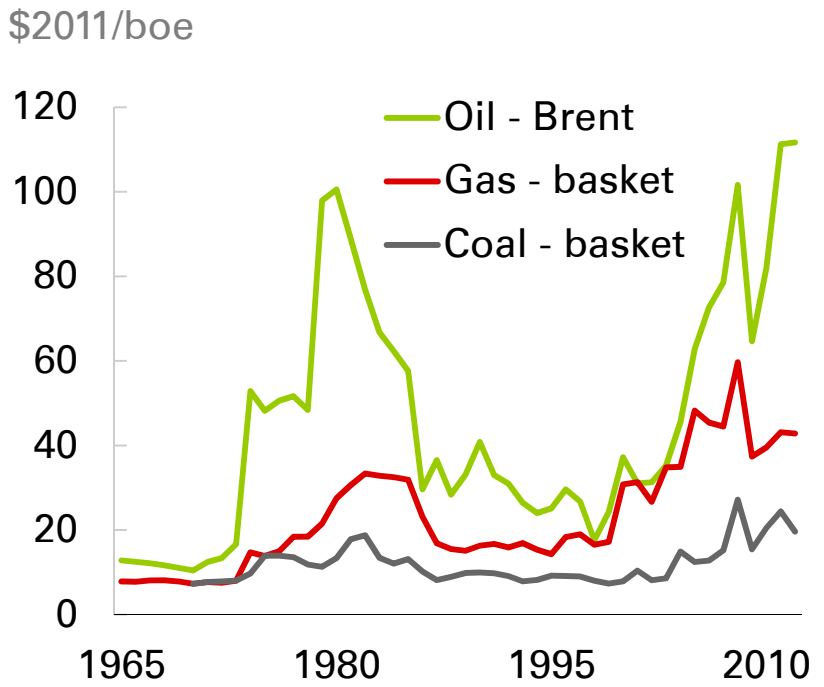
Fuel shares and energy prices

Shares of world primary energy



*Includes biofuels

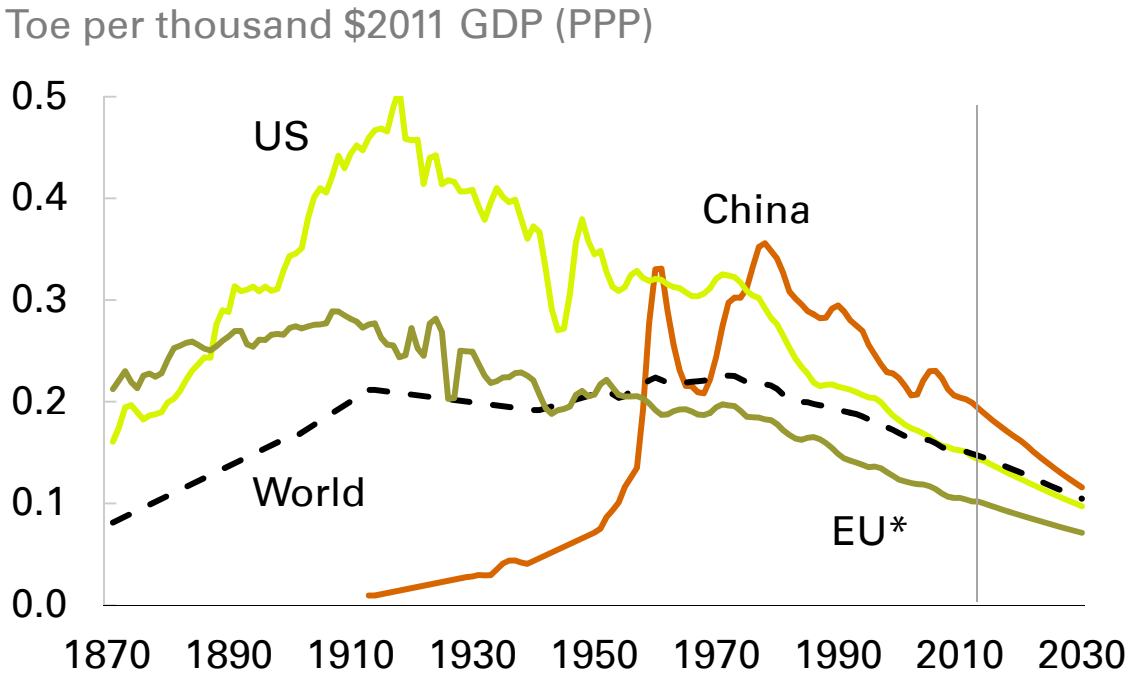
Energy prices



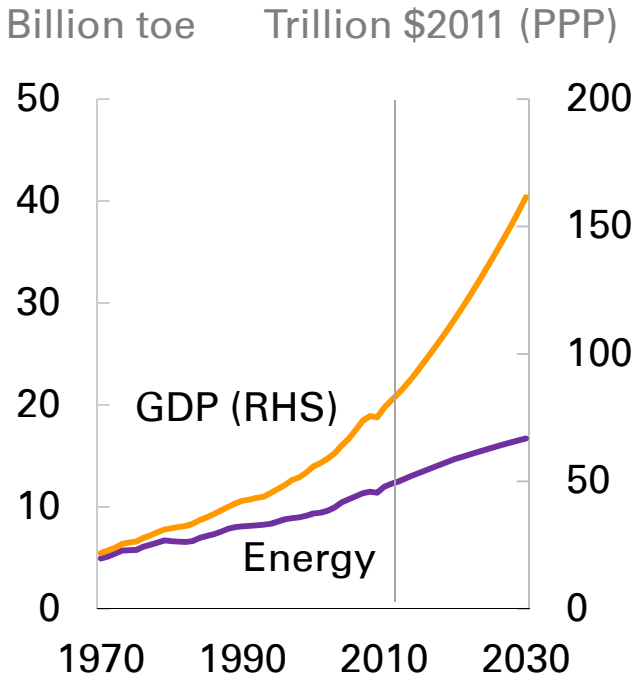


Energy efficiency improvements

Energy intensity by region

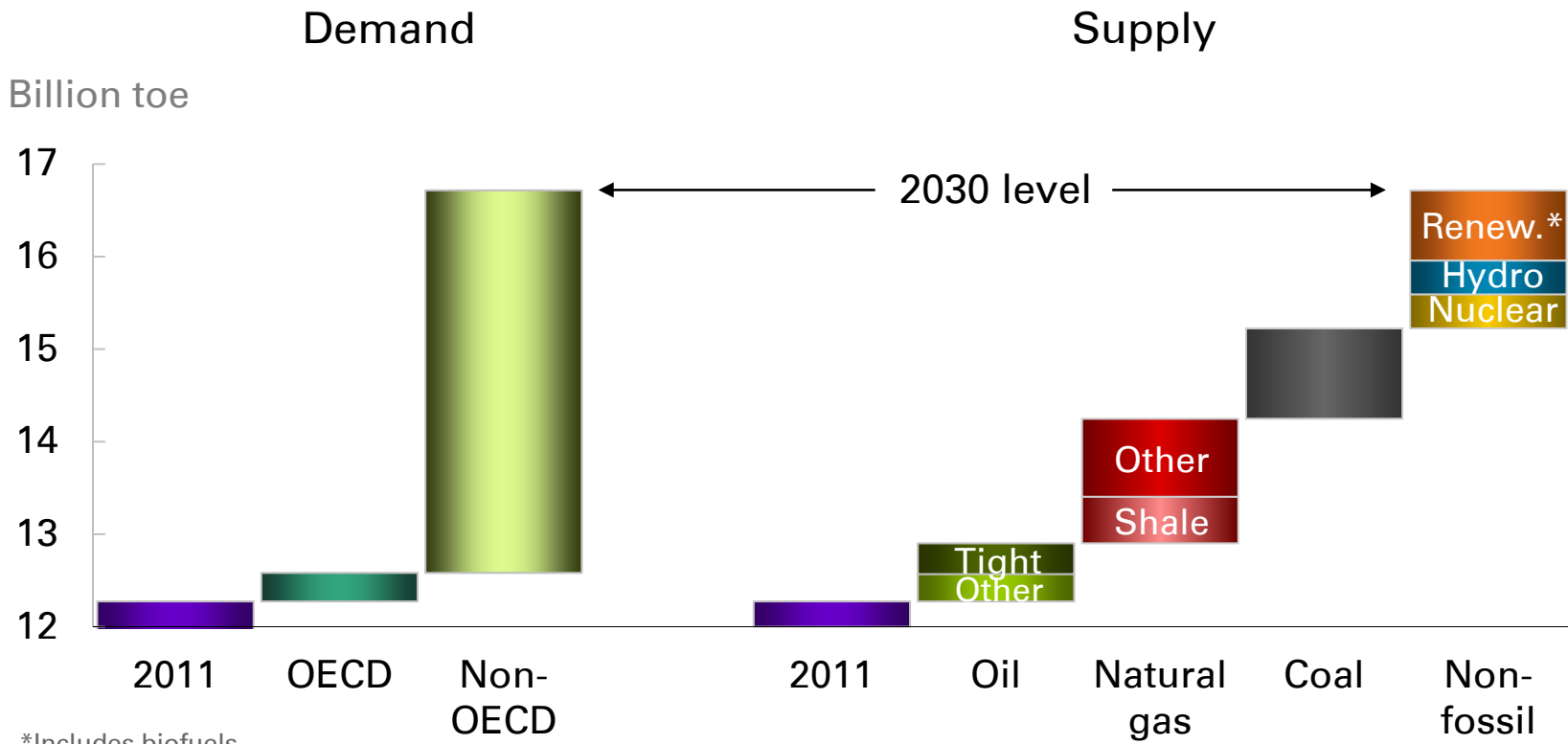


Energy and GDP



*Euro4 (France, Italy, Germany, UK) pre-1970

Energy supply growth

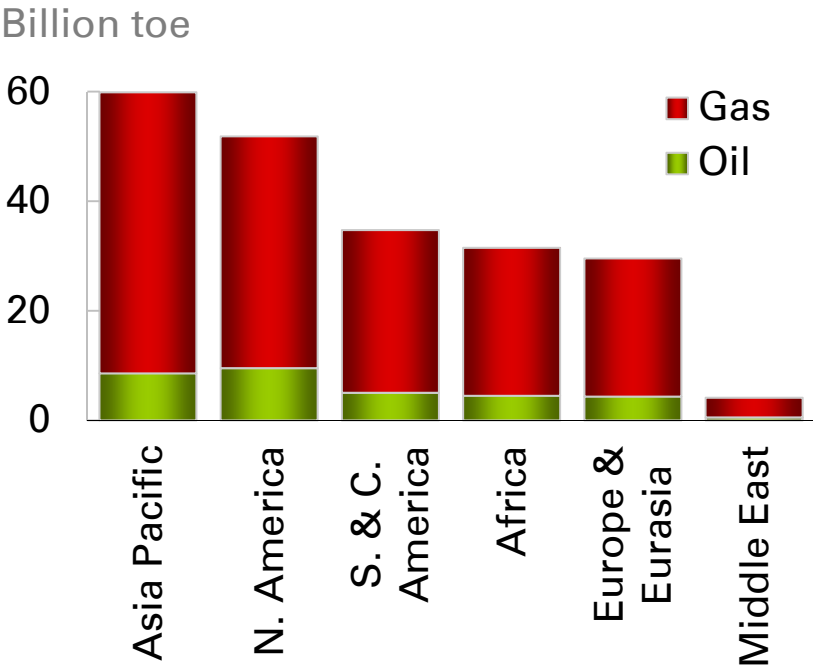


*Includes biofuels

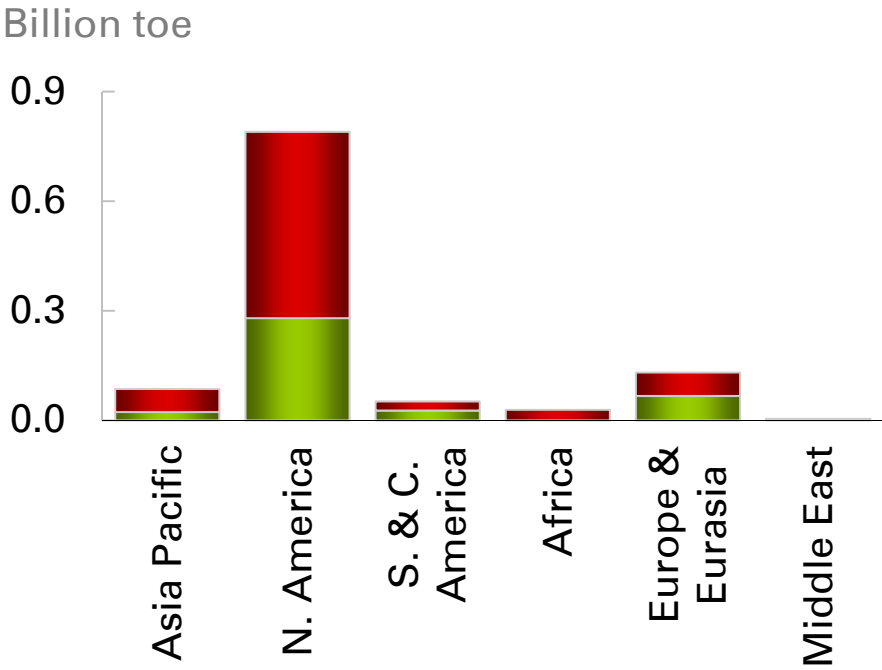


