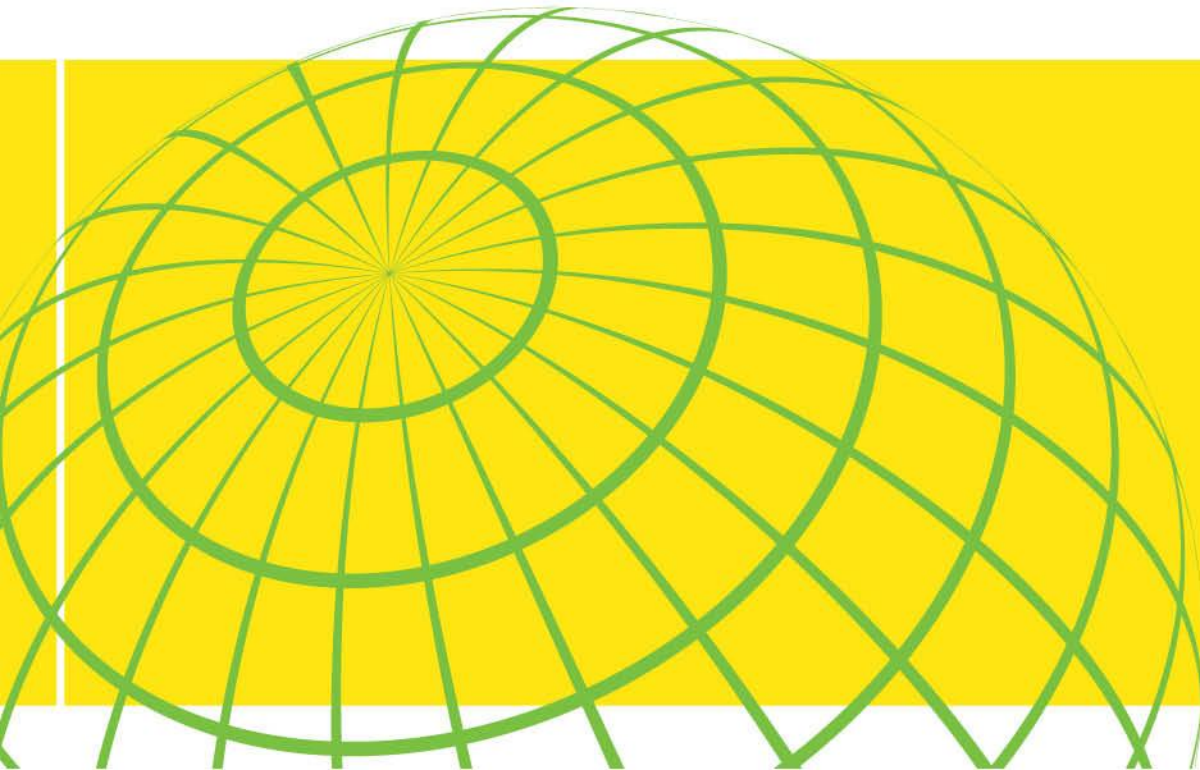


October 2013

BIEE Gas Seminar: Global Shifts in Gas Demand

Kai Dunker, Lead Economist Global Gas Markets



Disclaimer



This presentation contains forward-looking statements, particularly those regarding global economic growth, population growth, energy consumption, policy support for renewable energies and sources of energy supply. Forward-looking statements involve risks and uncertainties because they relate to events, and depend on circumstances, that will or may occur in the future. Actual outcomes may differ depending on a variety of factors, including product supply, demand and pricing; political stability; general economic conditions; legal and regulatory developments; availability of new technologies; natural disasters and adverse weather conditions; wars and acts of terrorism or sabotage; and other factors discussed elsewhere in this presentation.

