

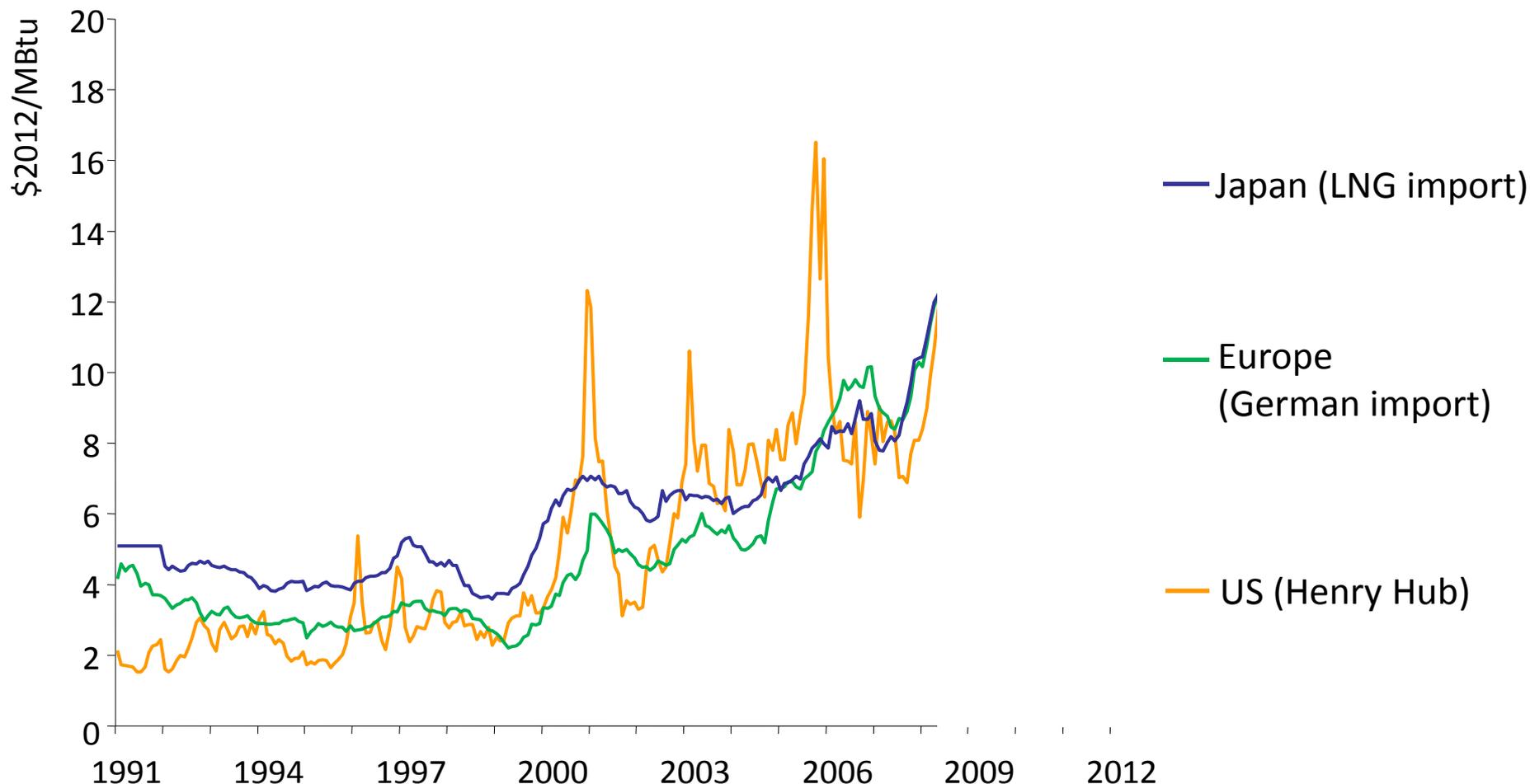
WORLD ENERGY OUTLOOK

An outlook for natural gas

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- **Foundations of global natural gas markets are shifting**
 - *Advances in technology have led to a surge in unconventional gas supply in North America*
- **Many countries are lining up to emulate North America's success, but concerns over environmental & social implications**
- **Strong divergence in regional gas market conditions & prices means pressure on traditional oil-linked pricing mechanisms**
- **Focus for natural gas trade switching away from the Atlantic basin towards the Asia-Pacific region**