Shale gas and tight oil: resources and production

Current resources



Production in 2030

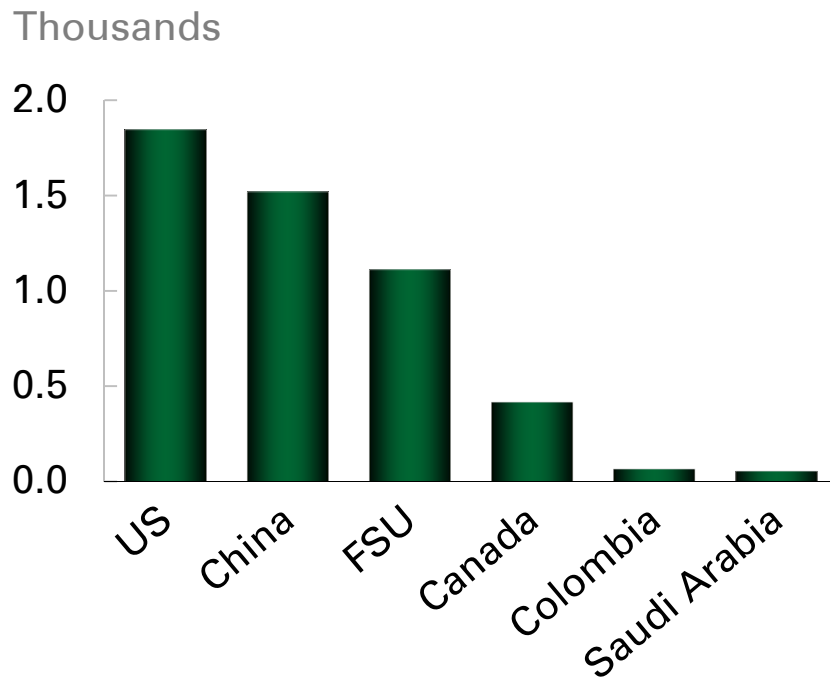


Resources data © OECD/IEA 2012

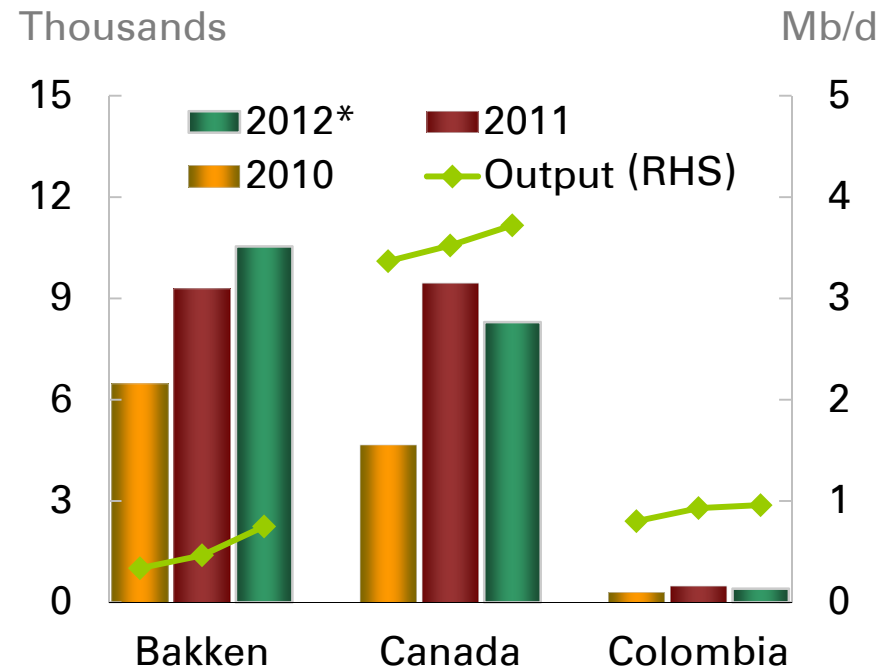


US tight oil and shale gas: infrastructure requirements

Onshore oil & gas rigs 2011



Oil wells drilled and output



*Annualised from 1Q-3Q data



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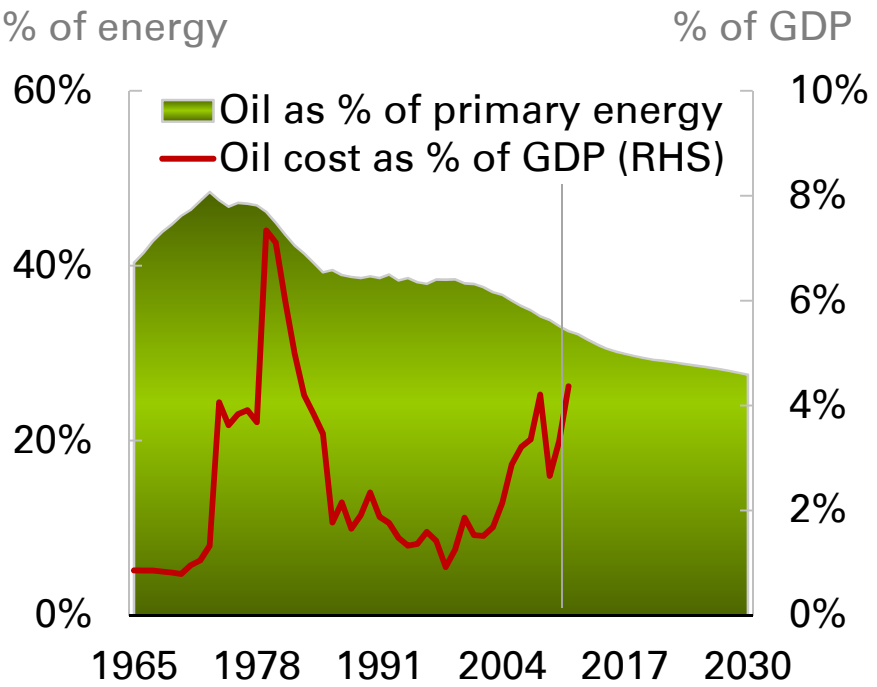
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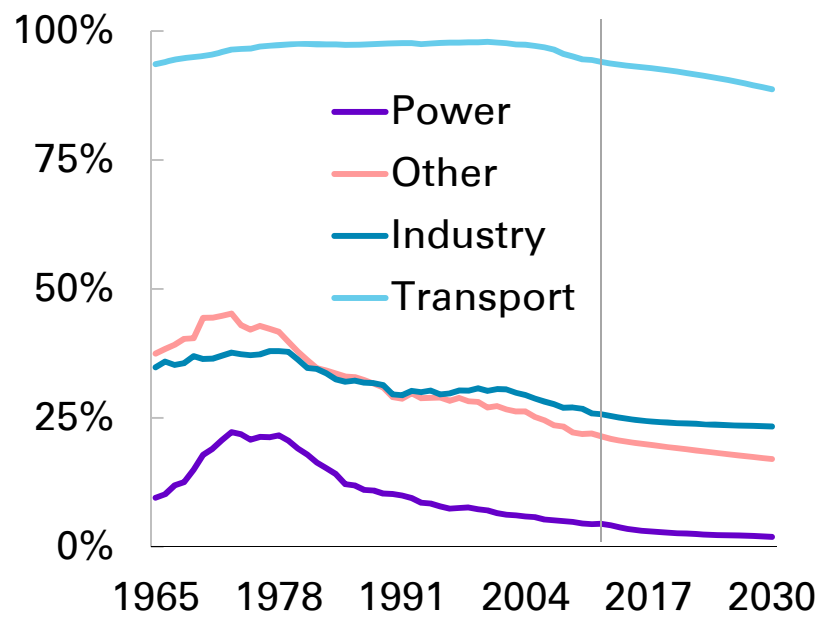