Introduction

Outlook 2030: Natural Gas

Outlook 2030: Natural Gas - Europe

Conclusion

Appendix

Introduction

Outlook 2030: Natural Gas

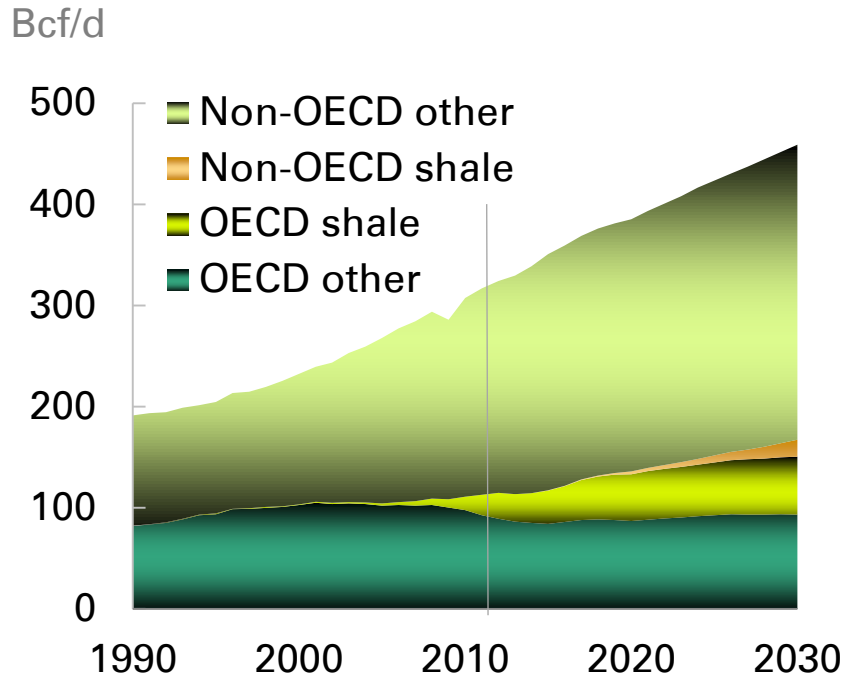
Outlook 2030: Natural Gas - Europe

Conclusion

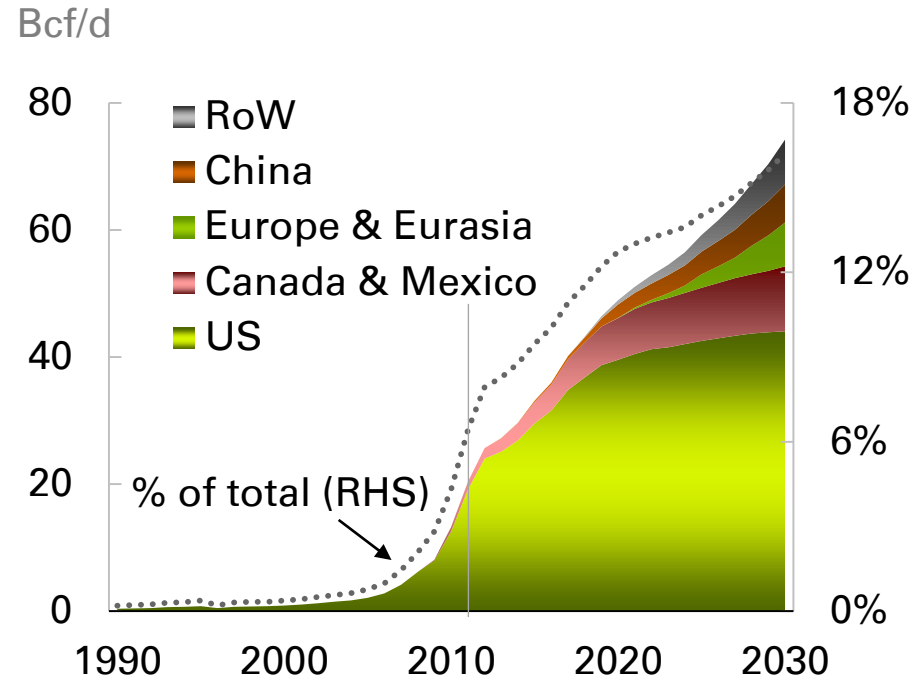
Appendix

Shale gas and global supply growth

Gas production by type and region

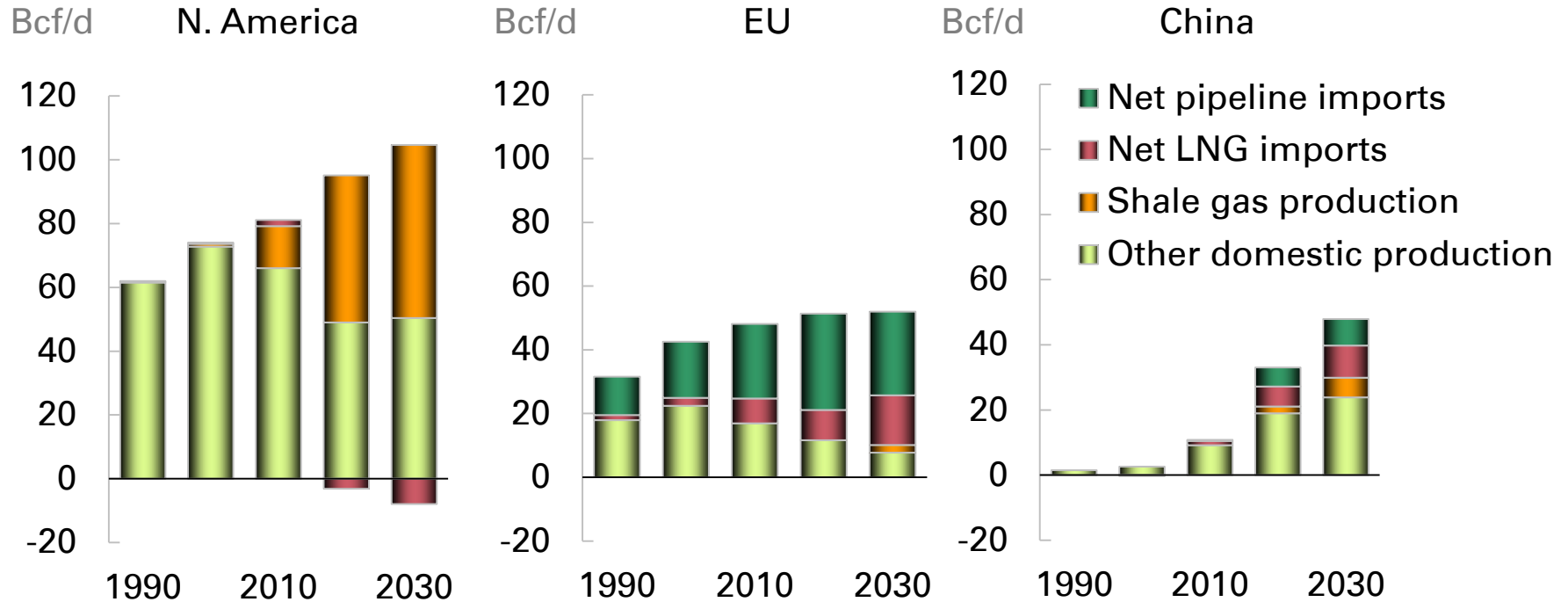


Shale gas production



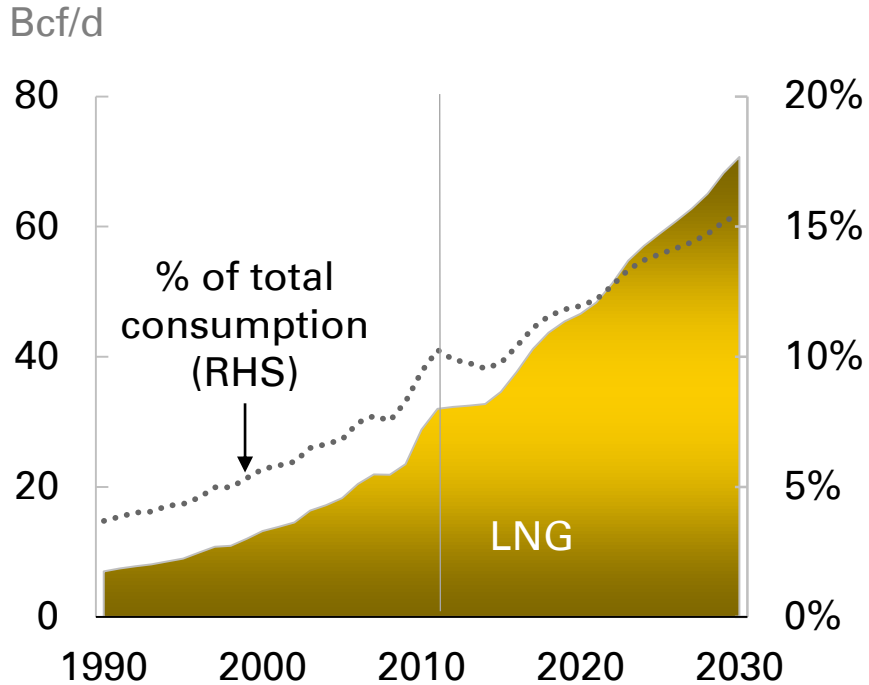
Shale gas: regional growth

Sources of gas supply, by region



Gas trade and market integration

LNG exports

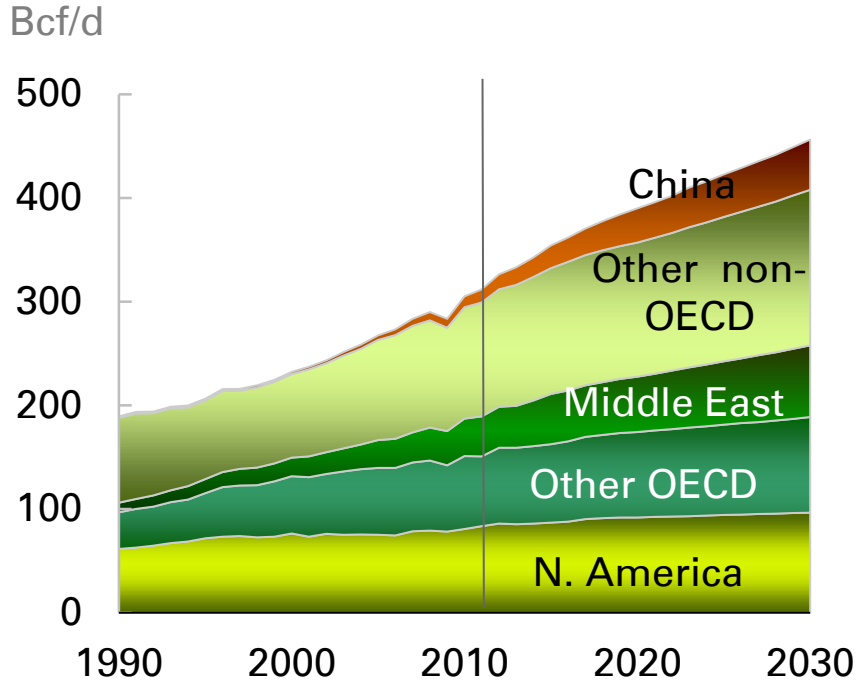