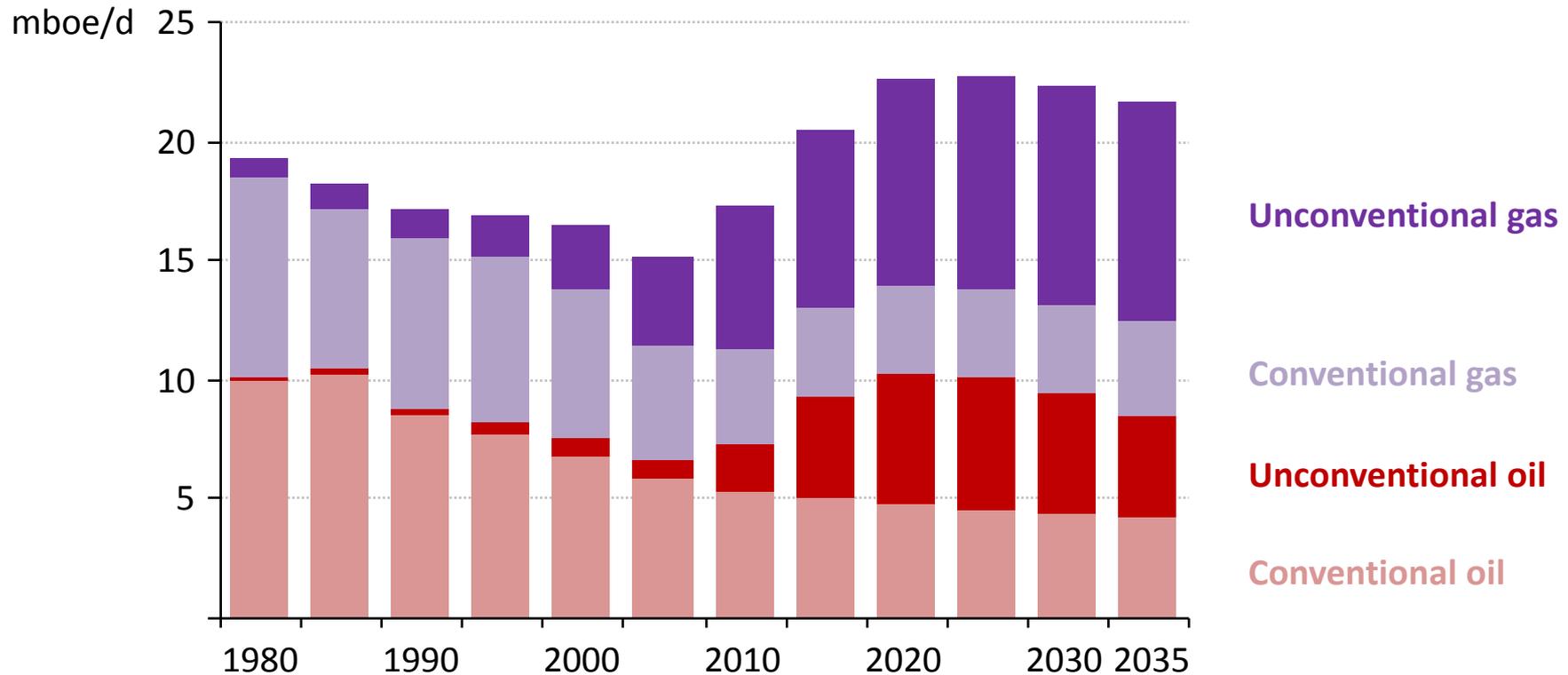
De-coupling of regional gas prices



At its lowest level in 2012, natural gas in the United States traded at around one-fifth of import prices in Europe & one-eighth of those in Japan

