

## World Energy Outlook

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# The world energy scene today

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## ■ Some long-held tenets of the energy sector are being rewritten

- *Countries are switching roles: importers are becoming exporters...*
- *... and exporters are among the major sources of growing demand*
- *New supply options reshape patterns of trade*

## ■ But long-term solutions to global challenges remain scarce

- *Renewed focus on energy efficiency, but CO<sub>2</sub> emissions continue to rise*
- *Fossil-fuel subsidies increased to \$544 billion in 2012*
- *1.3 billion people lack electricity, 2.6 billion lack clean cooking facilities*

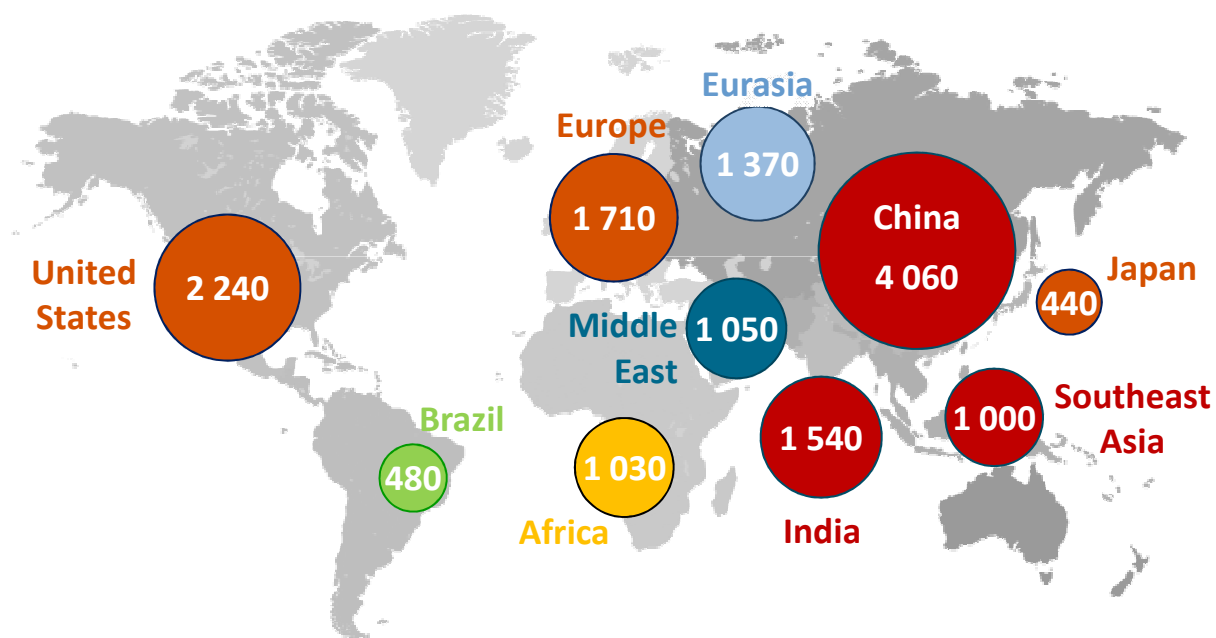
## ■ Energy prices add to the pressure on policymakers

- *Sustained period of high oil prices without parallel in market history*
- *Large, persistent regional price differences for gas & electricity*

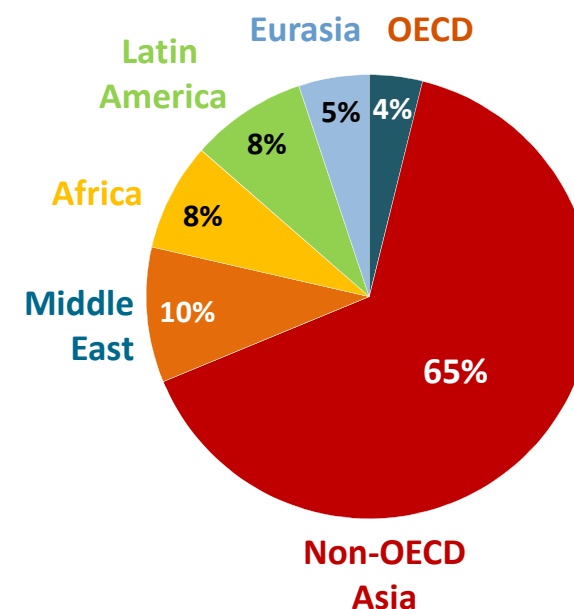
# The engine of energy demand growth moves to South Asia