LNG diversification

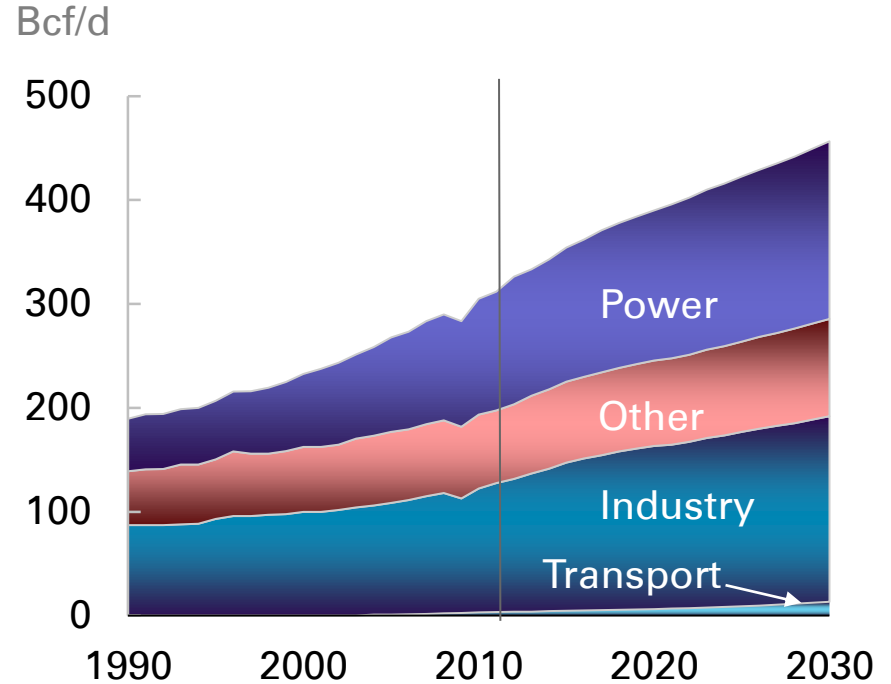


Global gas demand outlook

Demand by region



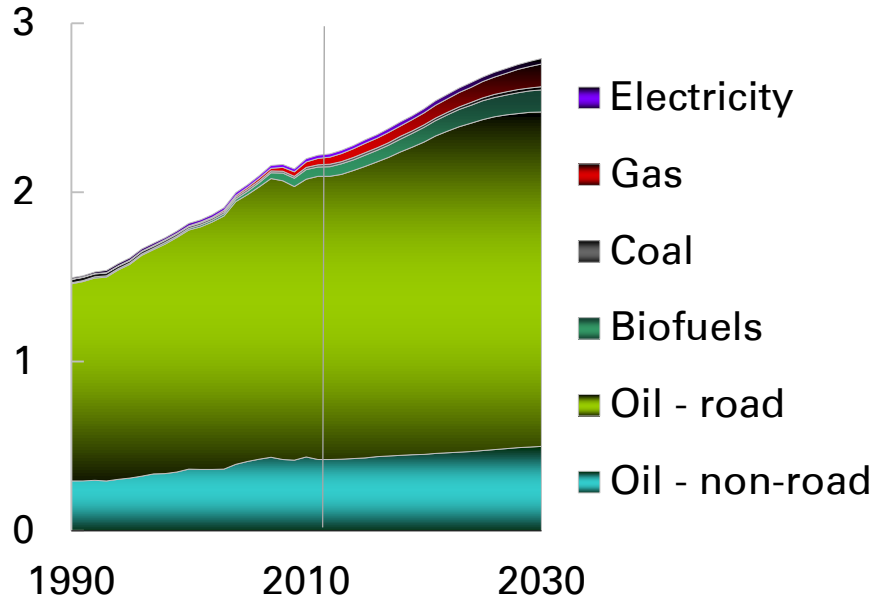
Demand by sector



Gas demand relative to other fuels

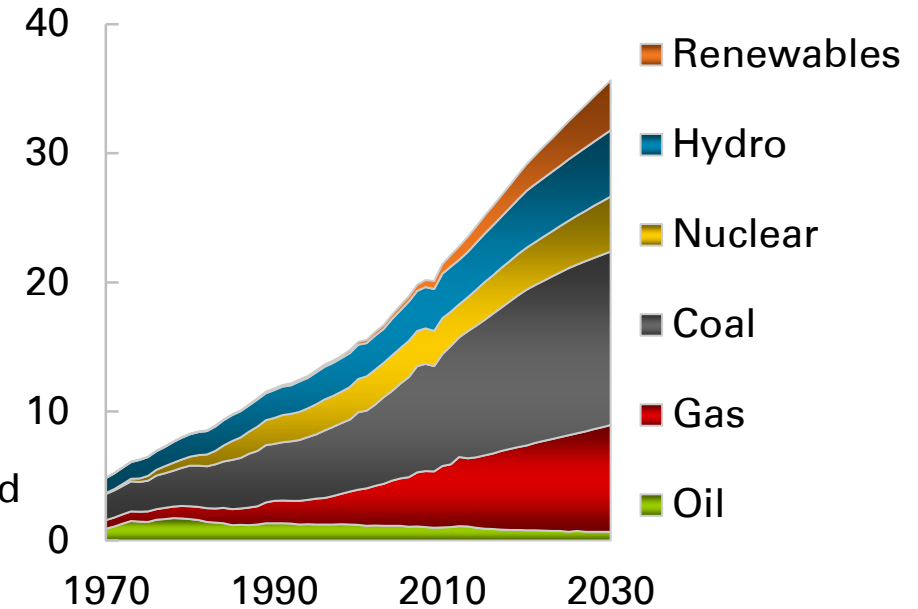
Transport demand by fuel

Billion toe



World power generation

Thousand TWh



Introduction

Outlook 2030: Natural Gas

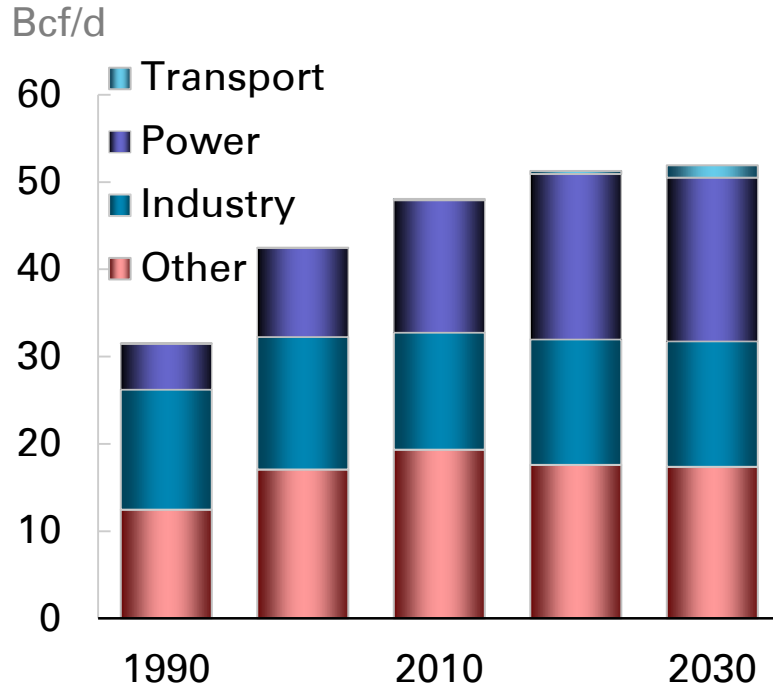
Outlook 2030: Natural Gas - Europe

Conclusion

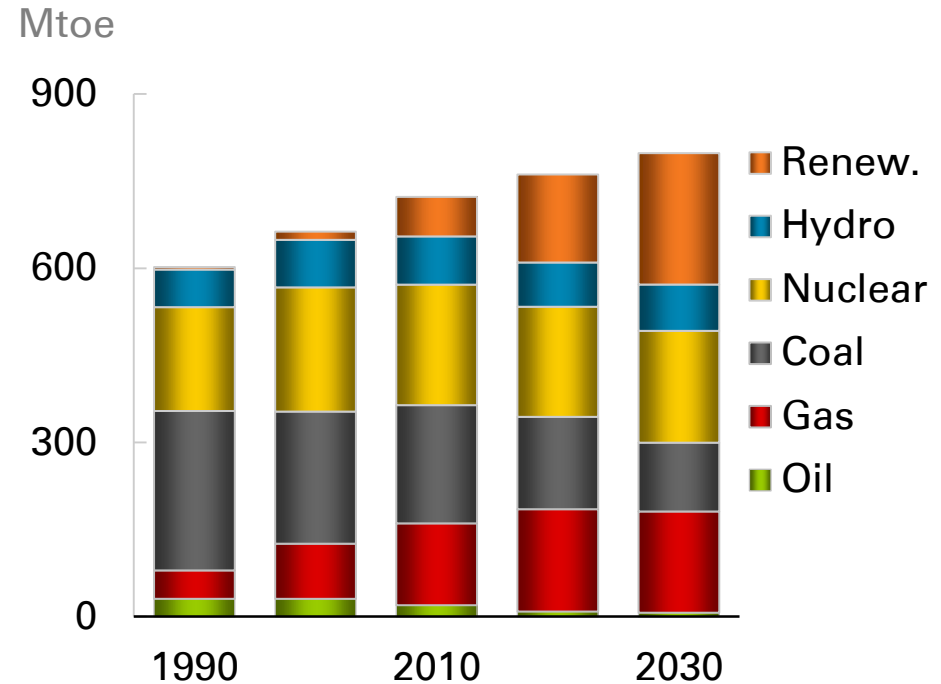
Appendix

European demand outlook

EU natural gas consumption