A United States oil & gas transformation

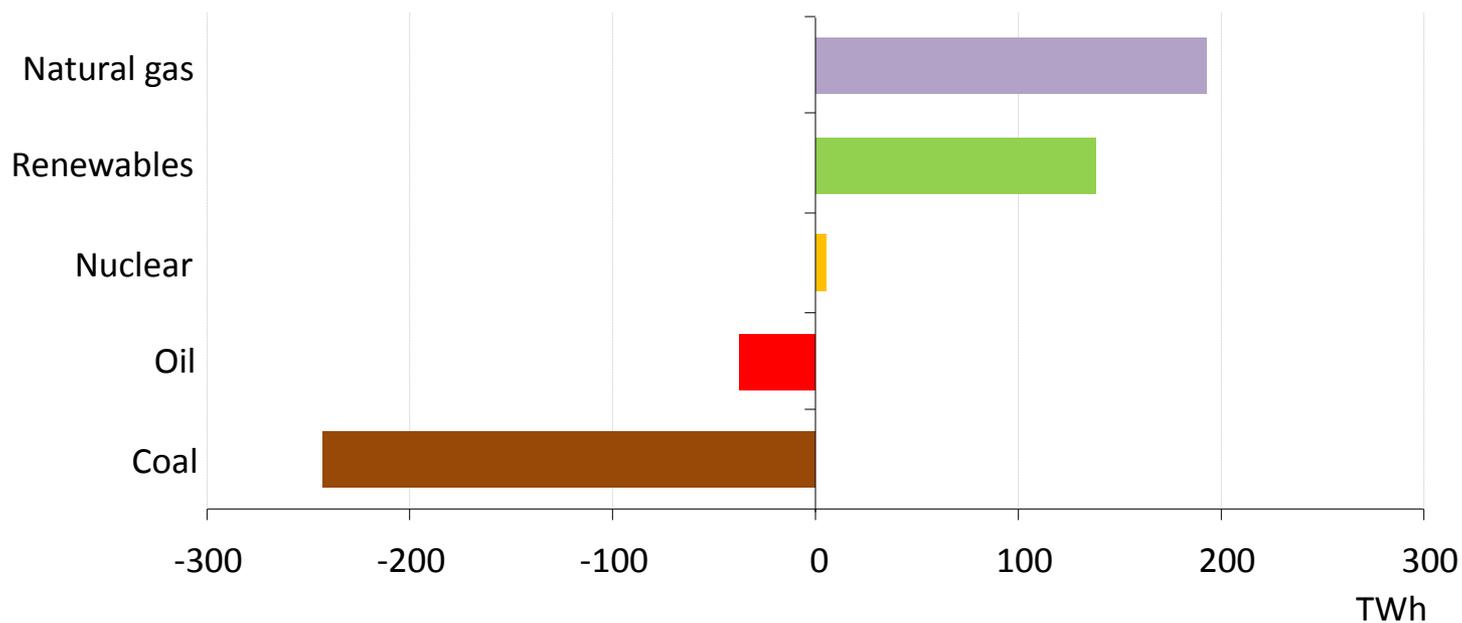
US oil & gas production



The surge in unconventional oil & gas production has implications well beyond the United States