High oil prices are reducing oil's share of primary energy

Oil share of energy and GDP



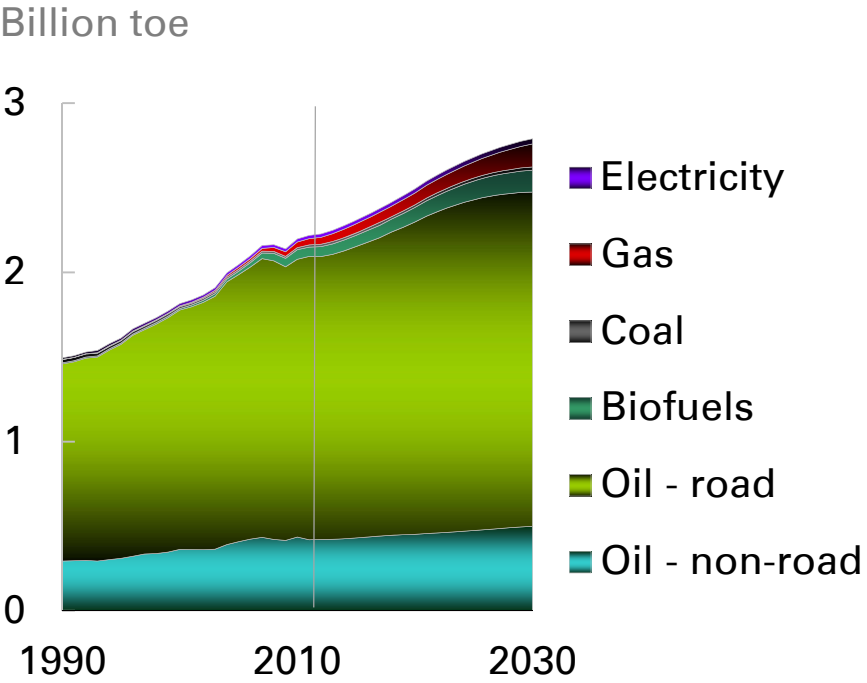
Oil share in sector



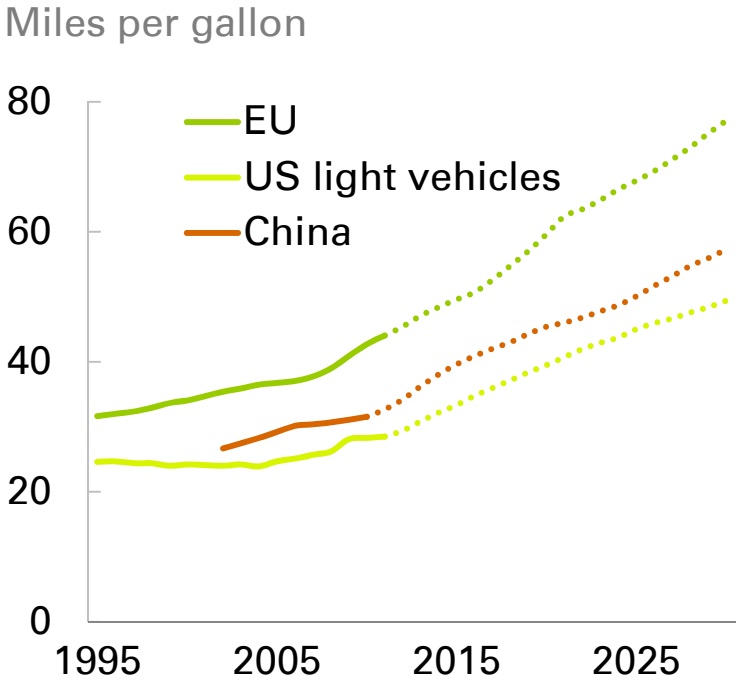


Global transport demand

Transport demand by fuel



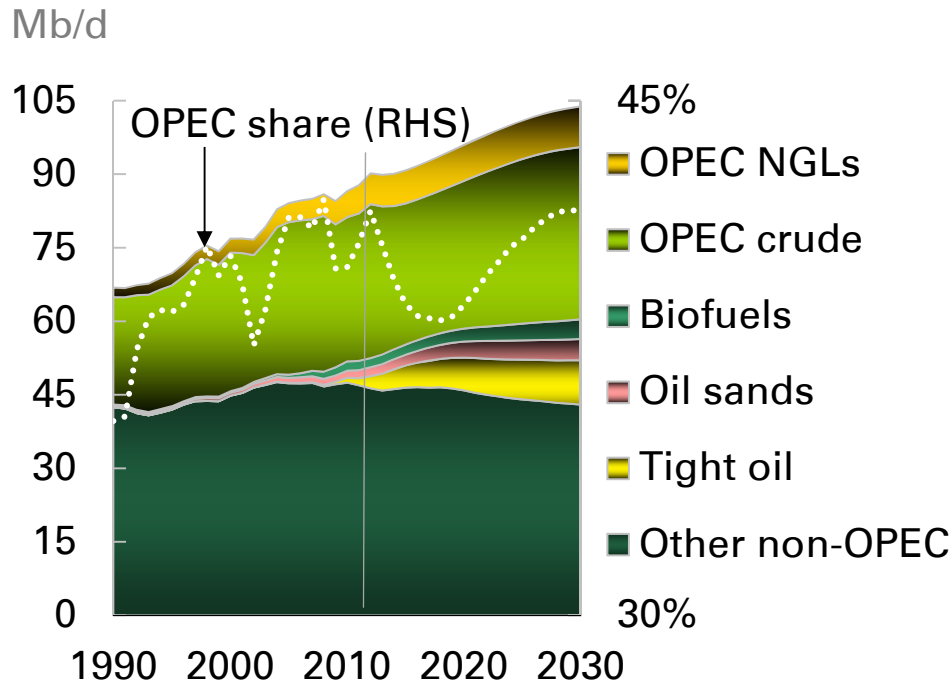
Fuel economy of new cars



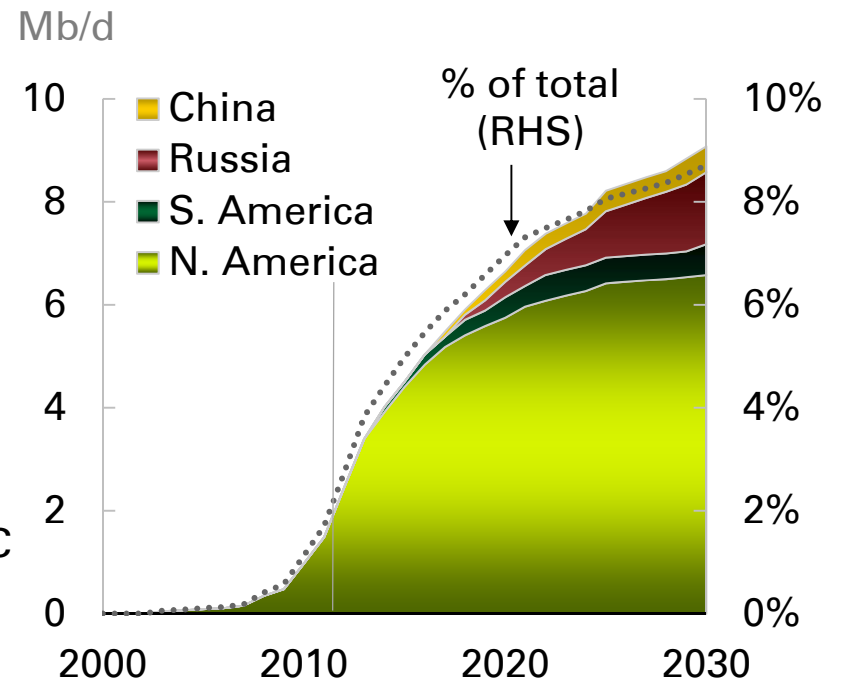
Global supply growth and tight oil