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## Primary energy demand, 2035 (Mtoe)



## Share of global growth 2012-2035

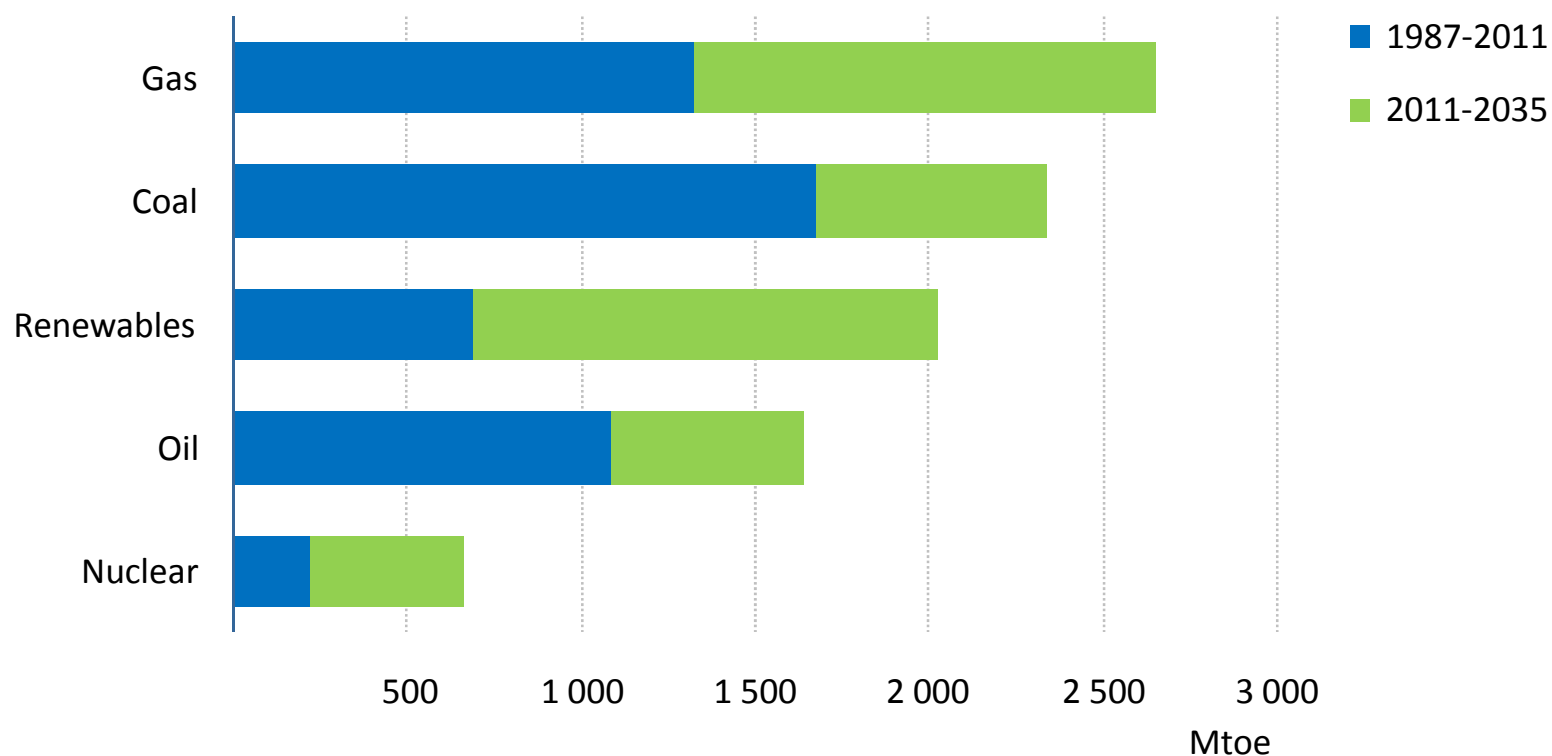


***China is the main driver of increasing energy demand in the current decade, but India takes over in the 2020s as the principal source of growth***

# A mix that is slow to change

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## Growth in total primary energy demand