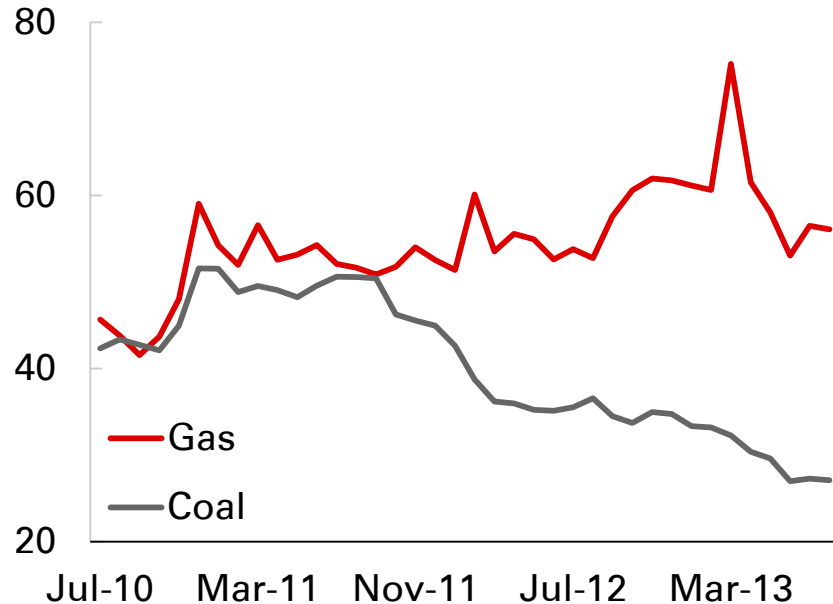
EU power generation input mix



European gas-coal competition

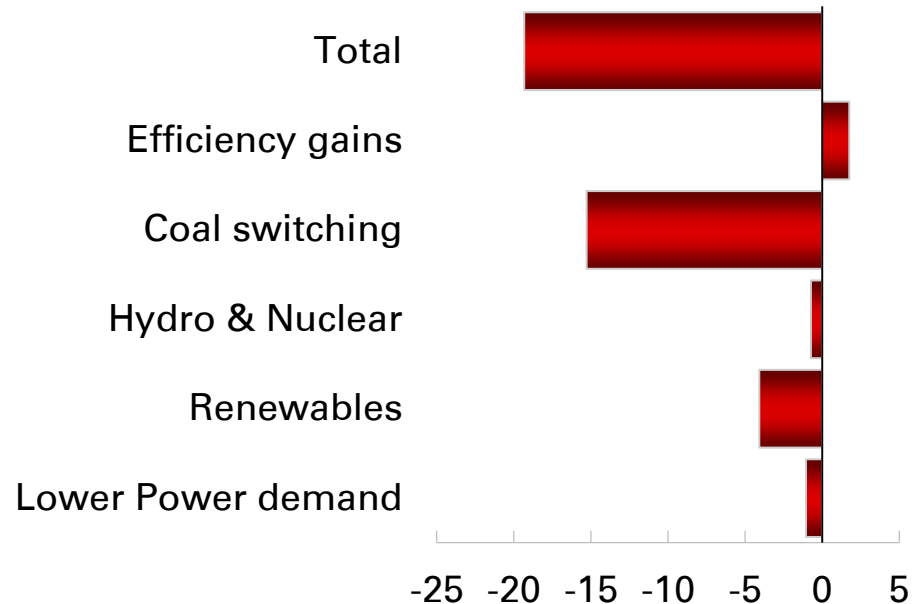
EU power generation cost

€/MWh



EU natural gas power gen. decline

2012 change, Mtoe



Source: includes data from Platts, IHS McCloskey and IntercontinentalExchange

Introduction

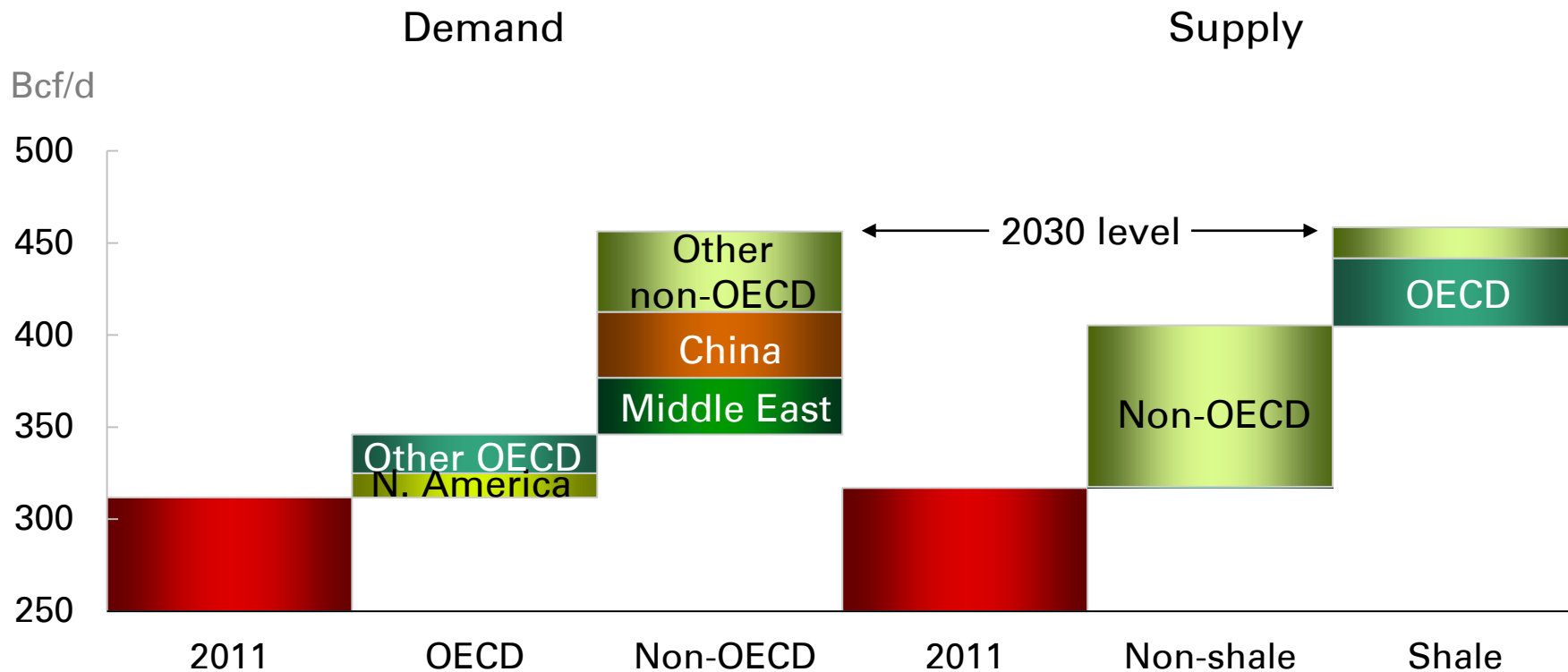
Outlook 2030: Natural Gas

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Global gas balance



The End
Thank you

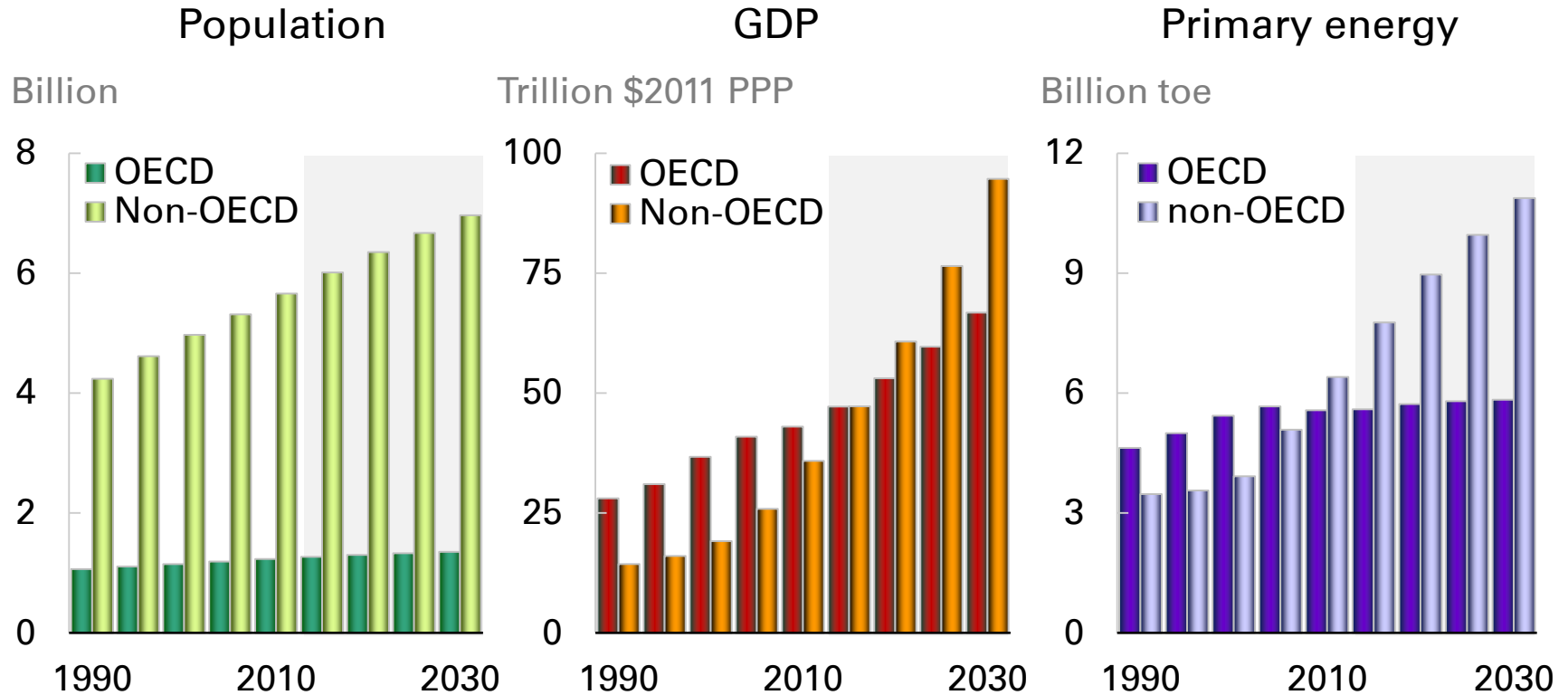
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Global energy trends