A changing United States power mix

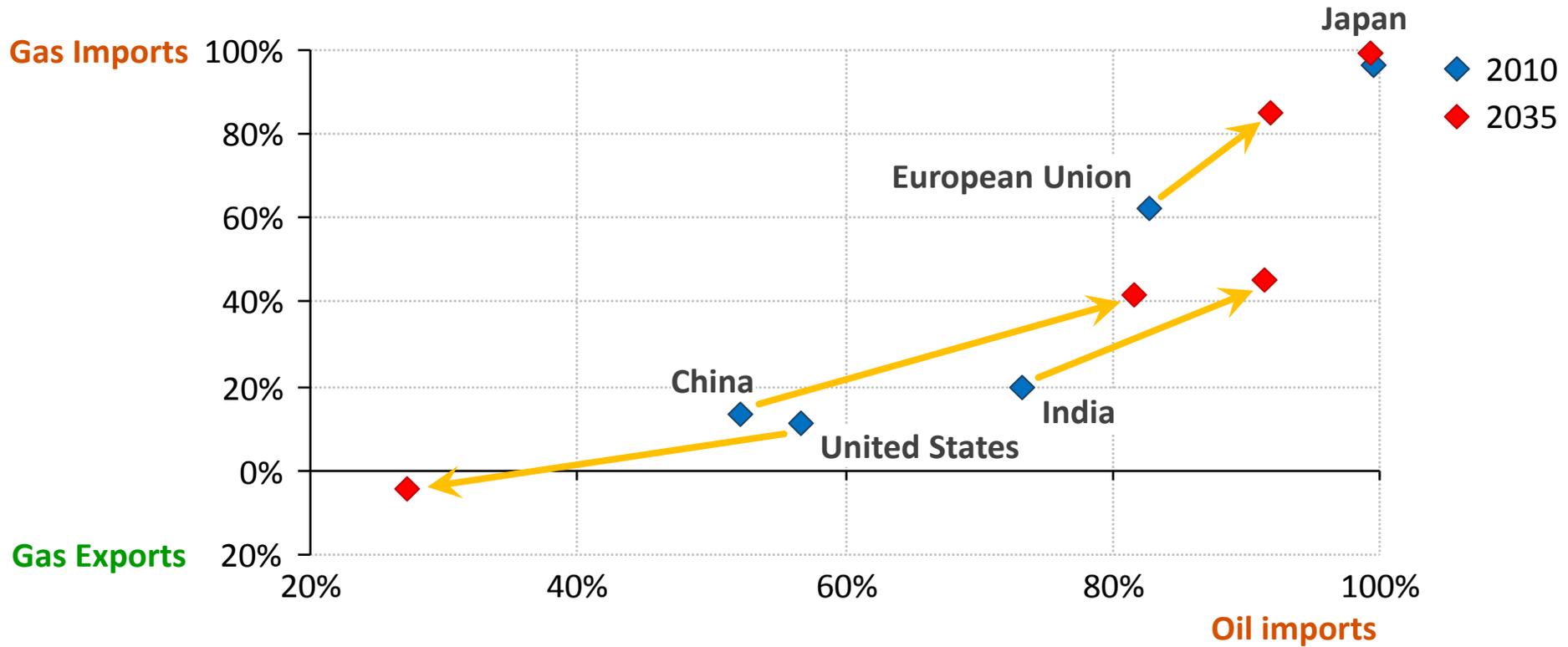
US electricity generation growth, 2006-2011



Over the past 5 years, natural gas & renewables were the main sources of growth in electricity generation in the United States, with implications for GHG emissions

Different trends in oil & gas import dependency

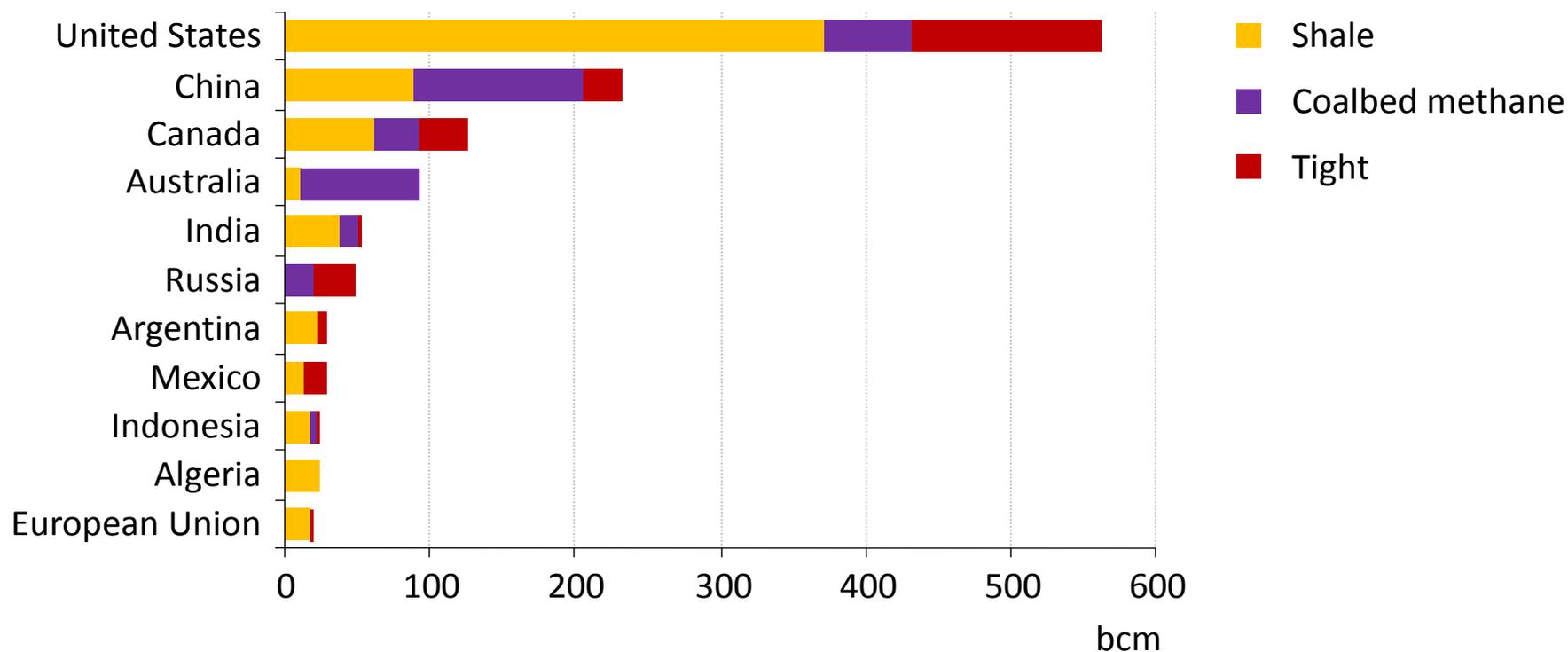
Net oil & gas import dependency in selected countries