Liquids supply by type



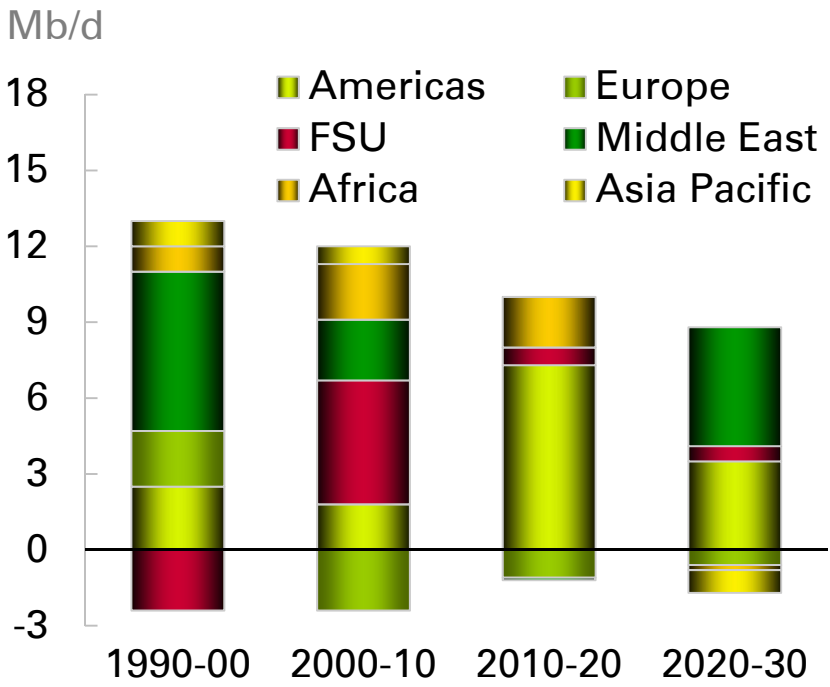
Tight oil output



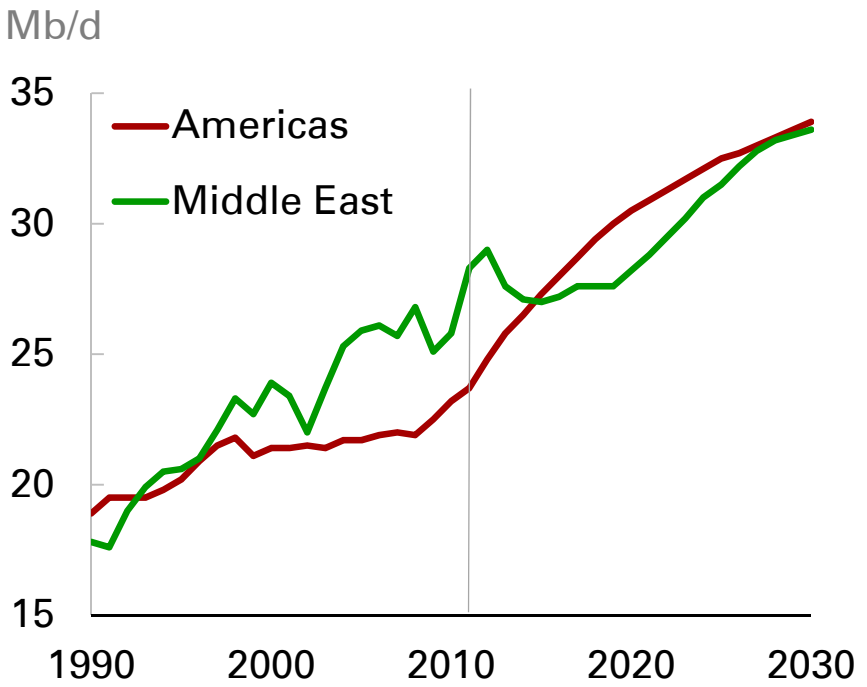


Role of the Americas

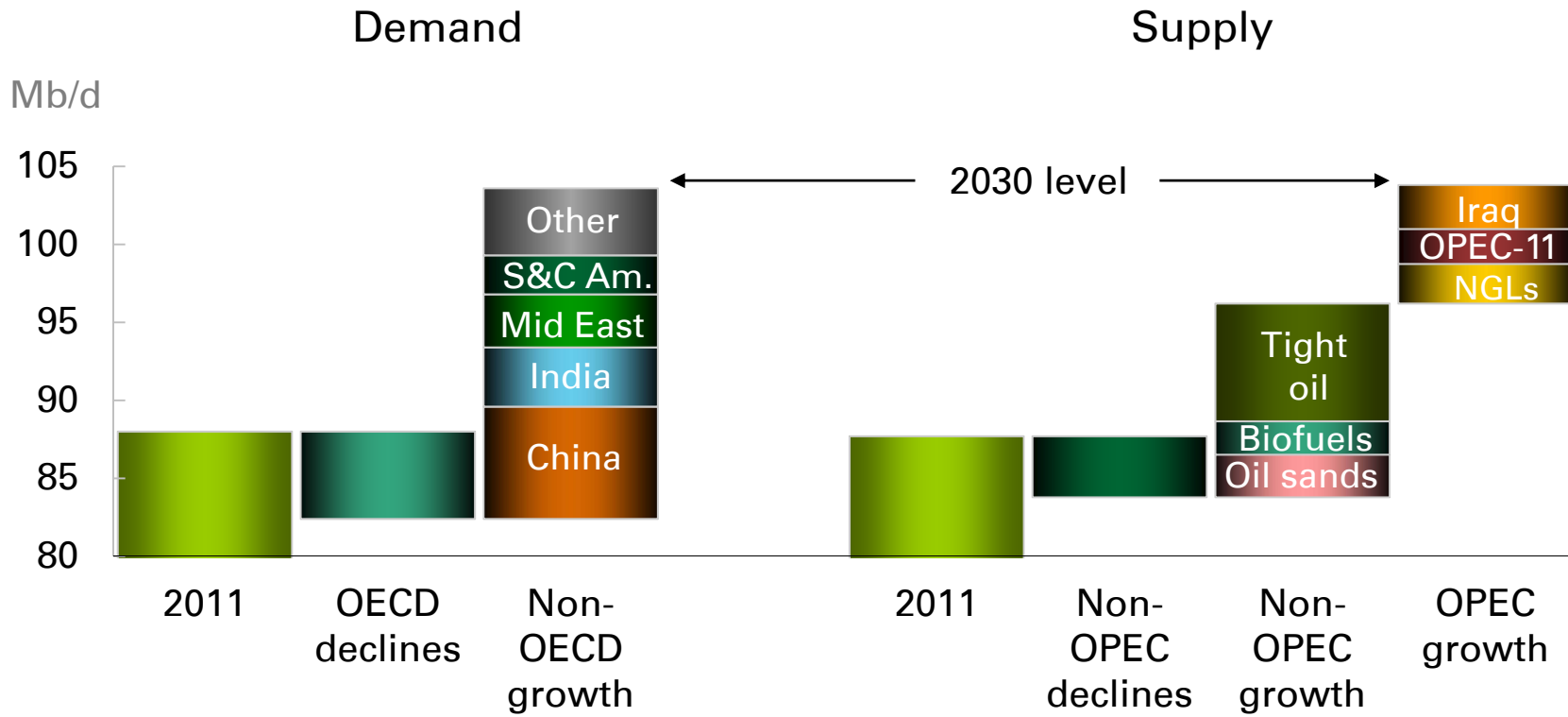
Supply growth by decade



Americas surpass Middle East



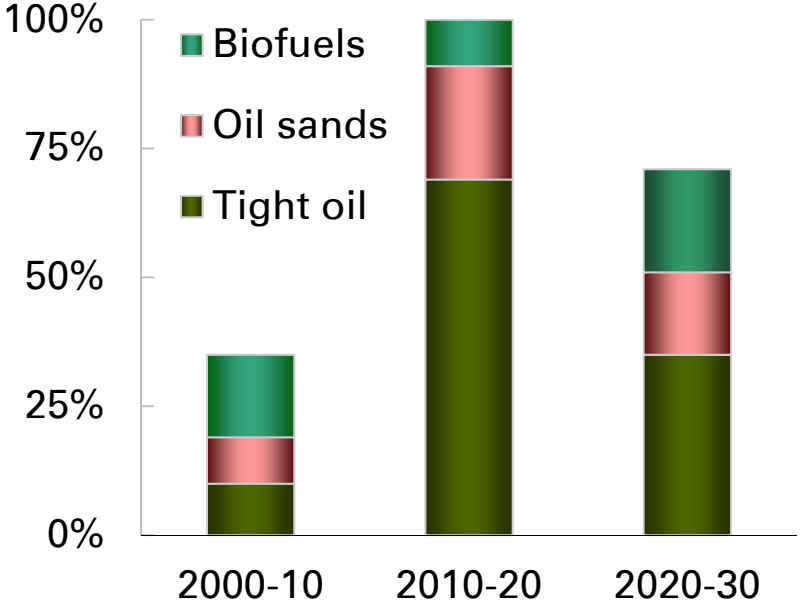
Global liquids balance



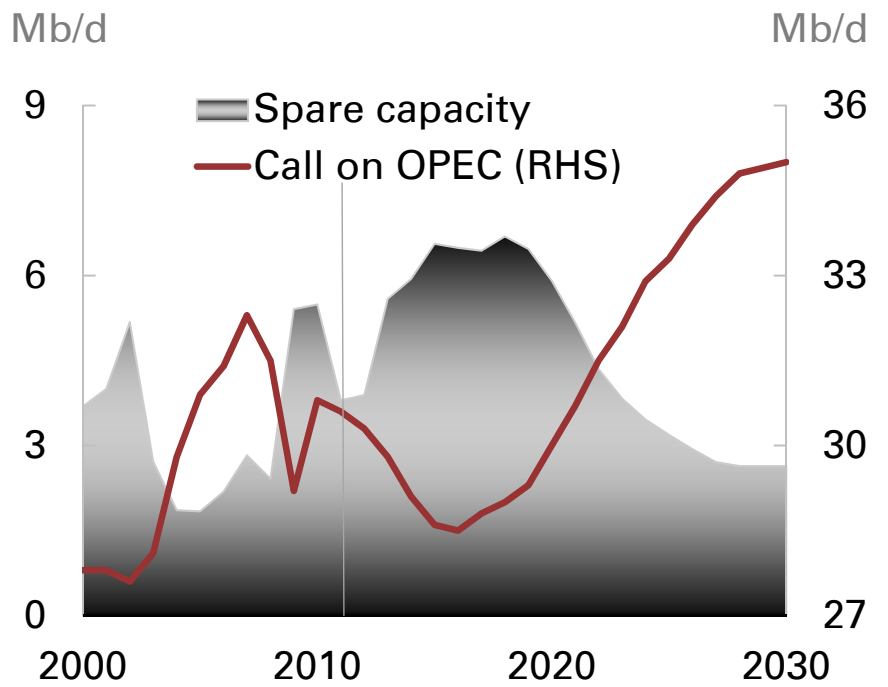


Unconventional oil and the call on OPEC