Outlook 2030: Natural Gas

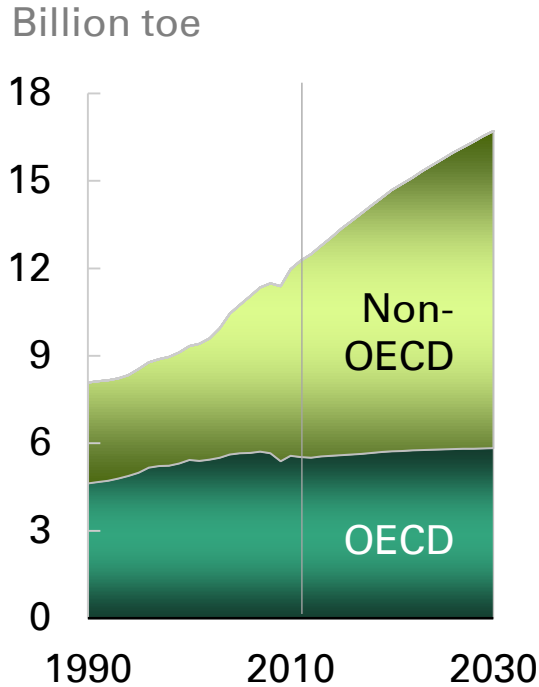
Appendix

Population, income and energy growth

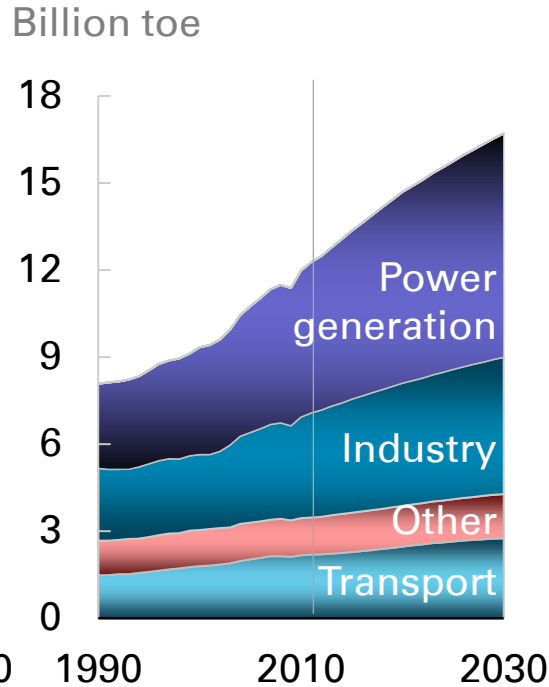


Industrialisation drives energy growth

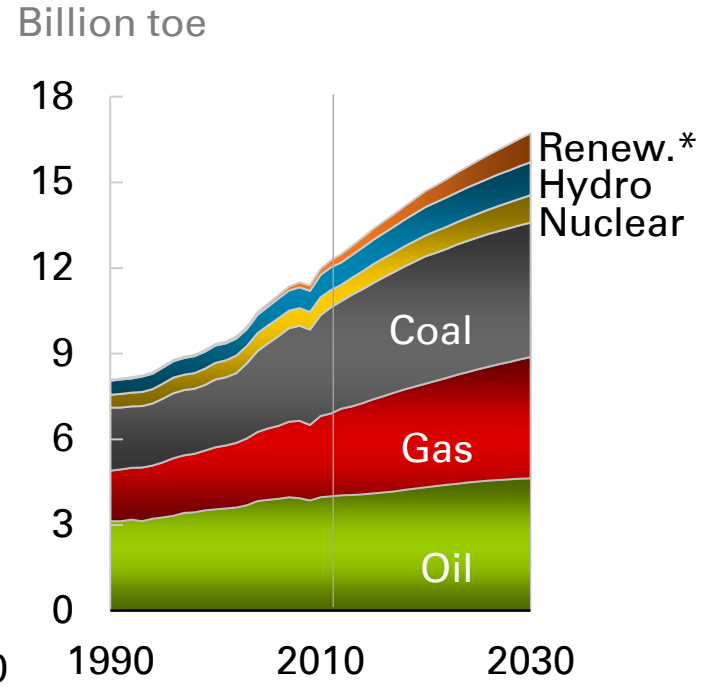
By region



By primary use



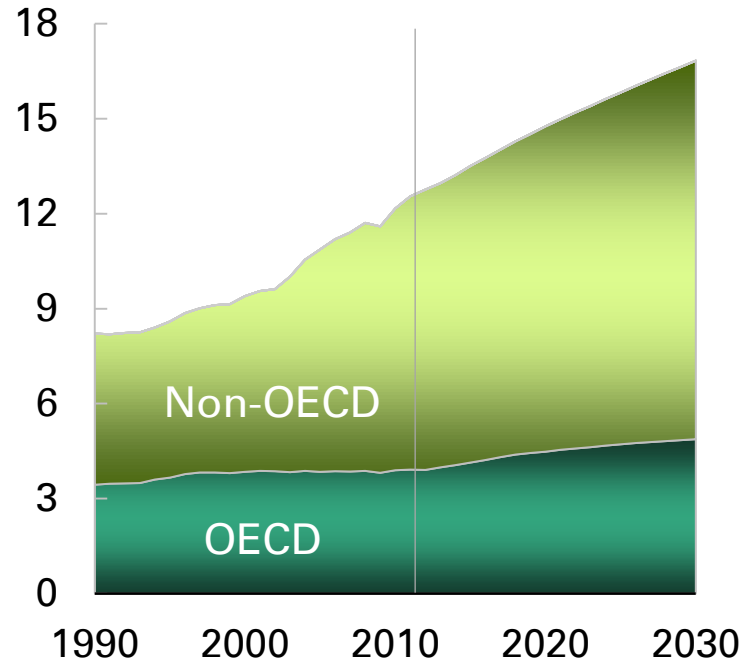
By fuel



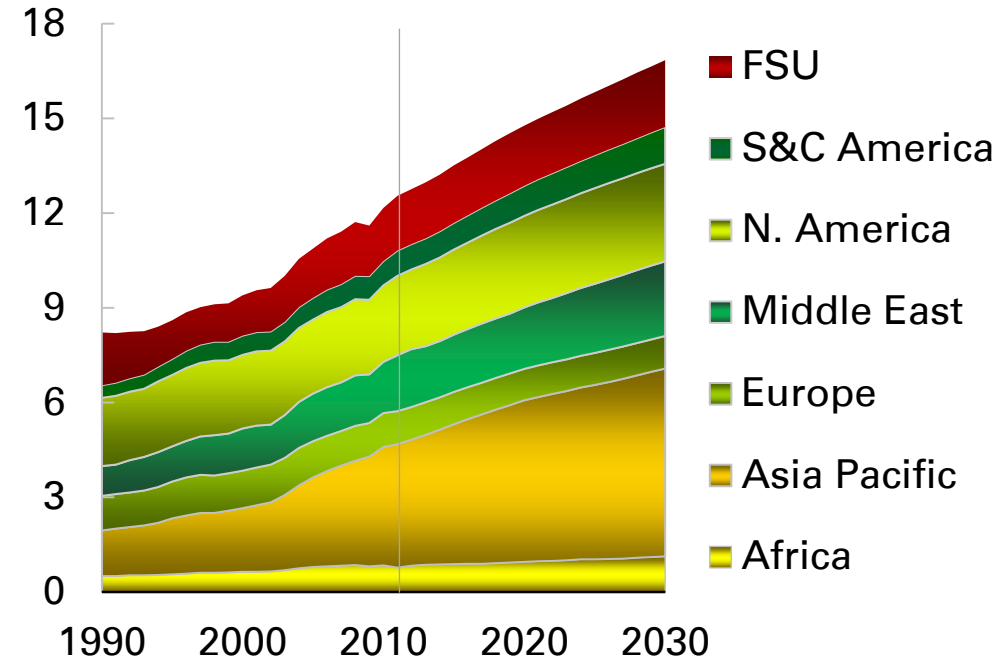
*Includes biofuels