Dependence on imported oil and gas rises in many countries, though the US swims against the tide

The (gradual) spread of the unconventional revolution

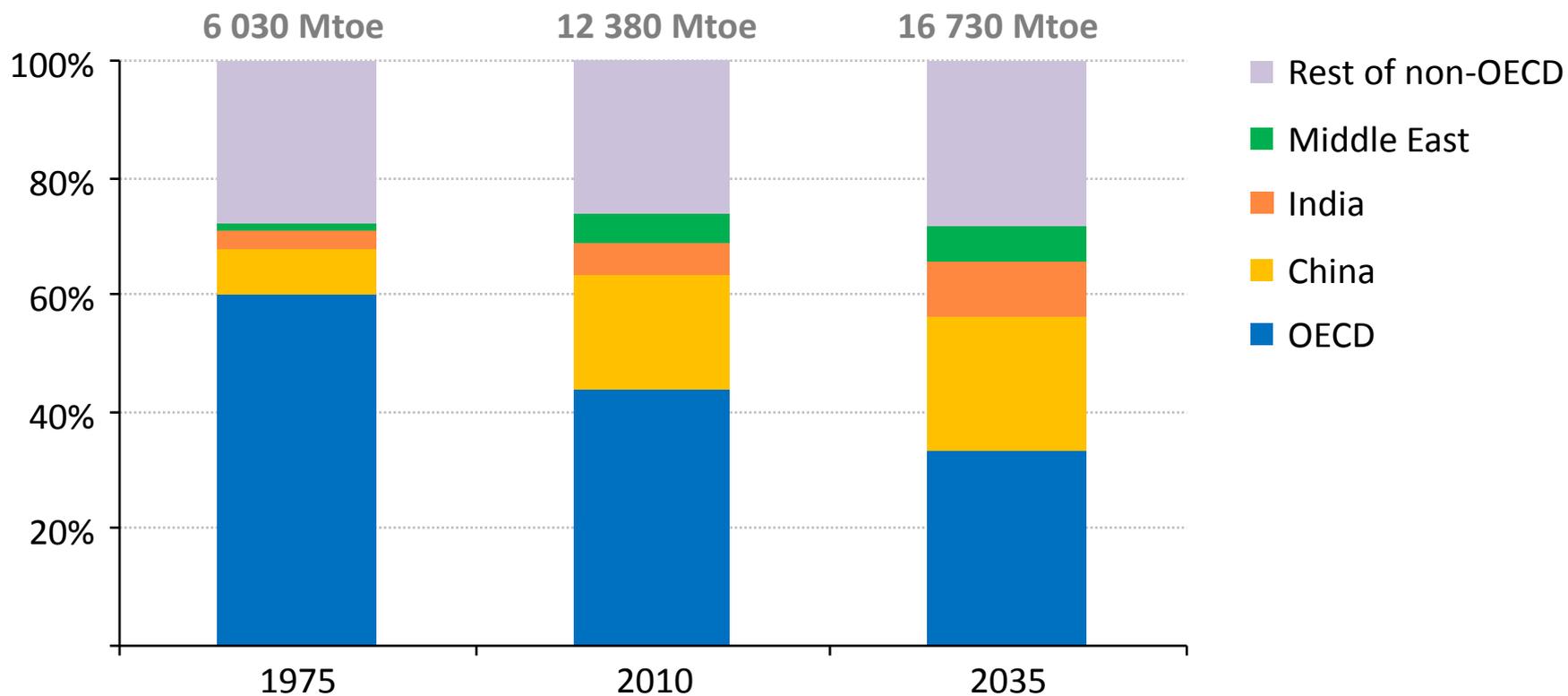
Unconventional gas production, 2035



Outside Canada & the United States, 80% of anticipated growth in unconventional gas production takes place after 2020