Unconventionals share of net global supply growth



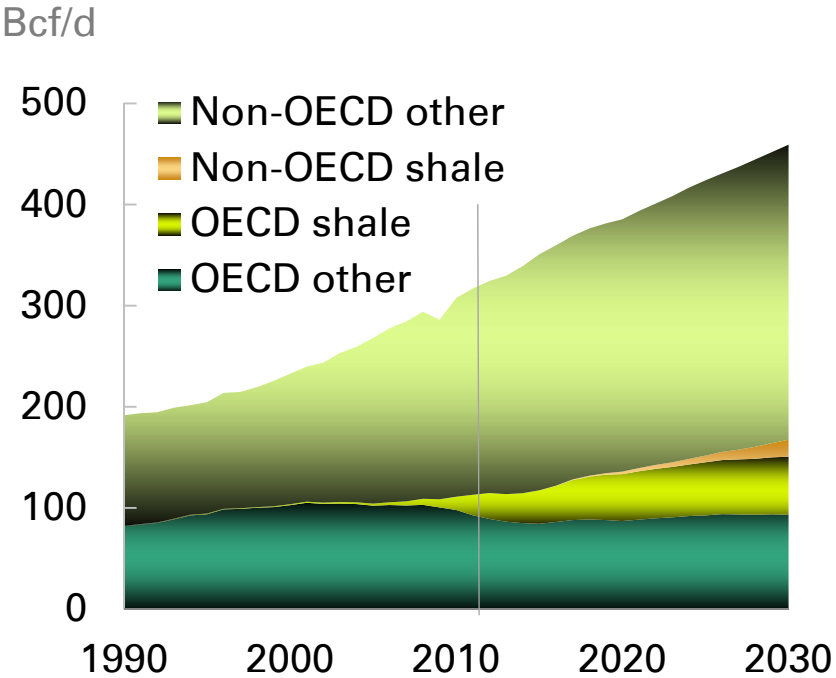
Call on OPEC & spare capacity



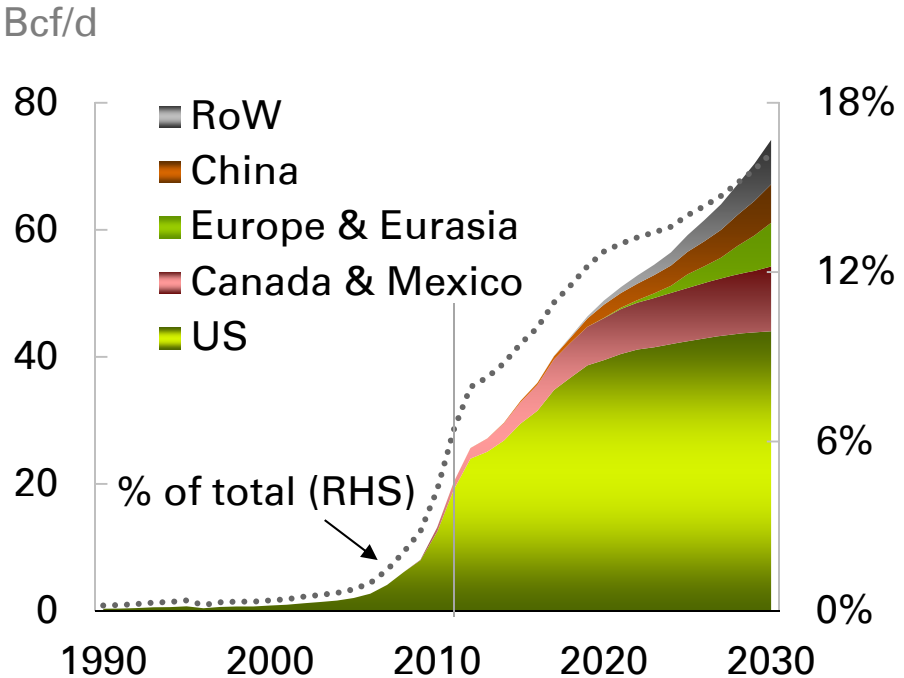


Shale gas and global supply growth

Gas production by type and region



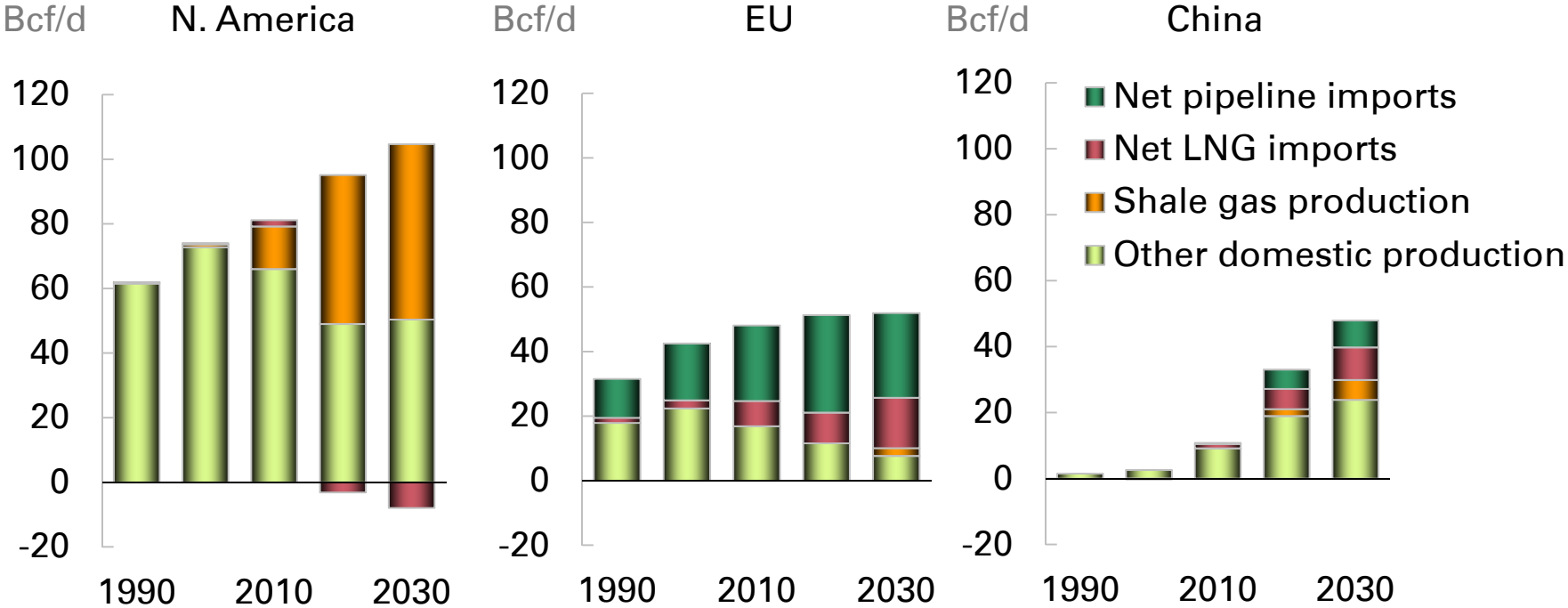
Shale gas production





Shale gas: regional growth

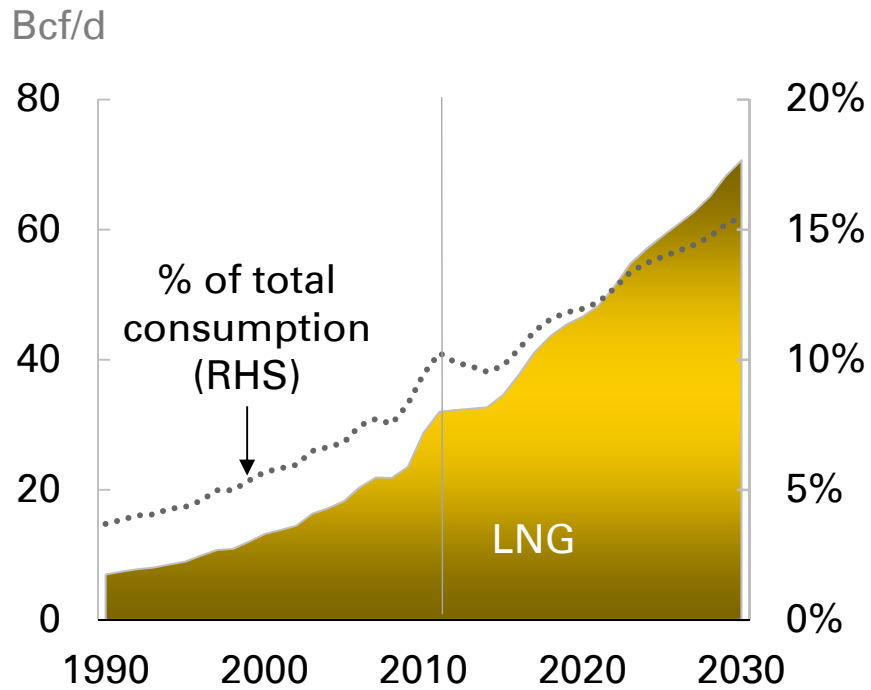
Sources of gas supply, by region