Emerging economies dominate energy production

Billion toe

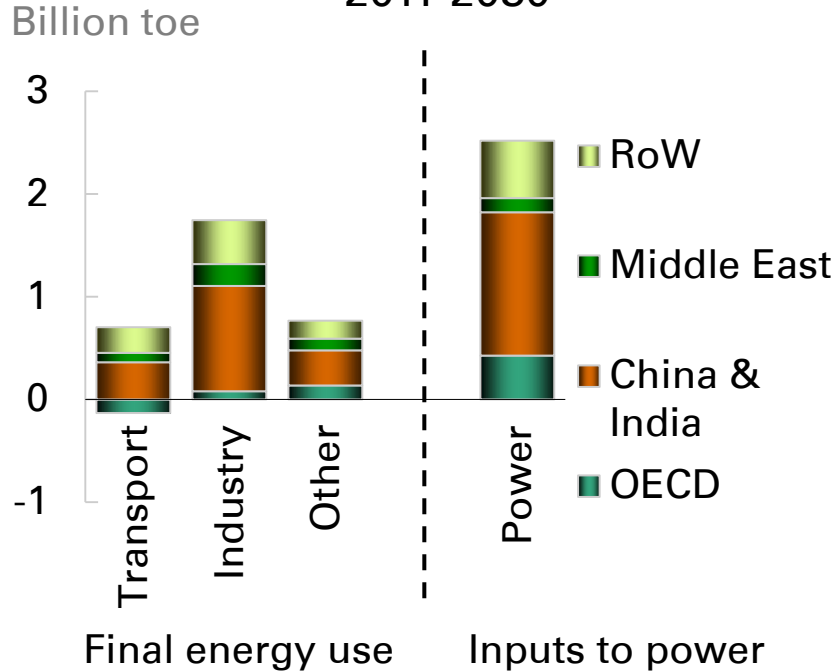


Billion toe

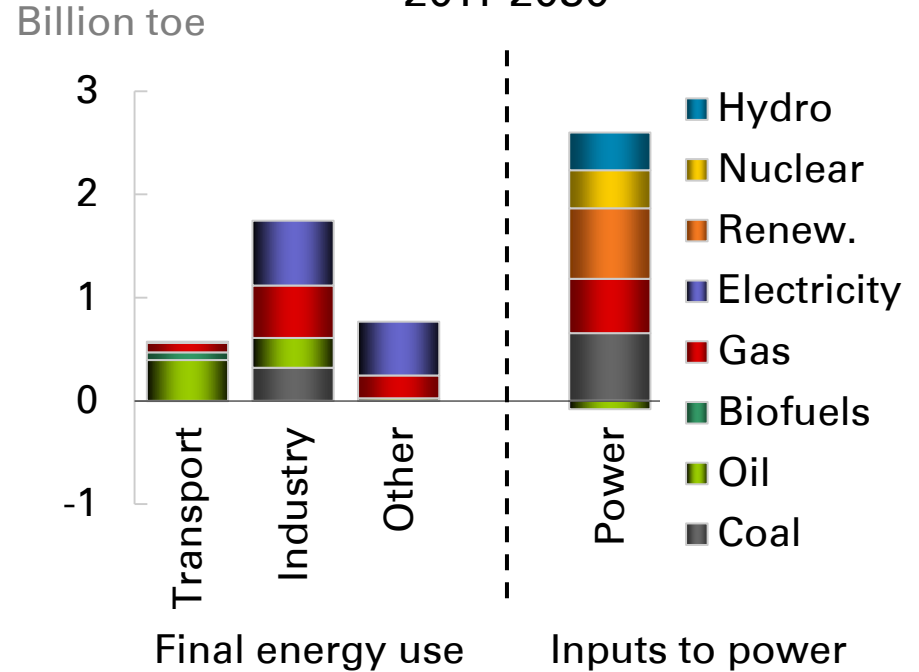


The power sector leads primary energy growth

Growth by sector and region, 2011-2030

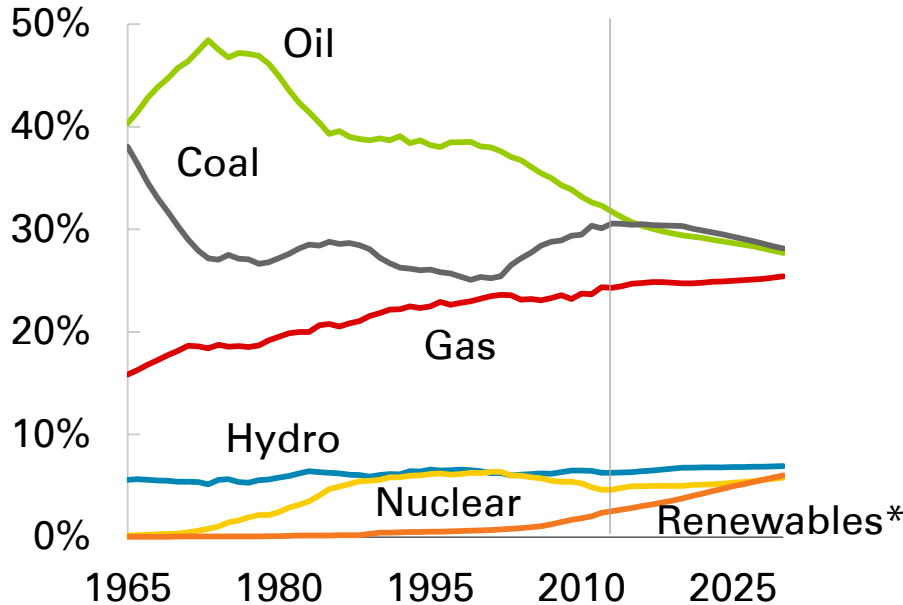


Growth by sector and fuel, 2011-2030



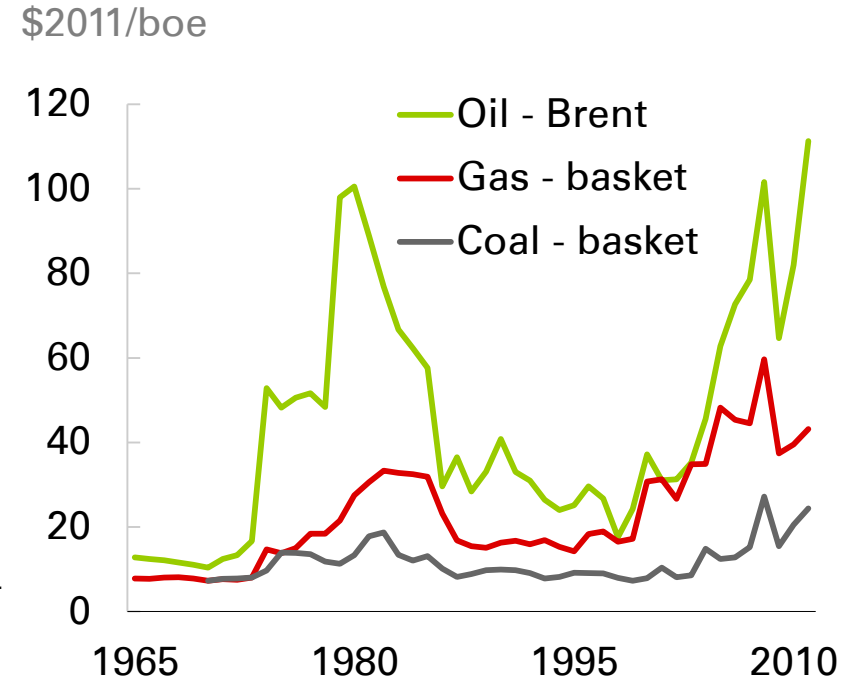
Fuel shares and energy prices