Looking to the future, emerging economies will drive energy demand growth

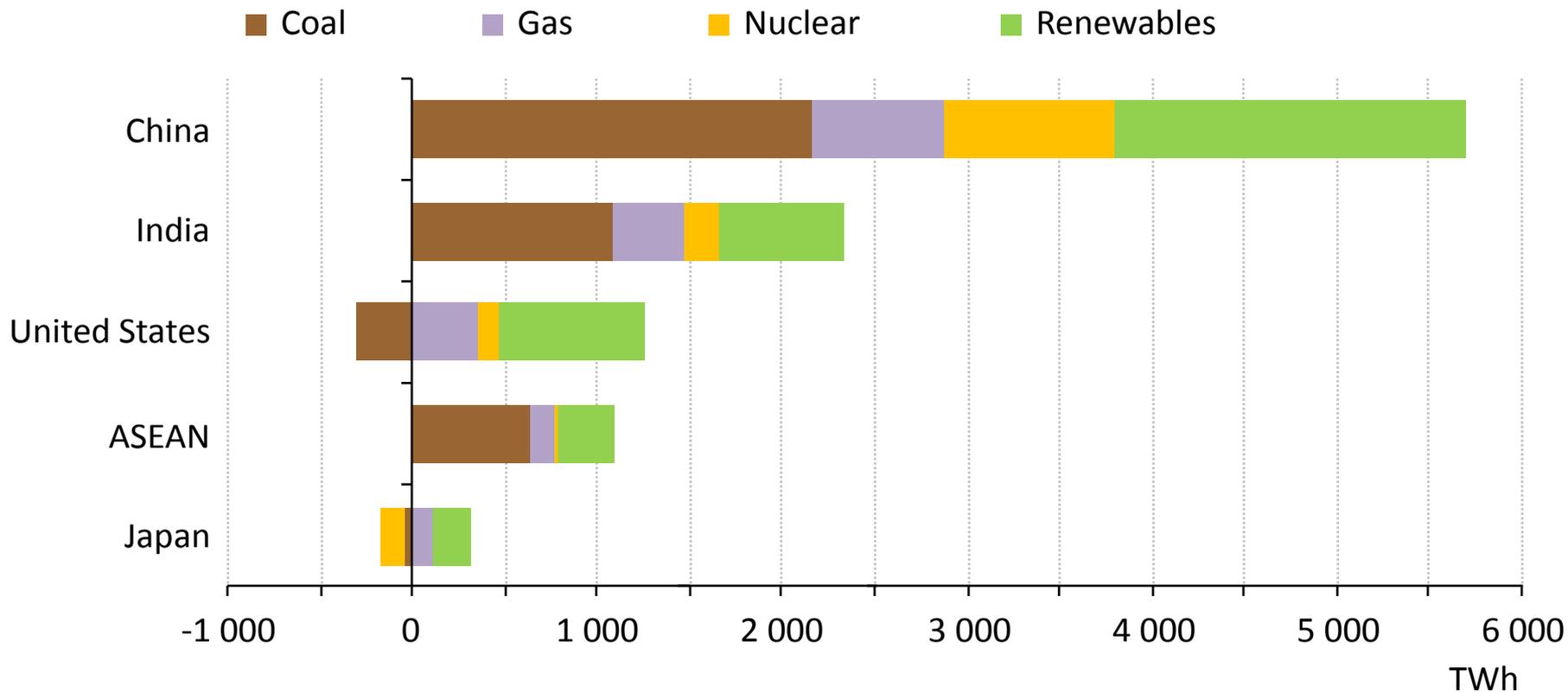
Share of global energy demand



Global energy demand rises by over one-third in the period to 2035, underpinned by rising living standards in China, India & the Middle East