Gas trade and market integration



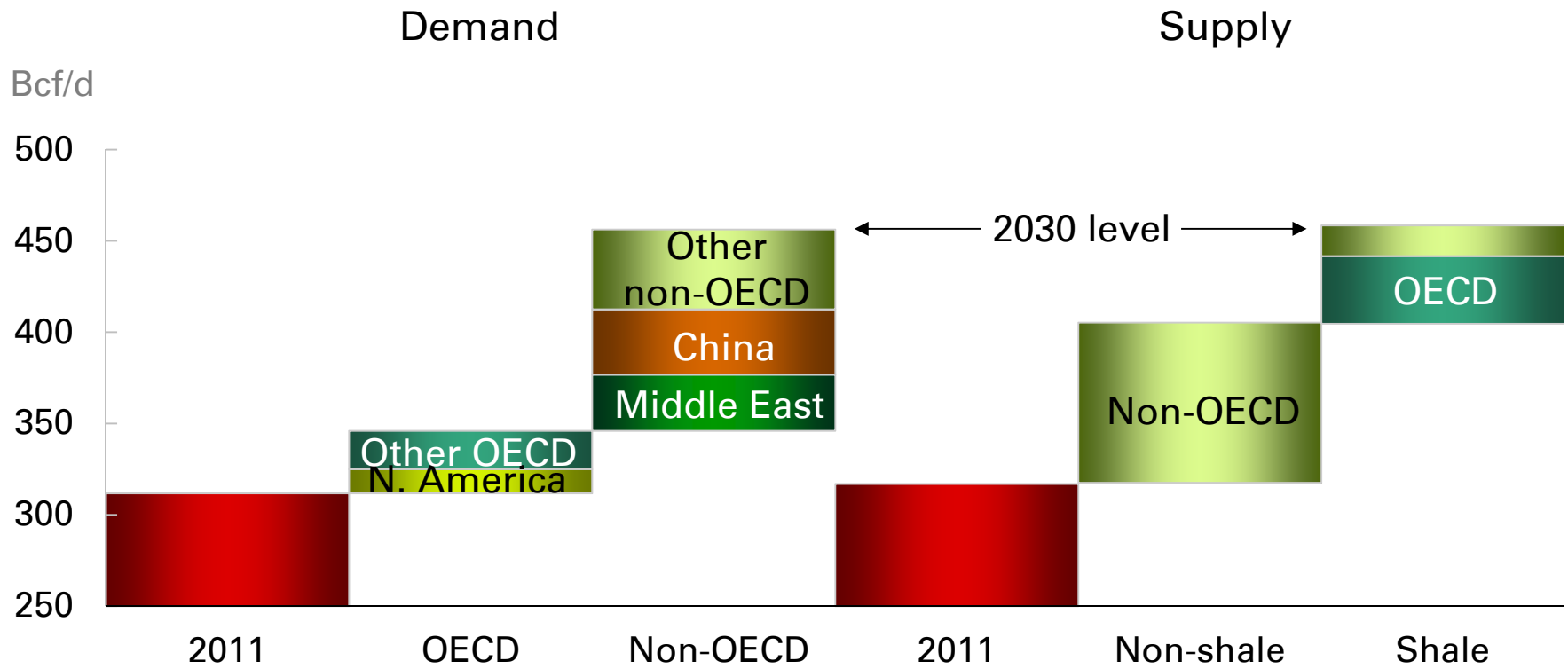
LNG exports



LNG diversification



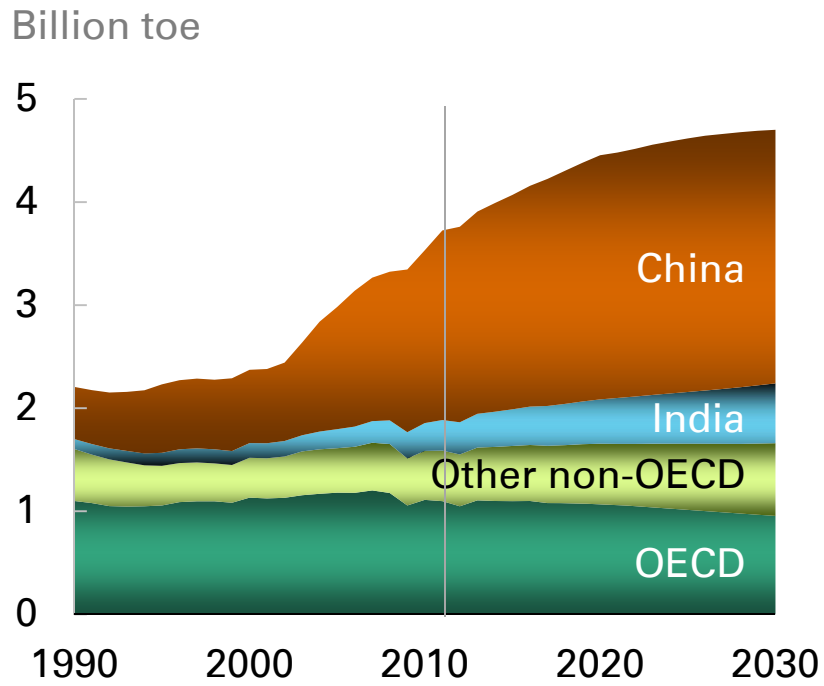
Global gas balance



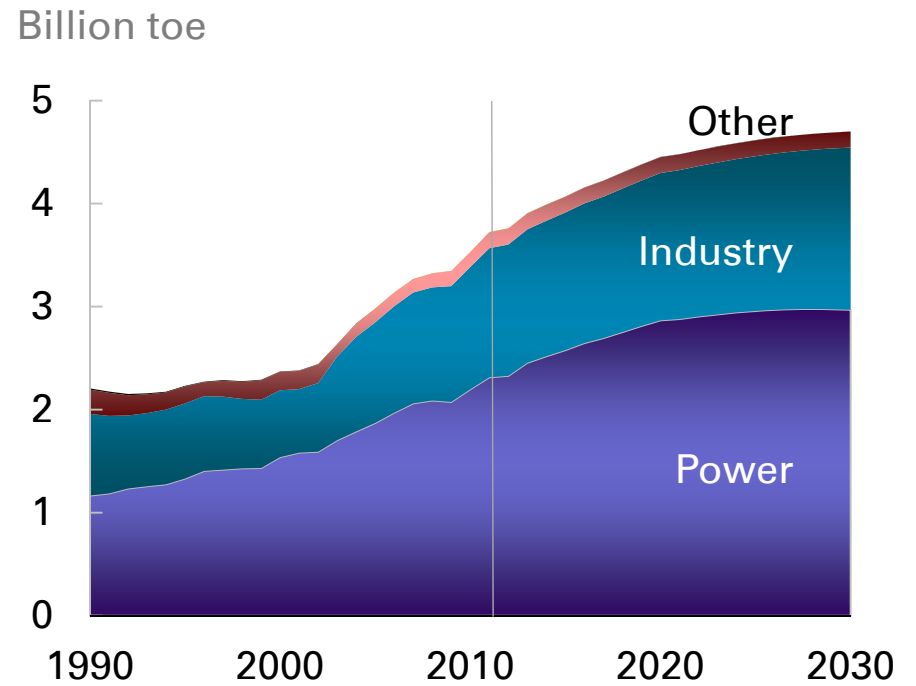
Coal consumption



Coal demand by region



Coal demand by sector



Non-fossil fuels

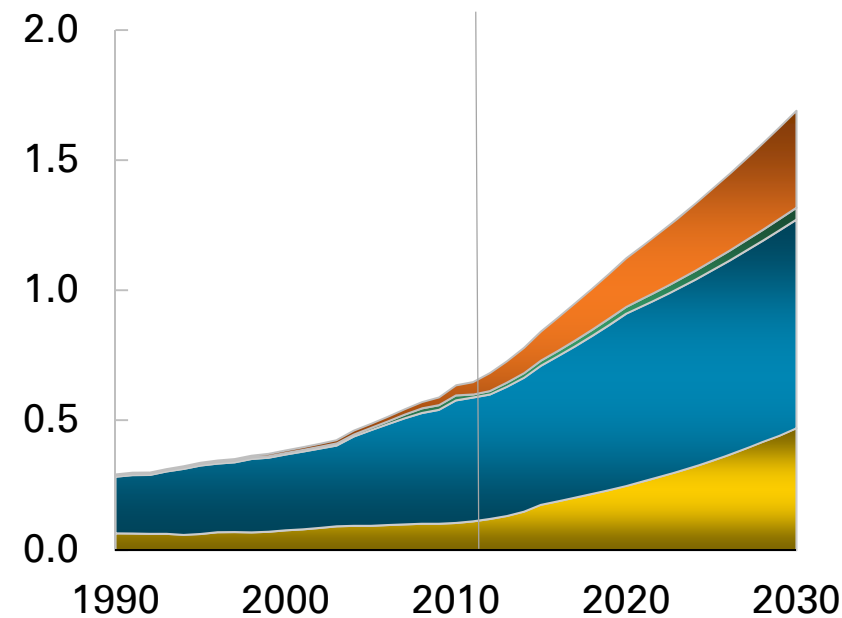
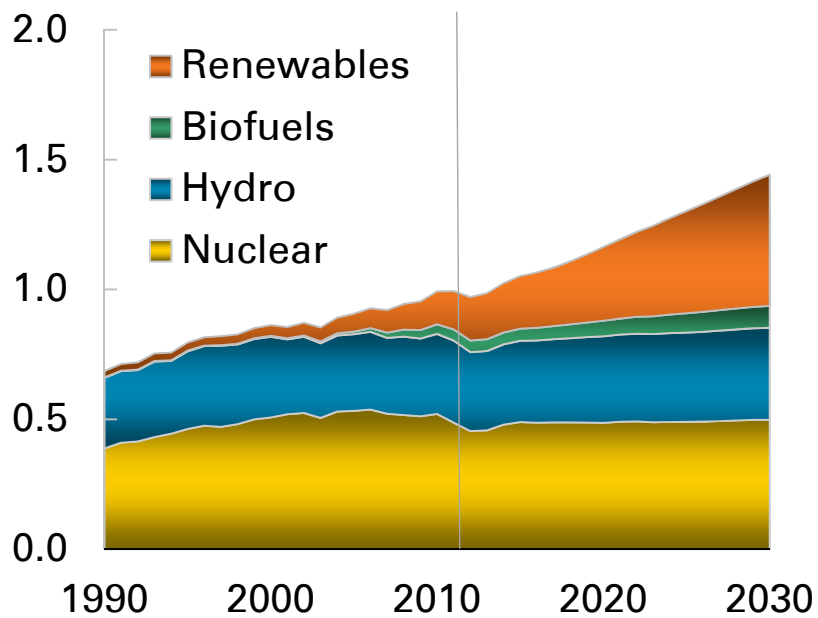


