

WORLD ENERGY OUTLOOK

Tim Gould
International Energy Agency
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■ Foundations of global energy system shifting

- *Resurgence in oil & gas production in some countries*
- *Retreat from nuclear in some others*
- *Signs of increasing policy focus on energy efficiency*

■ All-time high oil prices acting as brake on global economy

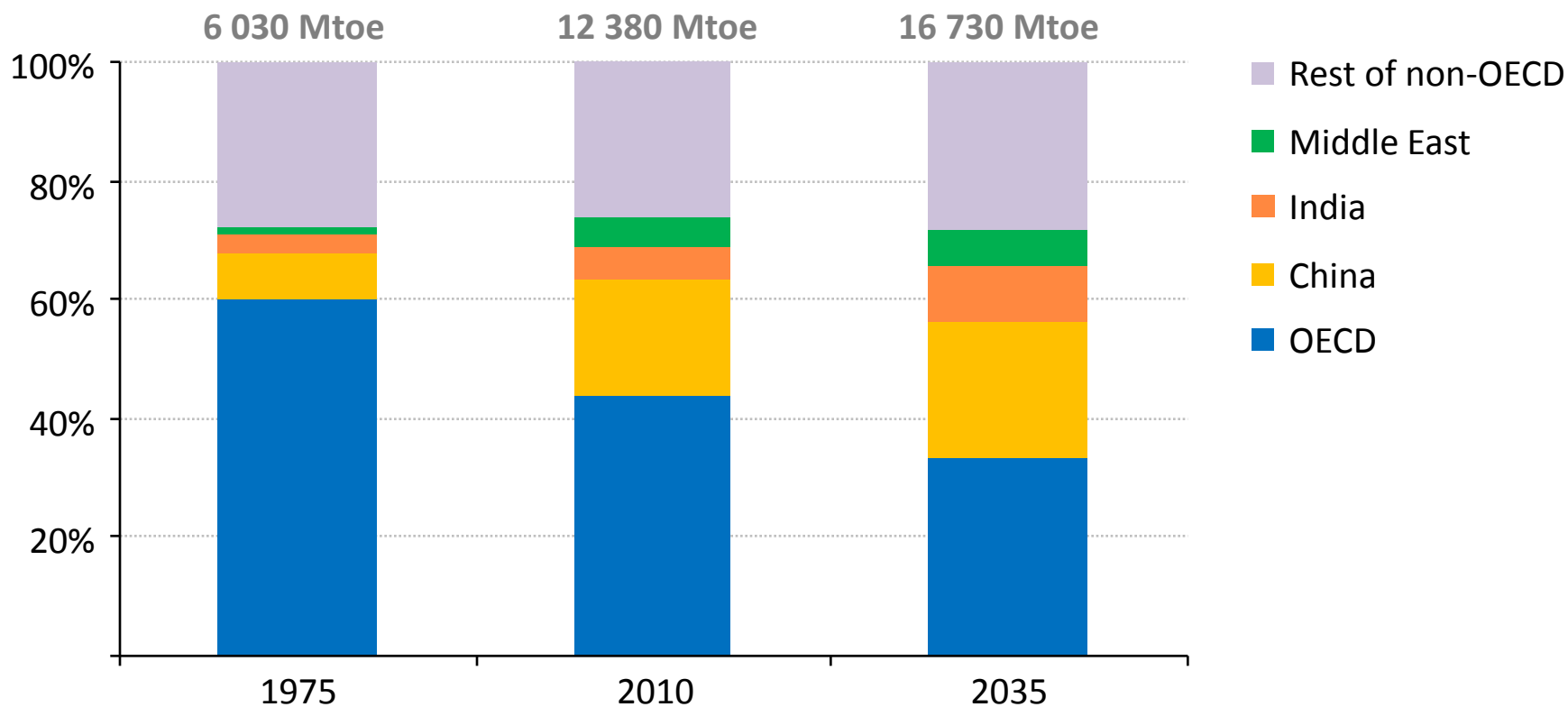
- *Divergence in natural gas prices affecting Europe (with prices 5-times US levels) and Asia (8-times)*