A power shift to emerging economies

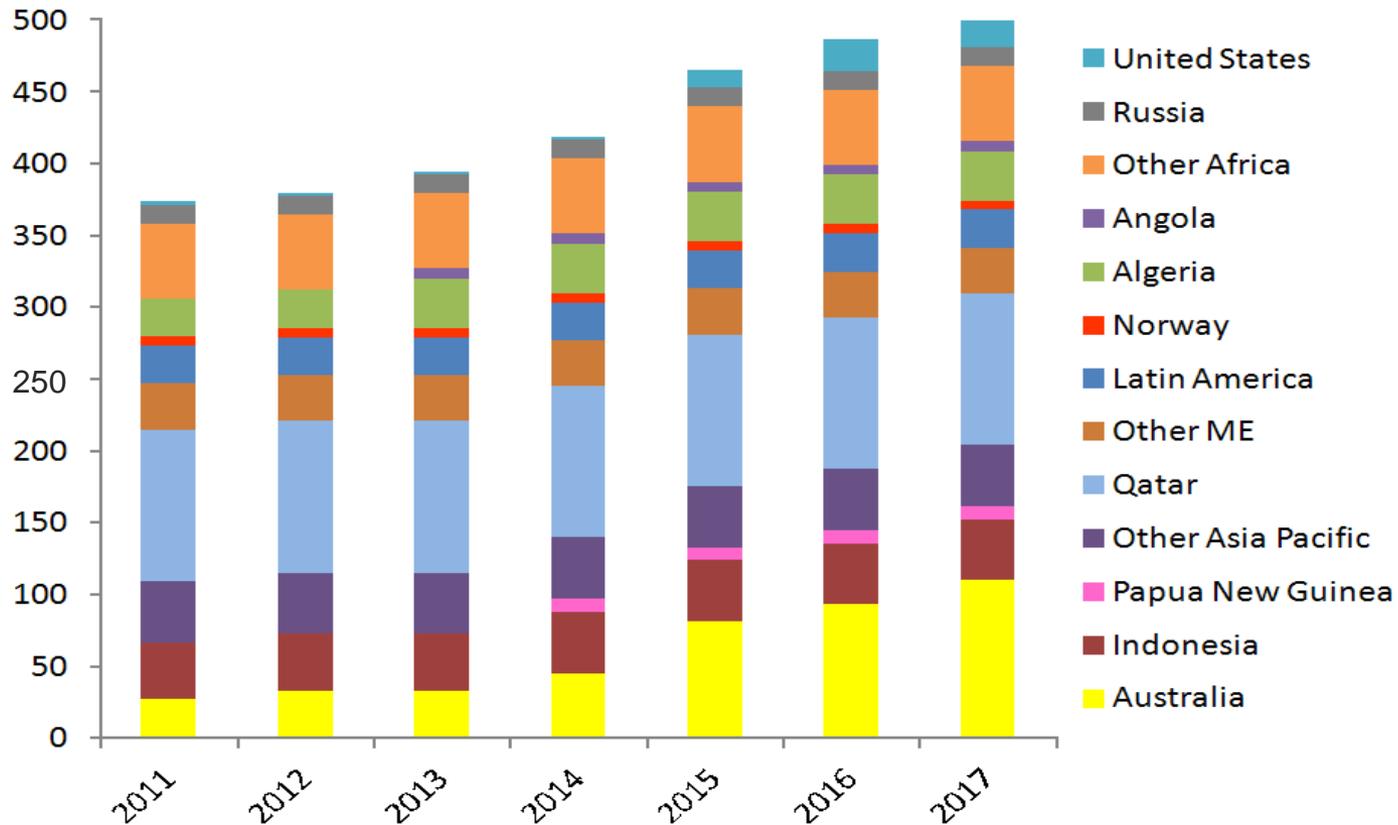
Change in power generation, 2010-2035



The need for electricity in emerging economies drives a 70% increase in worldwide demand, with renewables accounting for half of new global capacity