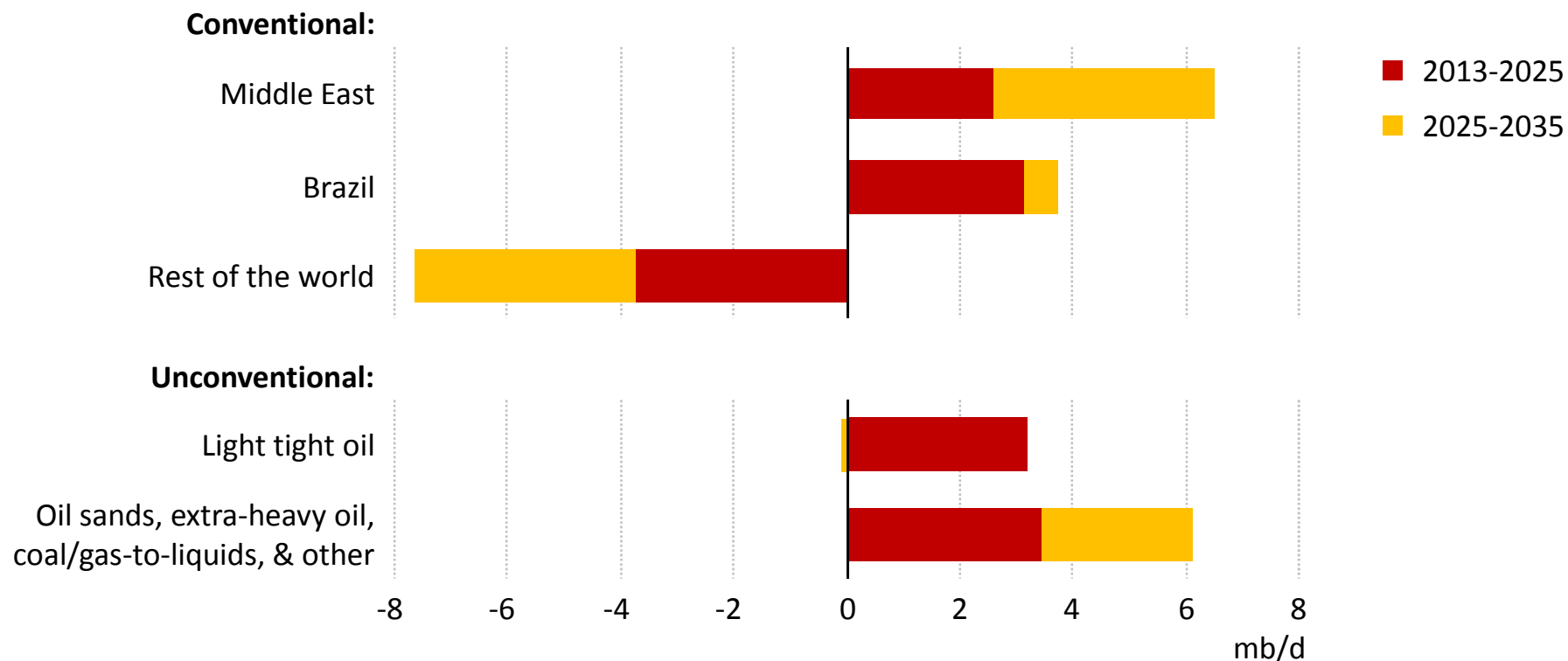


***Today's share of fossil fuels in the global mix, at 82%, is the same as it was 25 years ago; the strong rise of renewables only reduces this to around 75% in 2035***

# Two chapters to the oil production story

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## Contributions to global oil production growth