Shares of world primary energy



*Includes biofuels

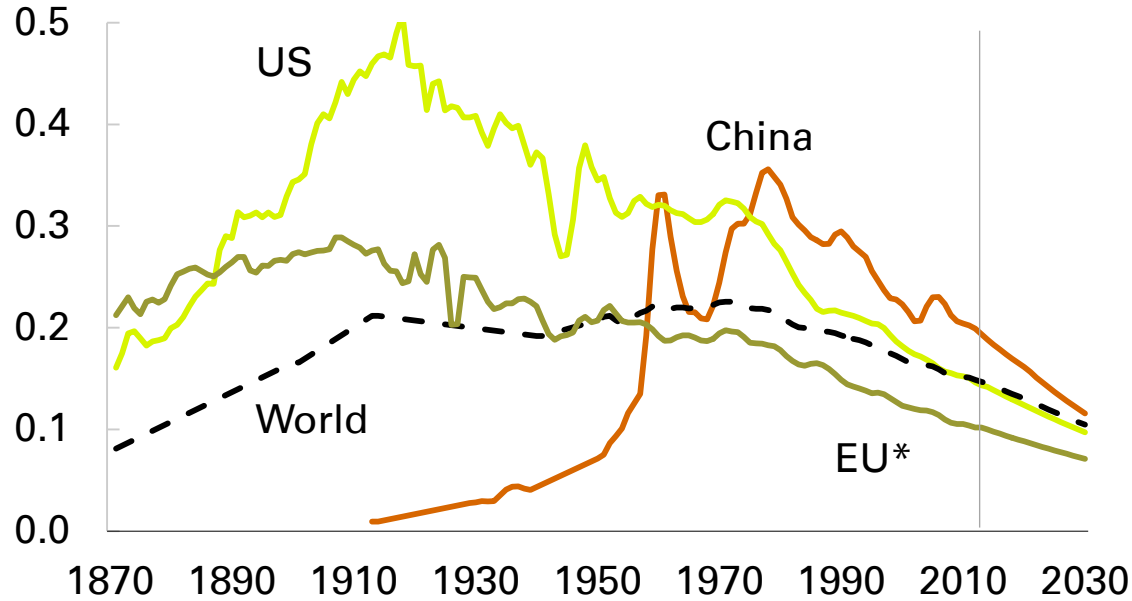
Energy prices



Energy efficiency improvements

Energy intensity by region

Toe per thousand \$2011 GDP (PPP)

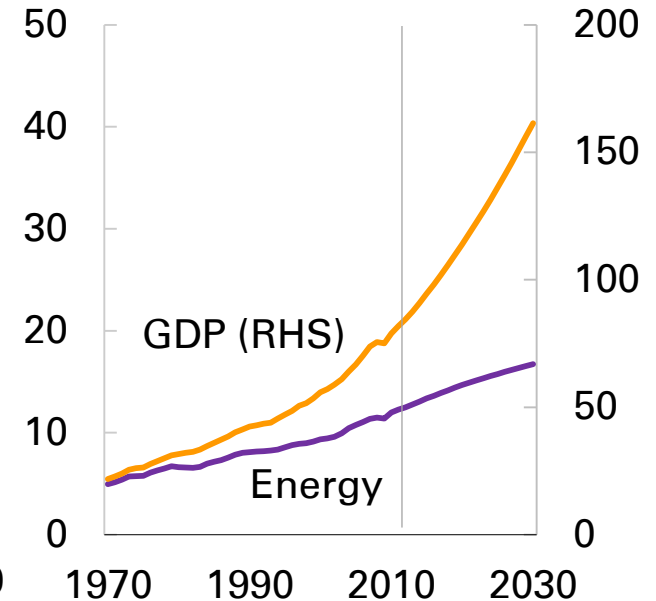


*Euro4 (France, Italy, Germany, UK) pre-1970

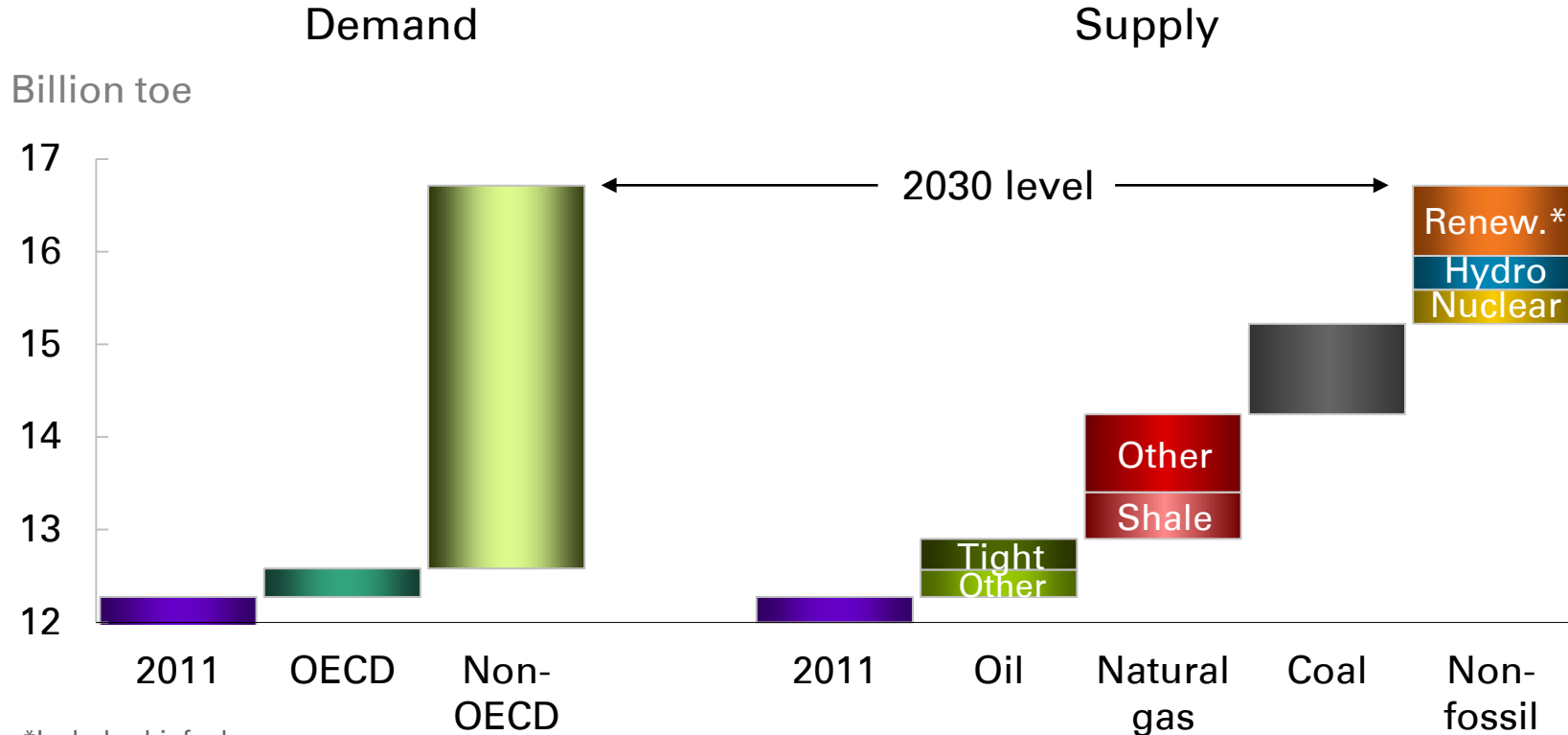
Energy and GDP

Billion toe

Trillion \$2011 (PPP)