A new expansion of LNG on the horizon

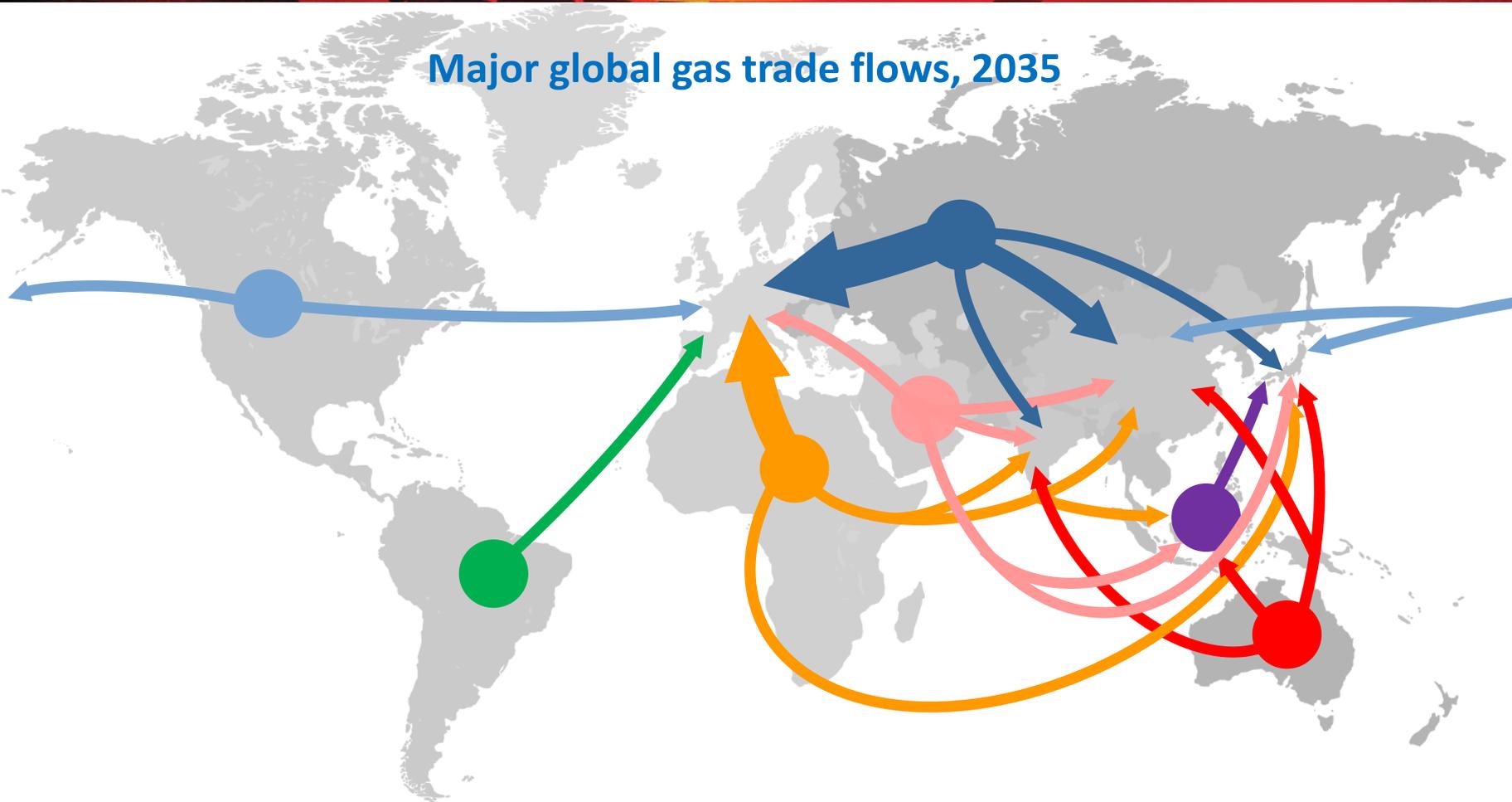
Growth in global liquefaction capacity to 2017



Australia provides the lion's share of new LNG capacity over the medium term, but other exporters, including the United States, also start to emerge

The shifting balance of supply & demand points to a more globalised market

Major global gas trade flows, 2035



Rising supplies of unconventional gas & LNG help to diversify trade flows, putting pressure on conventional gas suppliers & oil-linked pricing mechanisms

- **Factors on both the supply & demand side pushing gas towards a higher share in the global energy mix**
- **Changing patterns of gas production & use have profound implications for global gas trade, with new connections between regional markets**
- **Natural gas has a role to play in moving us towards a low-carbon energy economy**
- **Improperly addressed, social & environmental concerns could hold back the unconventional gas revolution**
- **The Asia-Pacific region is set to accelerate the growth of natural gas trade & foster the move towards globalisation of gas markets**