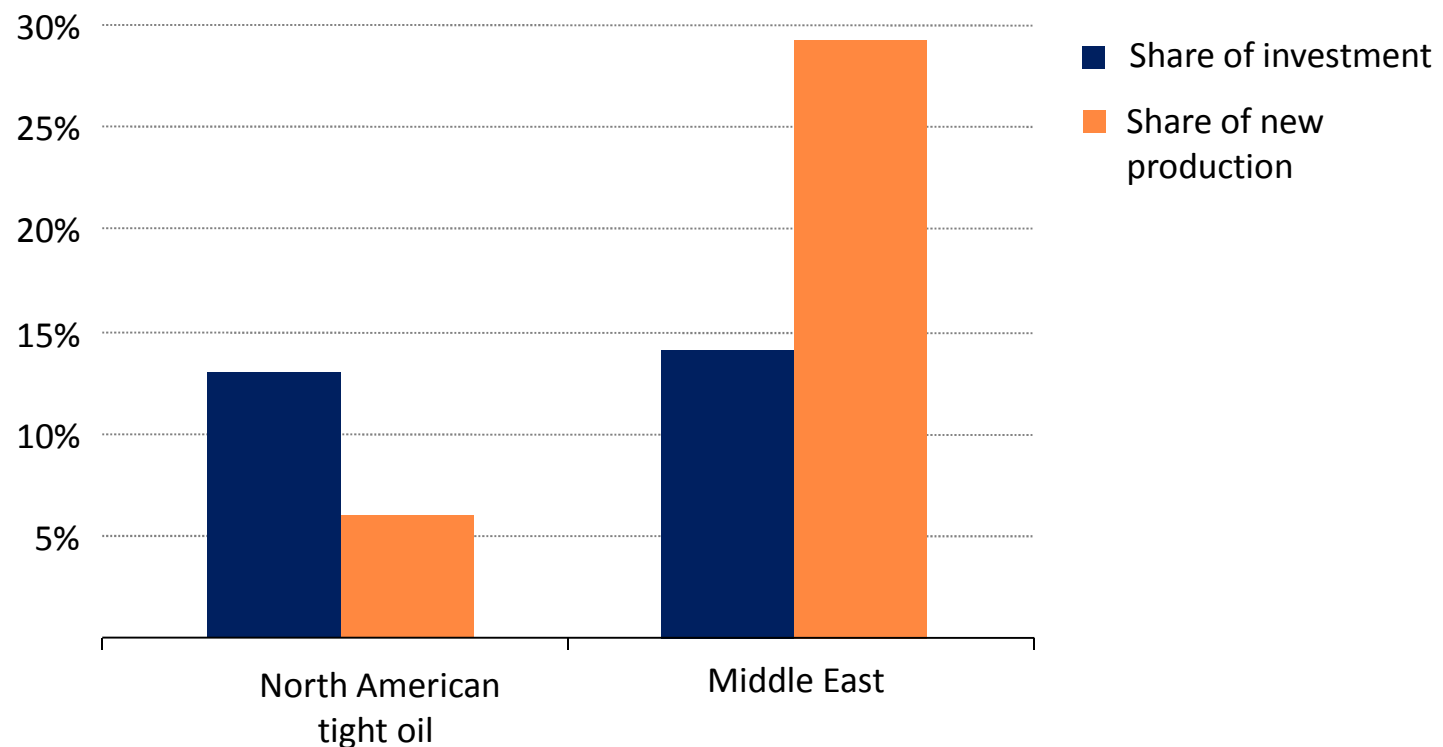
***The United States (light tight oil) & Brazil (deepwater) step up until the mid-2020s, but the Middle East is critical to the longer-term oil outlook***



# Middle East investment is critical to the global oil outlook

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## Share of upstream oil investment and of new production, 2014-2035