■ Symptoms of an unsustainable energy system persist

- *Fossil fuel subsidies up almost 30% to \$523 billion in 2011, led by MENA*
- *CO₂ emissions at record high, while renewables industry under strain*
- *Despite new international efforts, 1.3 billion people still lack electricity*

Emerging economies steer energy markets

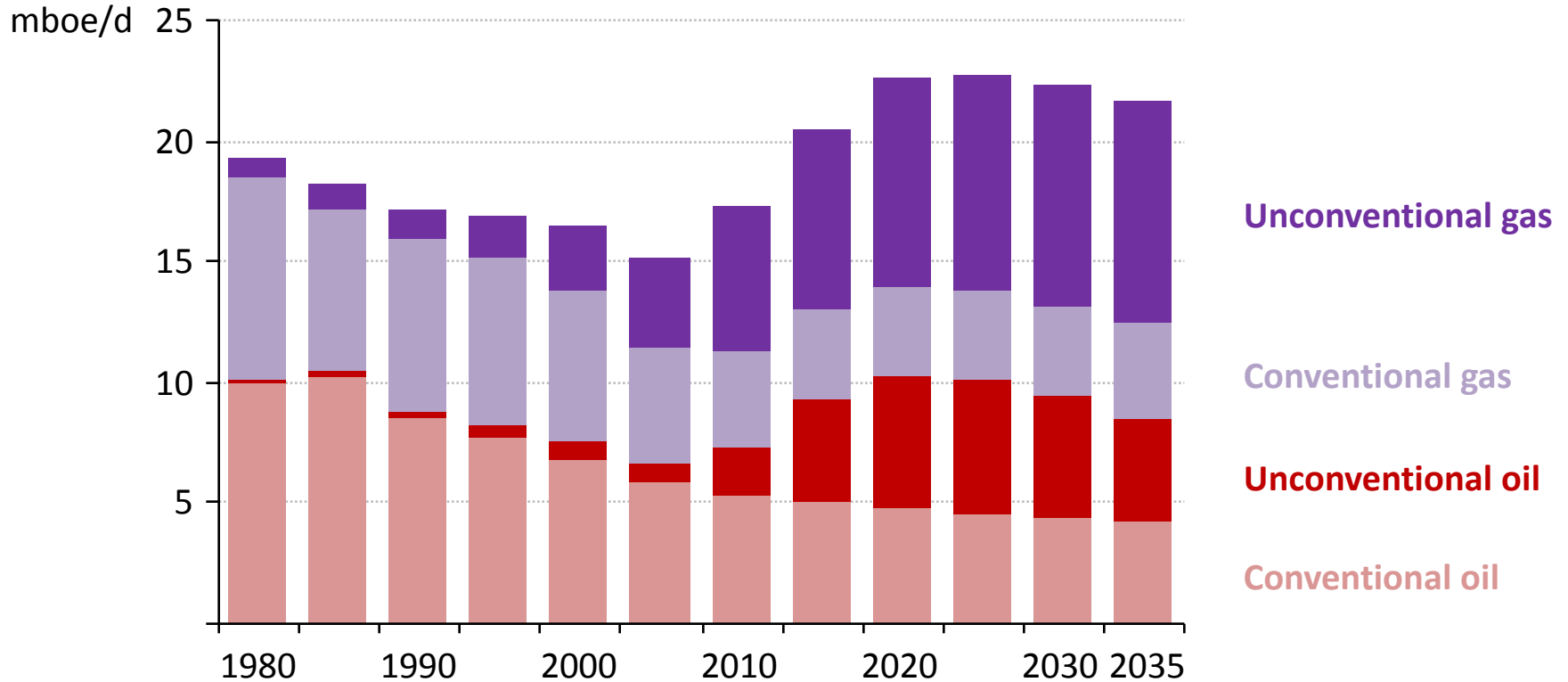
Share of global energy demand



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 United States oil & gas transformation