OECD

Non-OECD

Billion toe

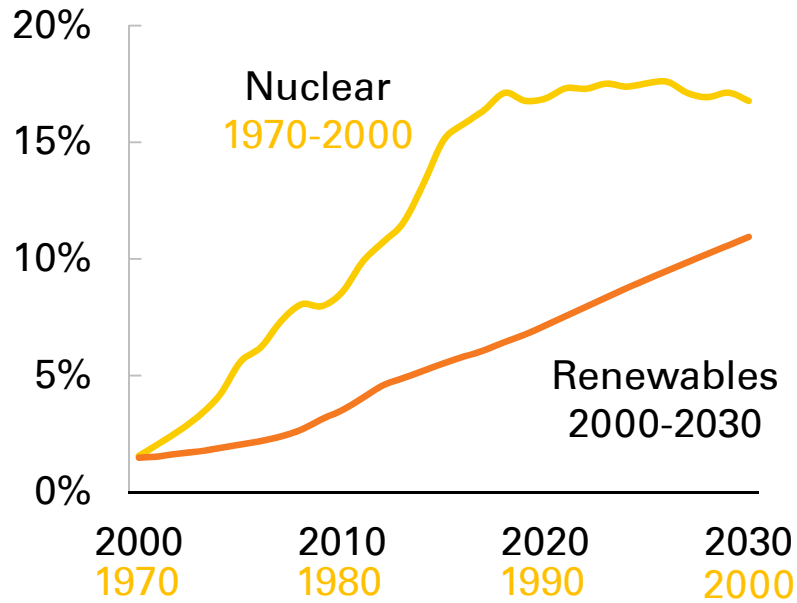
Billion toe



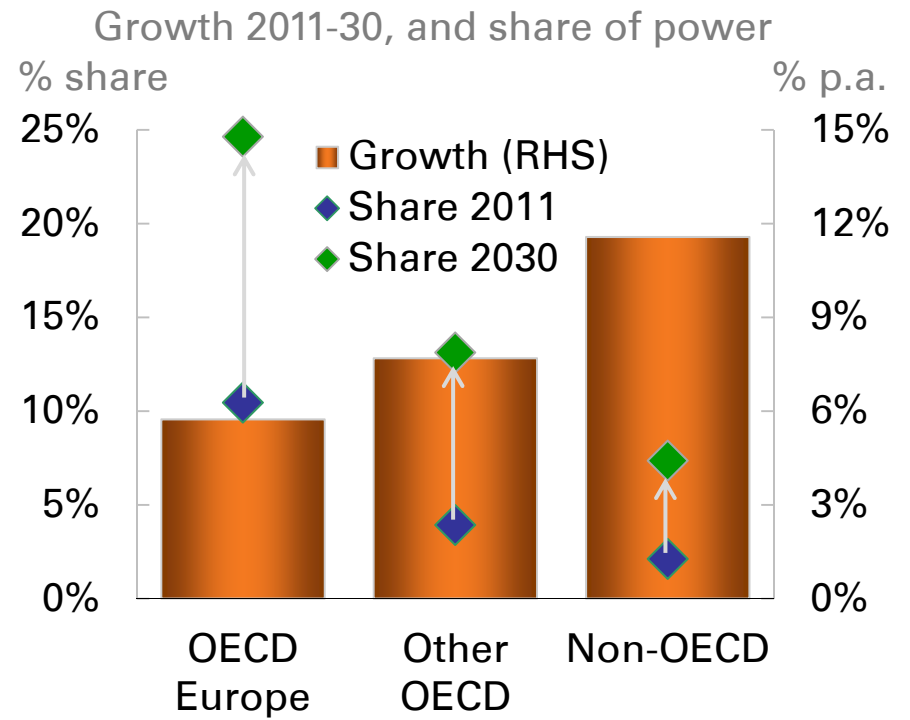


Growth of renewables in power

Share of power generation



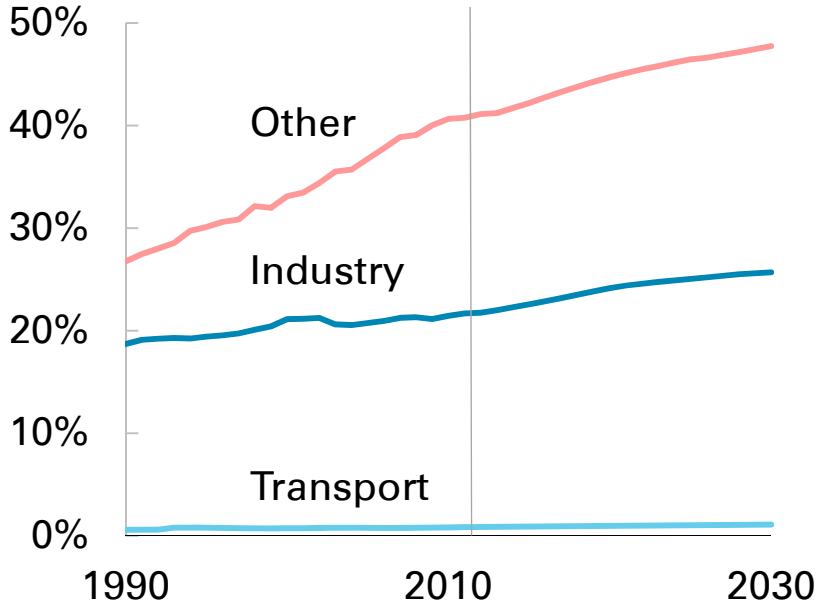
Renewable power



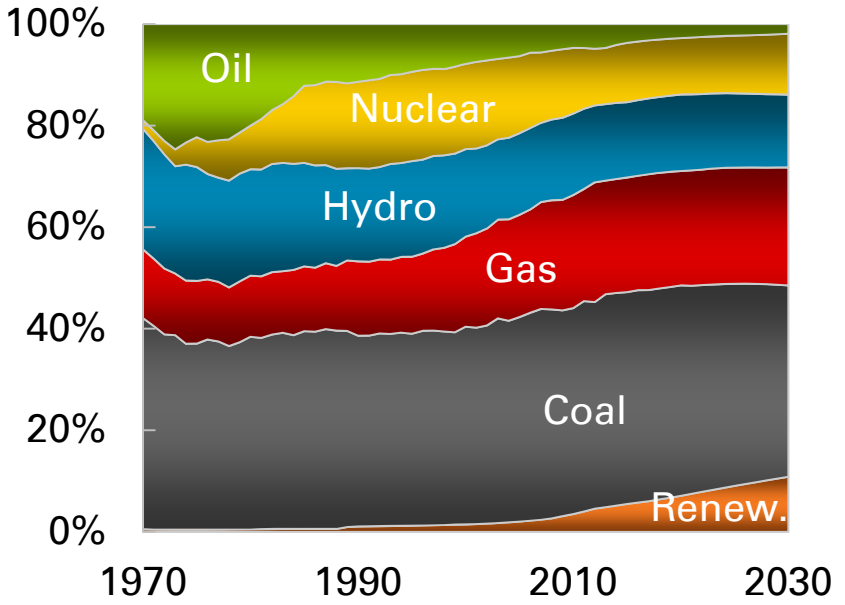


Power generation and electricity use

Electricity share of final consumption



Shares of power output





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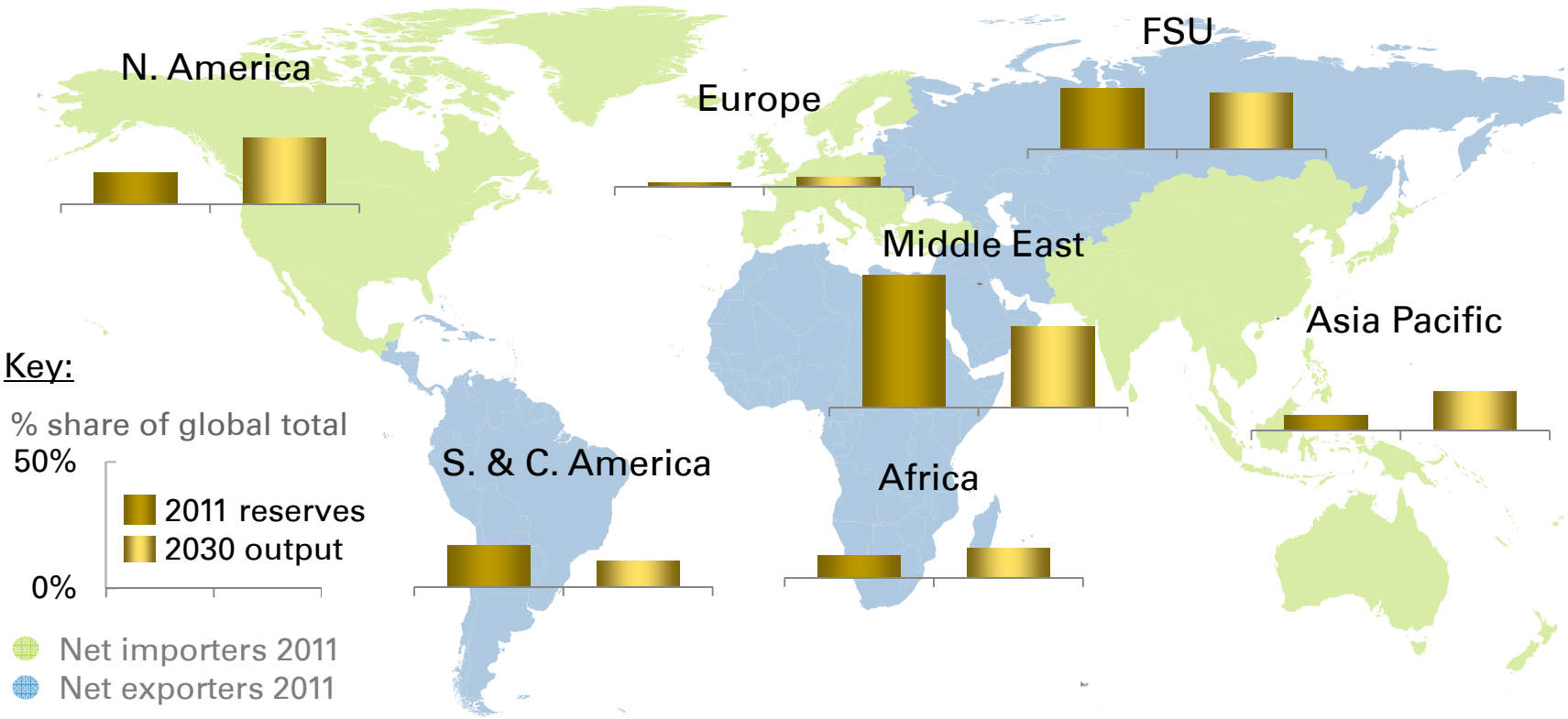
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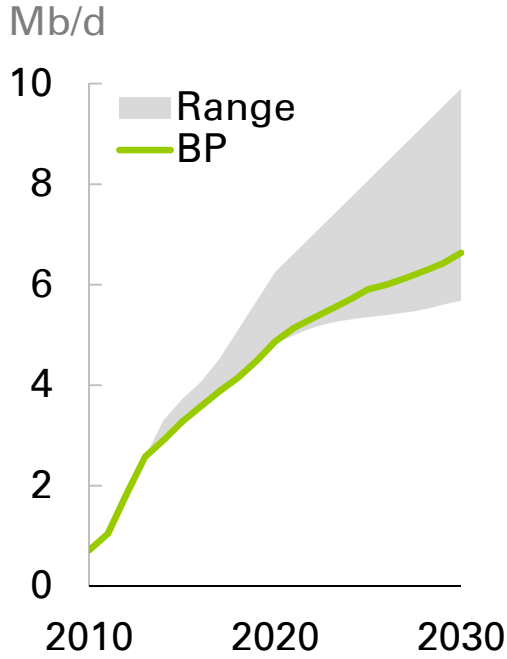
Oil and gas: reserves and production



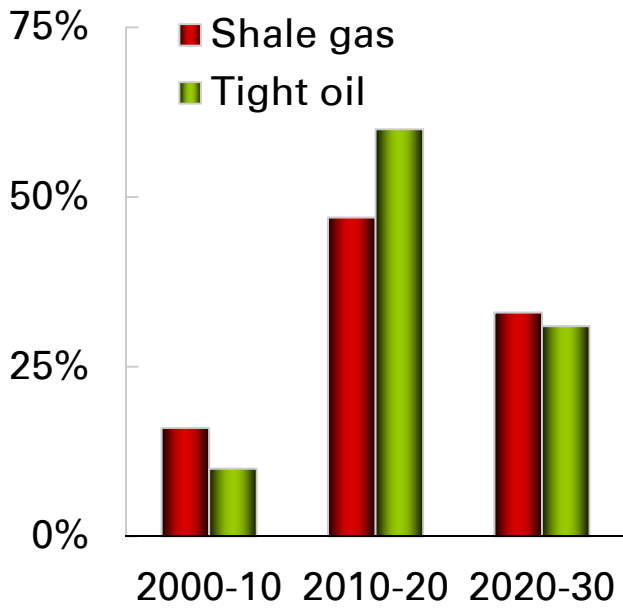


Tight oil and shale gas uncertainties

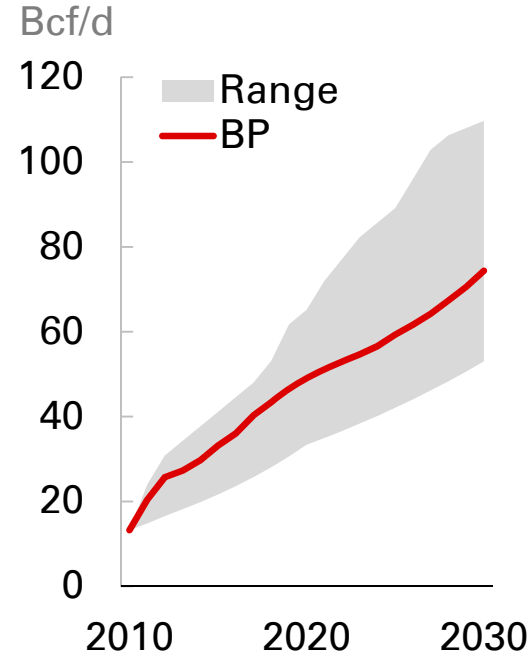
Range of tight oil forecasts (excludes NGLs)