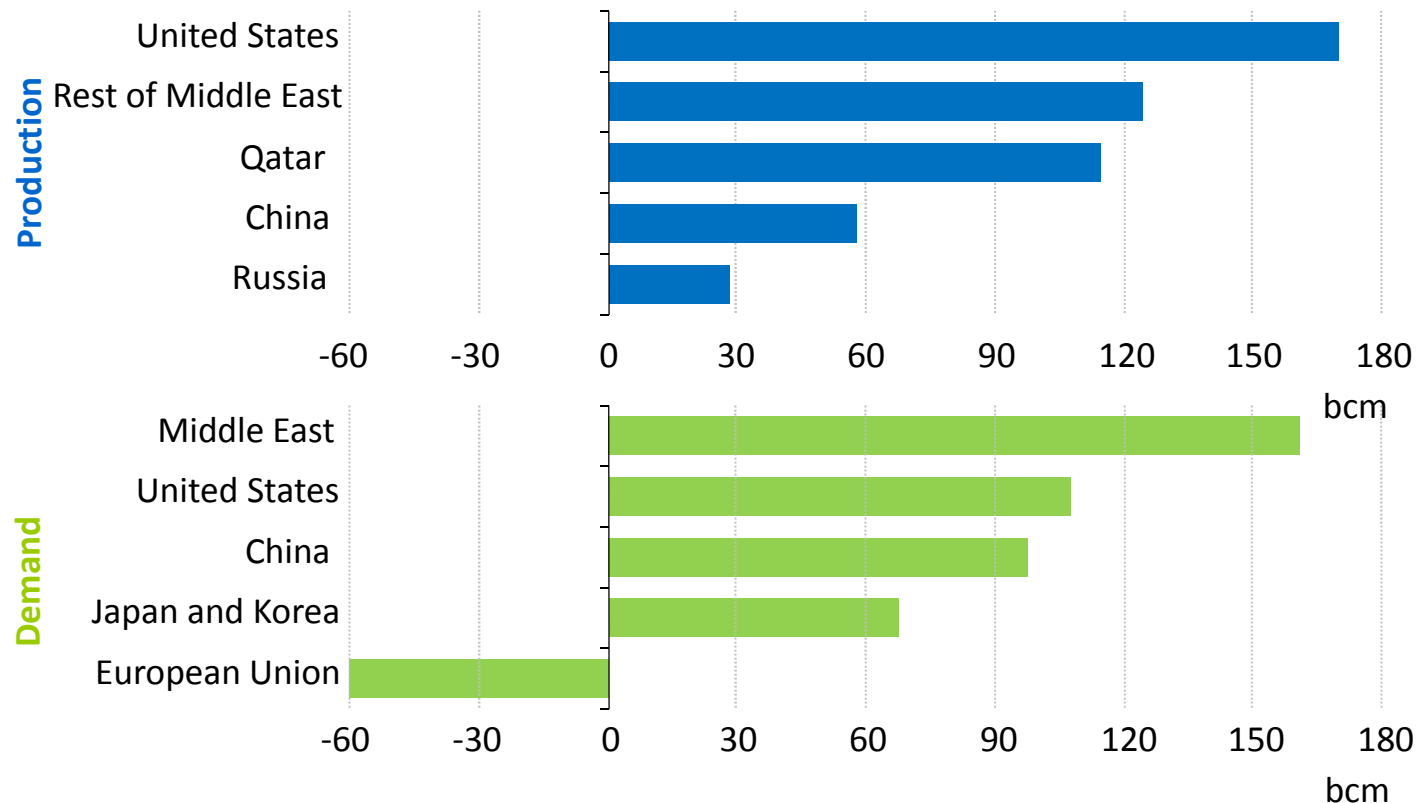


***Once the current rise in non-OPEC supply runs out of steam, a shortfall in Middle East investment would lead to volatile markets & prices \$15/barrel higher in 2025***

# Current market conditions vary markedly across the world

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## Natural gas demand and production growth in selected regions, 2005-2012