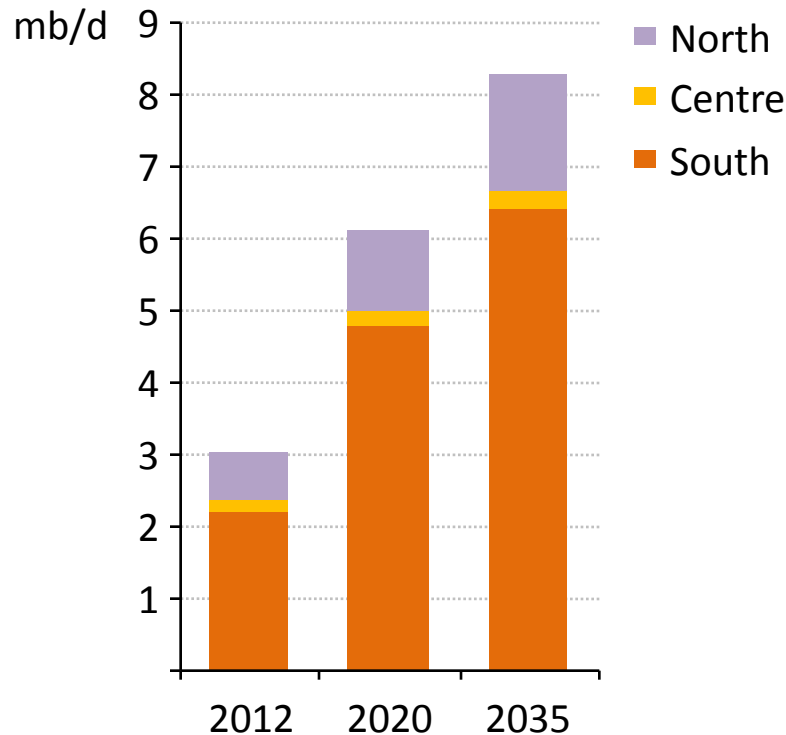
US oil and gas production



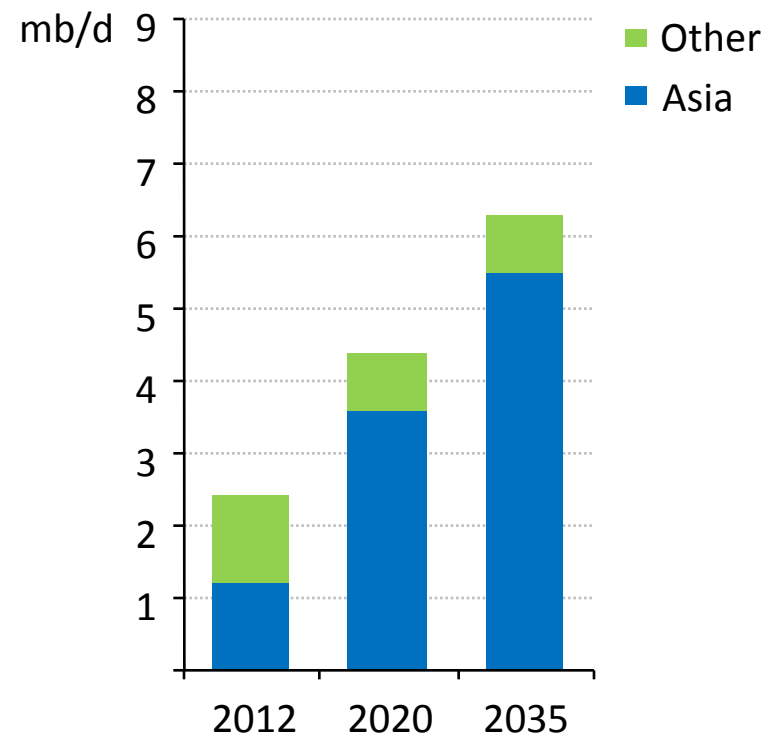
The surge in unconventional oil & gas production has implications well beyond the United States