Share of global supply growth

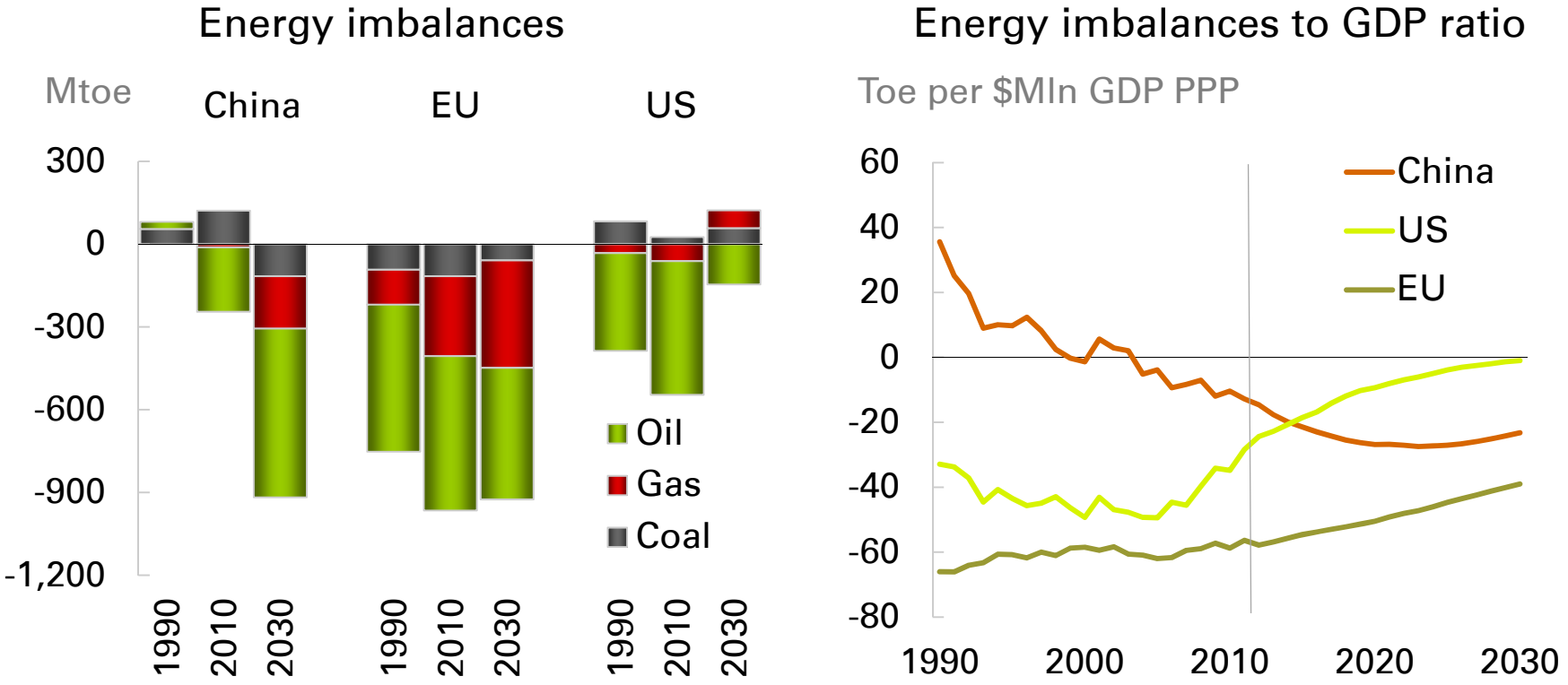


Range of shale gas forecasts



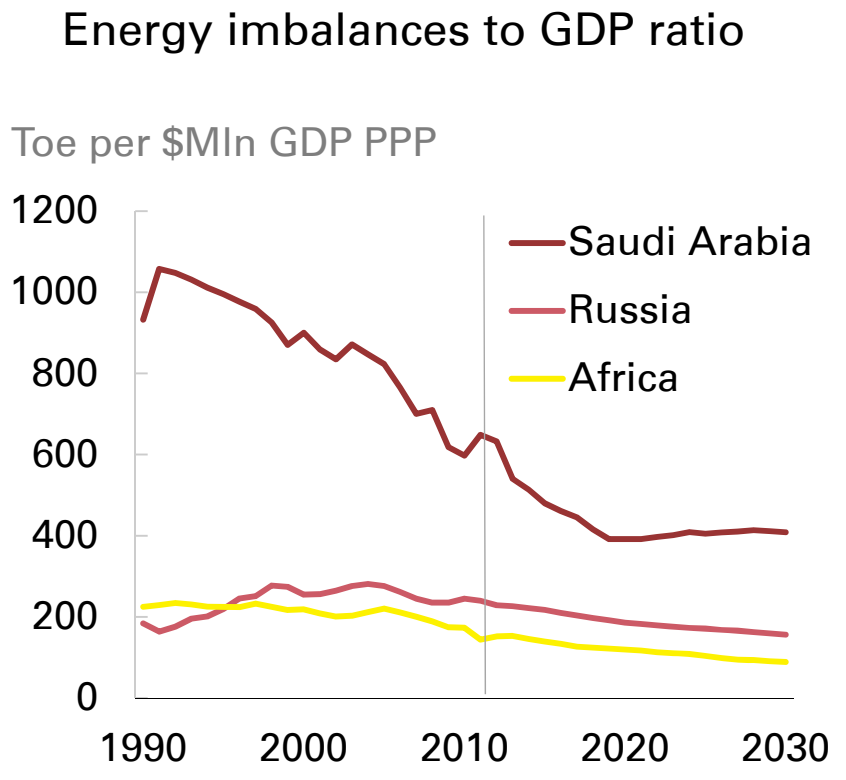
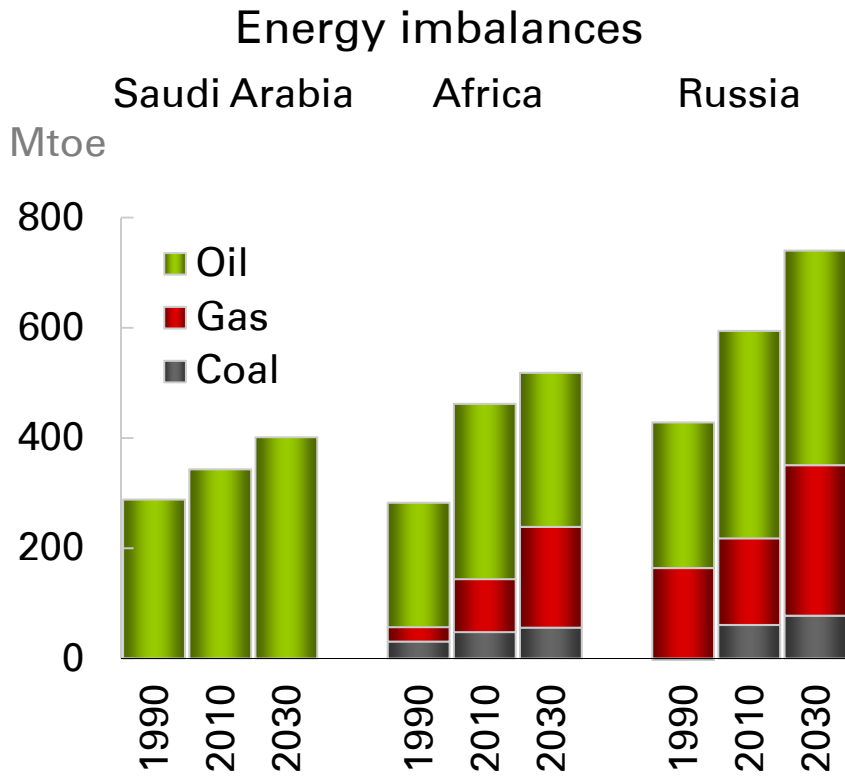


Energy imbalances: import profiles





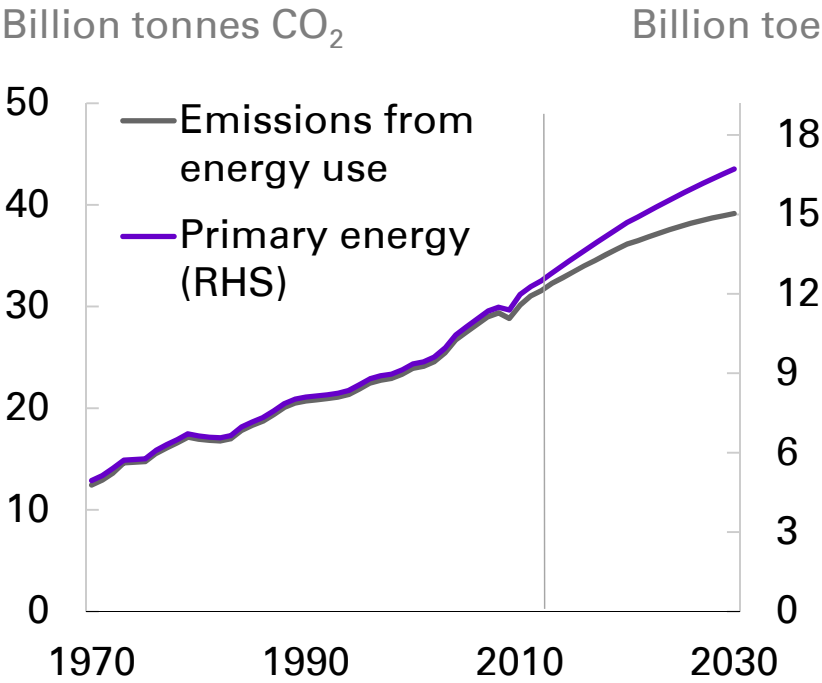
Energy imbalances: export profiles



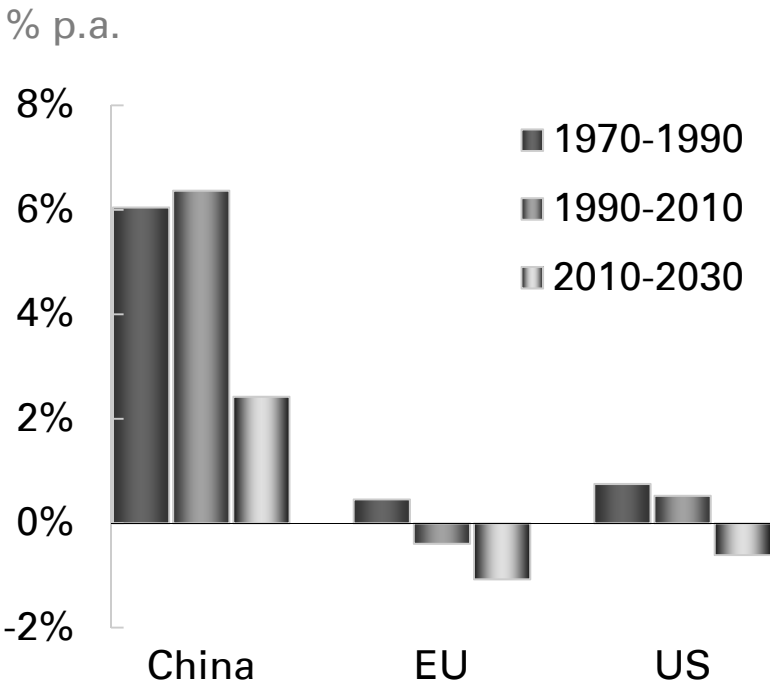


Energy and carbon emissions

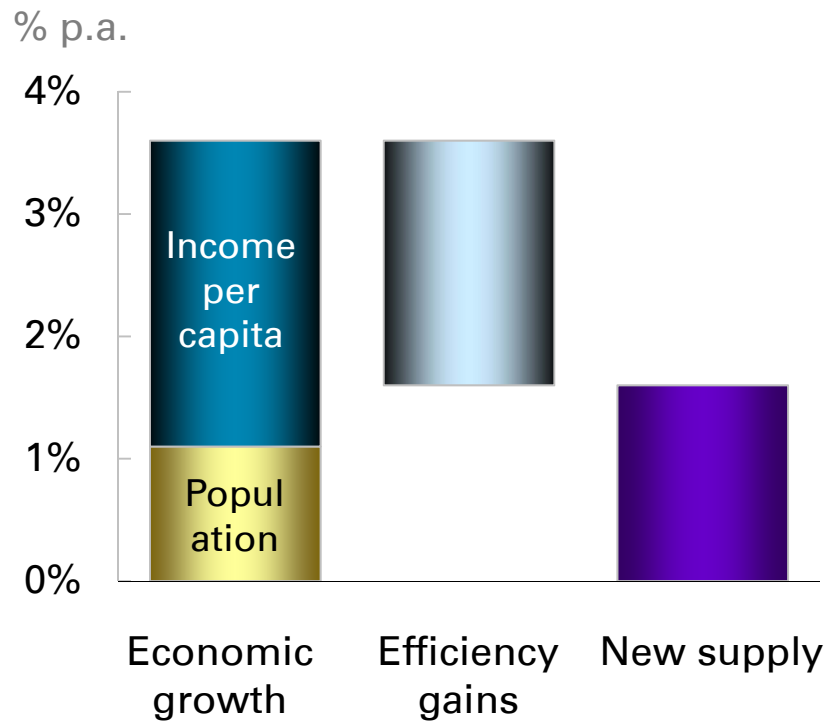
CO₂ emissions and primary energy



Growth of CO₂ emissions



Conclusion



- Economic growth needs energy
- Competition and innovation are the key to meeting this need
 - energy efficiency
 - new supplies
- Energy security and climate change remain challenges

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