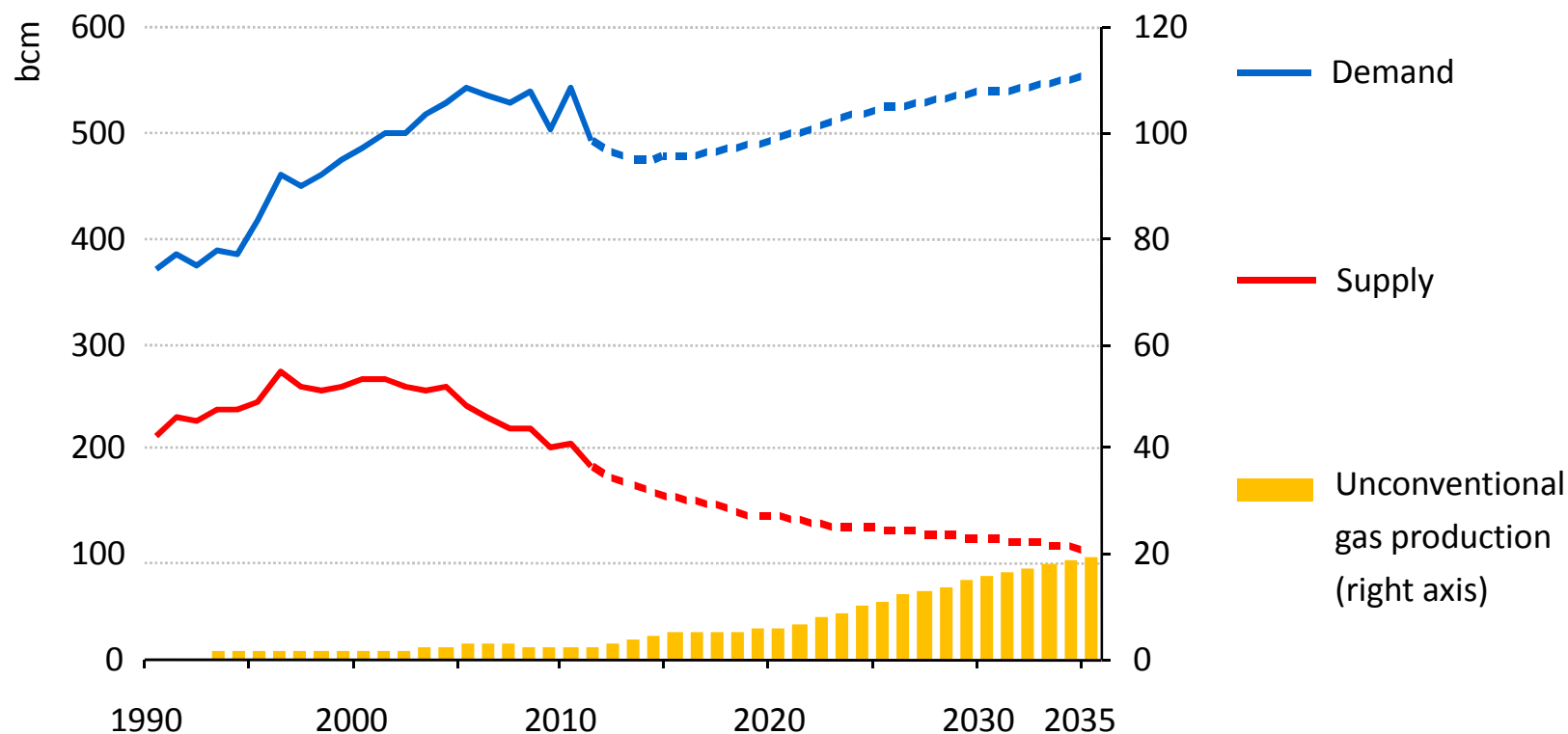


***Regional differences in gas prices have also grown, with potential implications for investment decisions and company strategies in energy-intensive industries***

# EU faces rising need for imported gas

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## European Union gas outlook



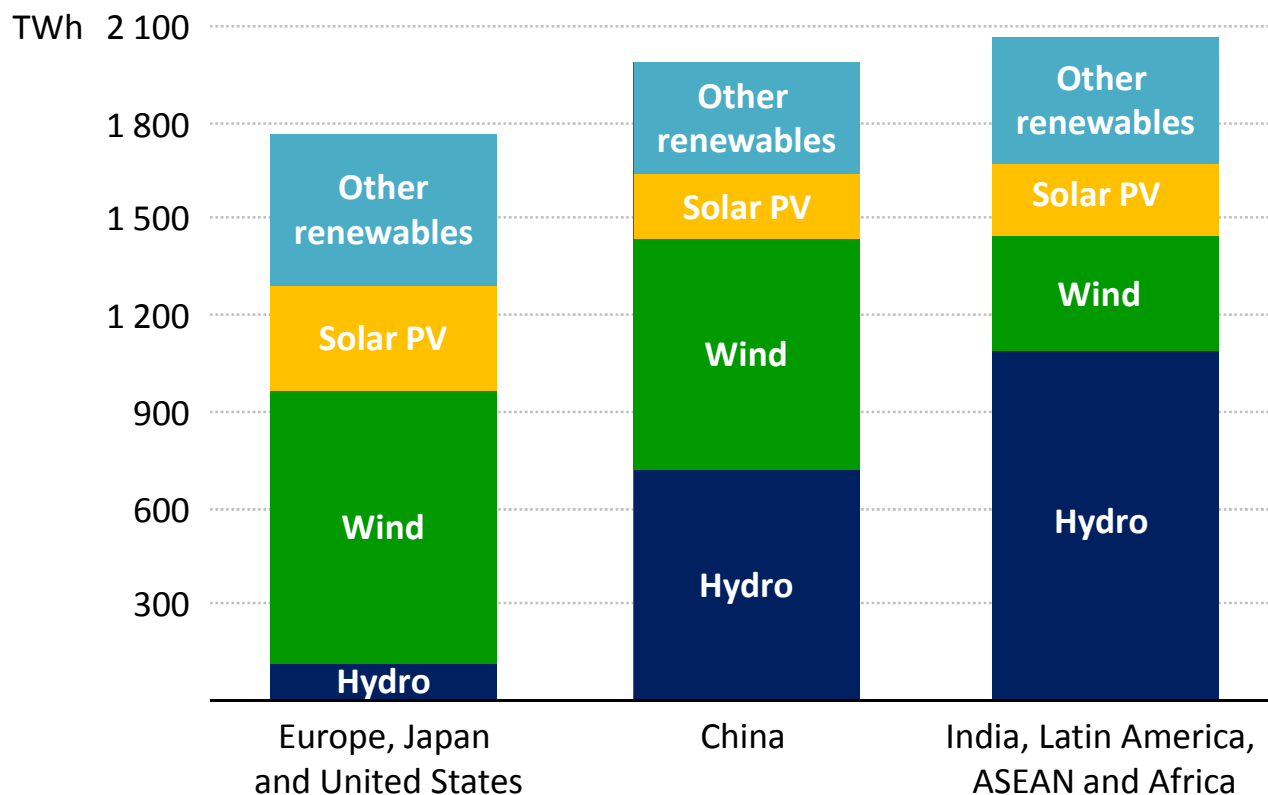
***Development of the EU's shale gas resources, while addressing social and environmental concerns, can slow Europe's rising dependence on natural gas imports***