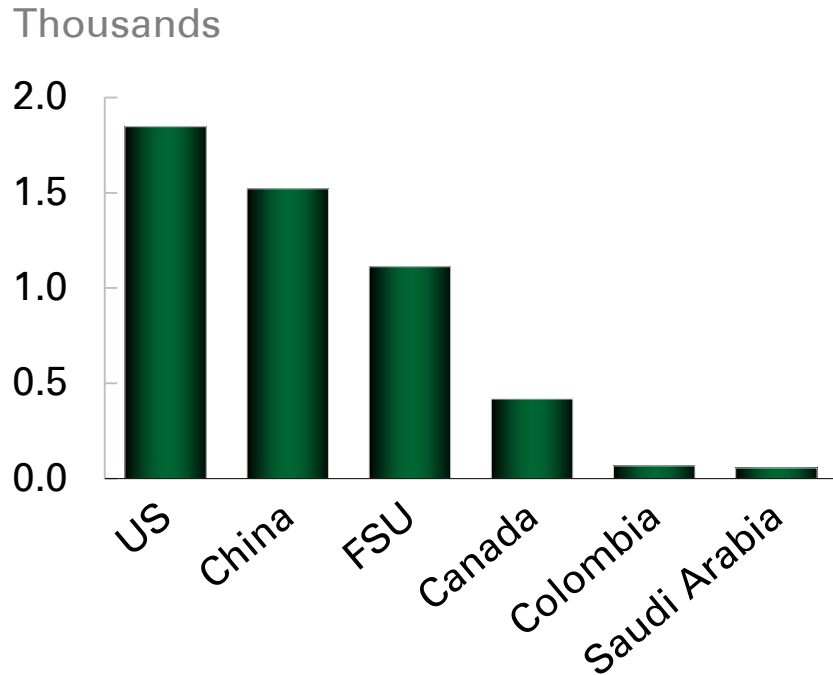
Energy supply growth



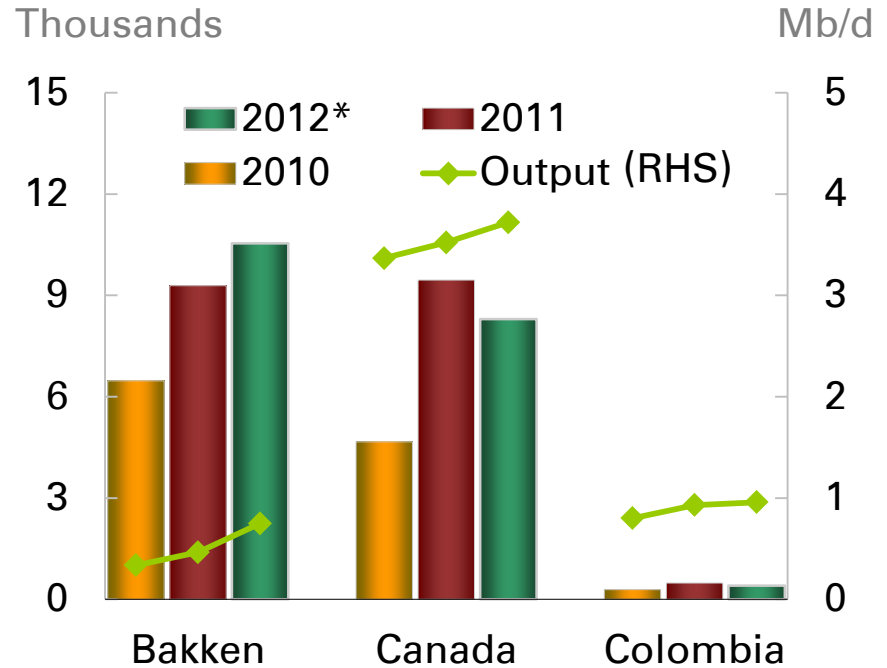
*Includes biofuels

US tight oil and shale gas: infrastructure requirements

Onshore oil & gas rigs 2011



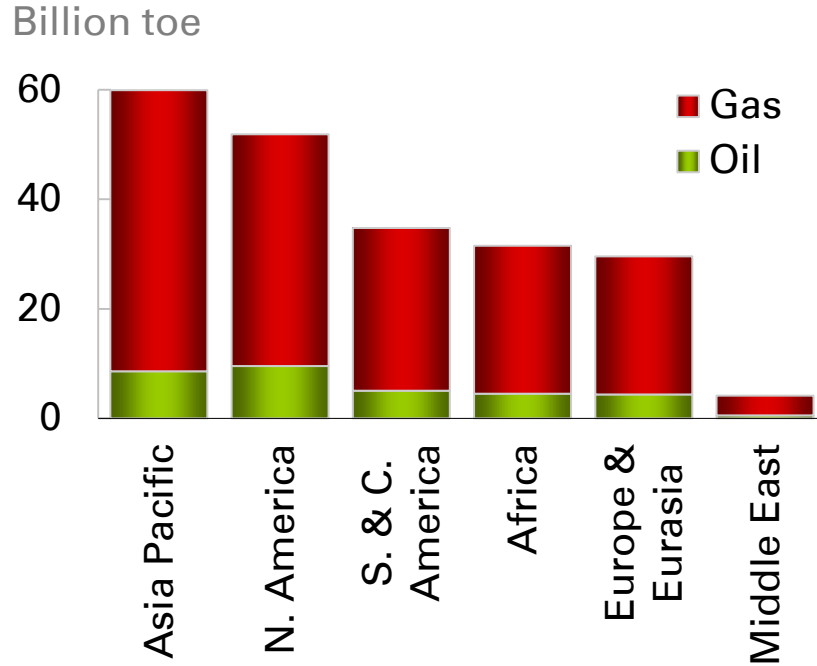
Oil wells drilled and output



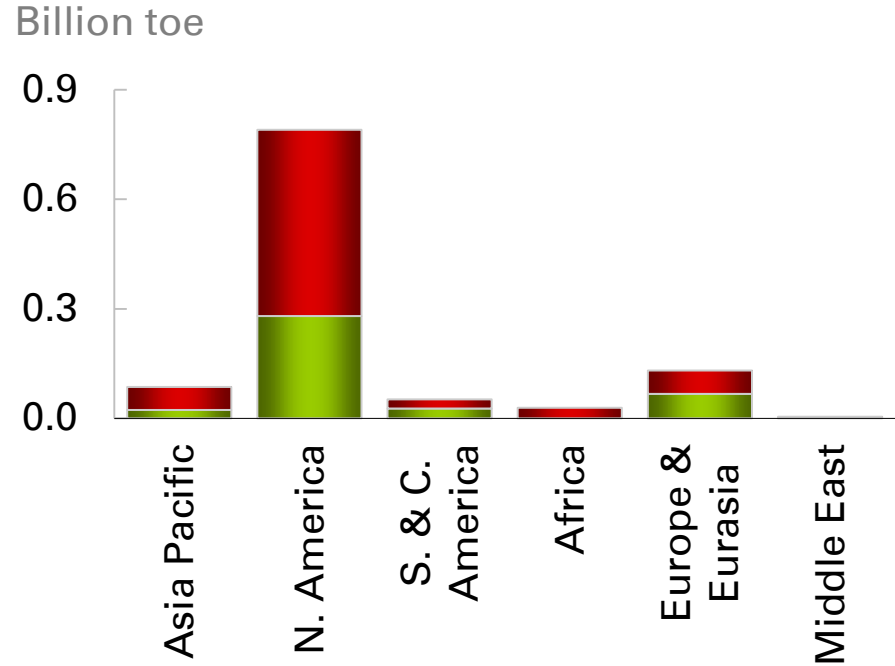
*Annualised from 1Q-3Q data

Shale gas and tight oil: resources and production

Current resources



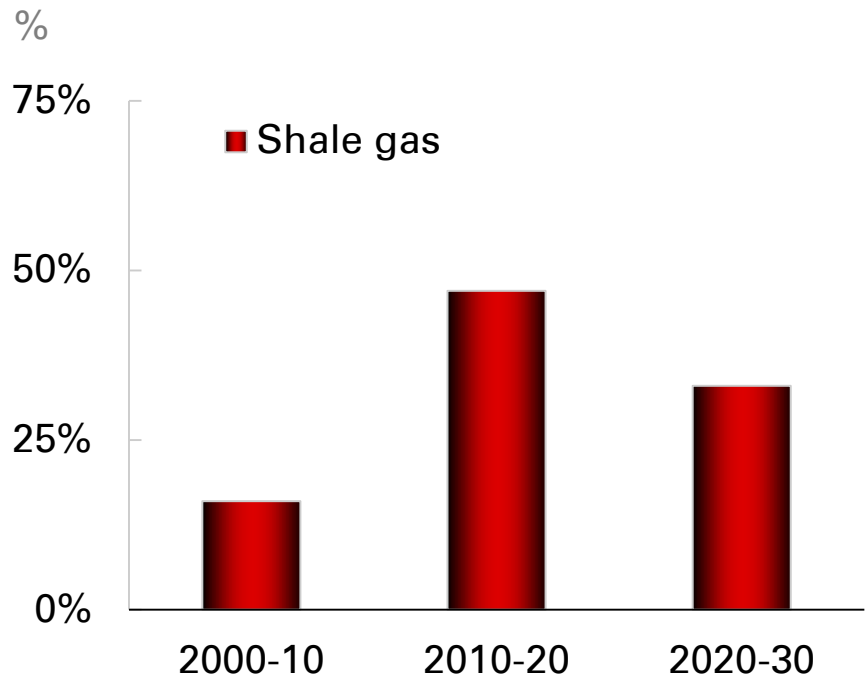
Production in 2030



Resources data © OECD/IEA 2012

Shale gas uncertainties

Share of global supply growth



Range of shale gas forecasts