# Renewables power up around the world

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## Growth in electricity generation from renewable sources, 2011-2035

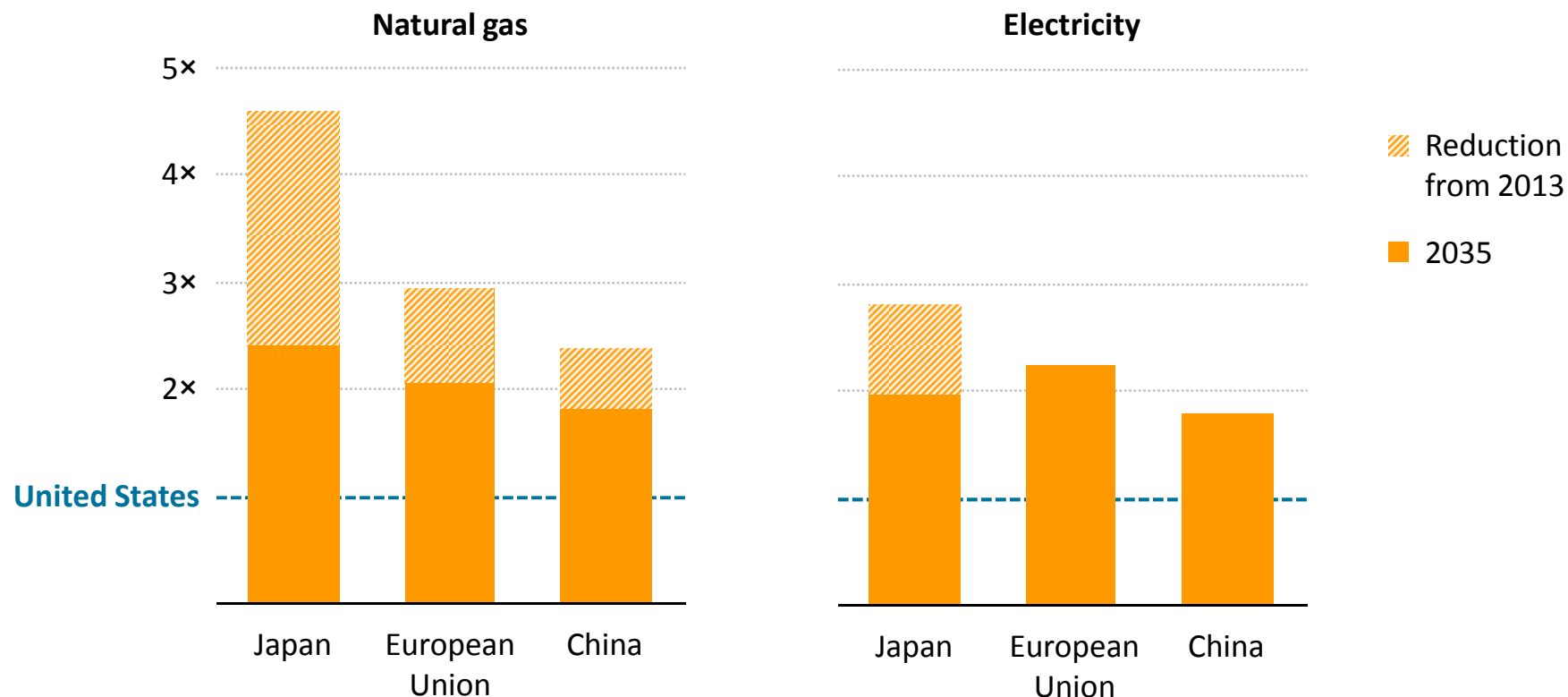


***The expansion of non-hydro renewables depends on subsidies that more than double to 2035; additions of wind & solar have implications for power market design & costs***

# Who has the energy to compete?

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## Ratio of industrial energy prices relative to the United States

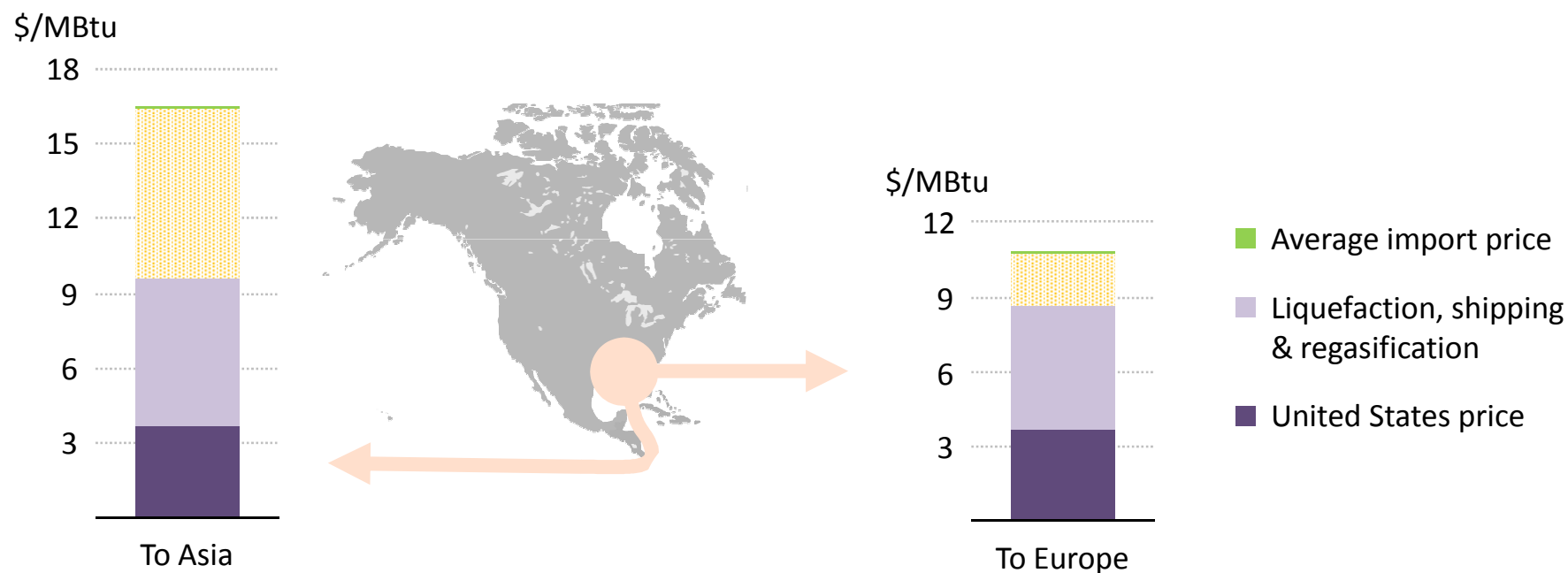


***Regional differences in natural gas prices narrow from today's very high levels but remain large through to 2035; electricity price differentials also persist***

# LNG from the United States can shake up gas markets

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## Indicative economics of LNG export from the US Gulf Coast (at current prices)



***New LNG supplies accelerate movement towards a more interconnected global market, but high costs of transport between regions mean no single global gas price***

# A new cast of major LNG suppliers

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***Over \$700 billion invested in LNG infrastructure helps to globalise gas markets, but the high cost of transporting gas dampens importers' hopes for much cheaper gas***

# Orientation for a fast-changing energy world

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- **China, then India, drive the growing dominance of Asia in global energy demand & trade**
- **Technology is opening up new oil resources, but the Middle East remains central to the longer-term outlook**
- **Regional price gaps & concerns over competitiveness are here to stay, but there are ways to react – with efficiency first in line**
- **The transition to a more efficient, low-carbon energy sector is more difficult in tough economic times, but no less urgent**



# World Energy Investment Outlook

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