Iraq oil poised for a major expansion

Iraq oil production



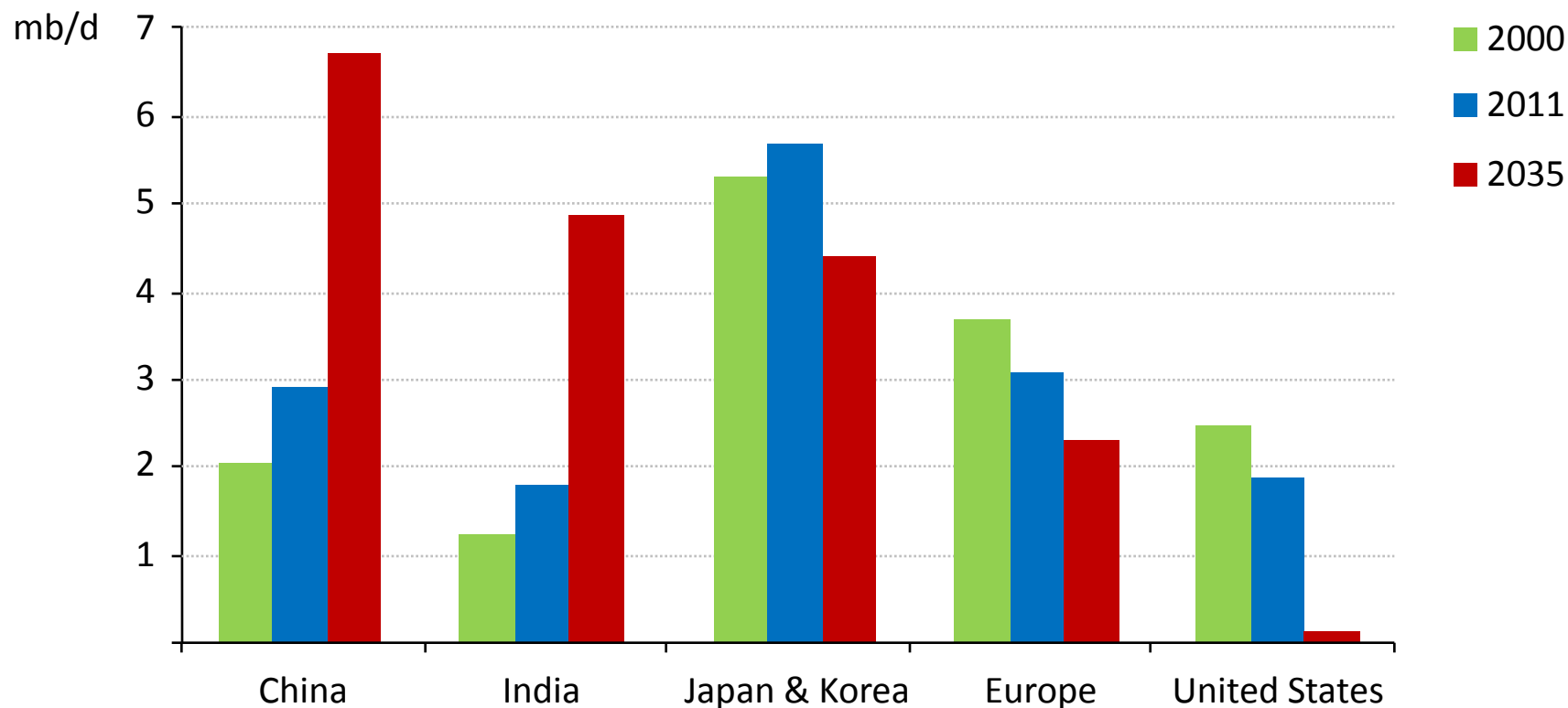
Iraq oil exports



Iraq accounts for 45% of the growth in global production to 2035; by the 2030s it becomes the second-largest global oil exporter, overtaking Russia

Middle East oil to Asia: a new silk road

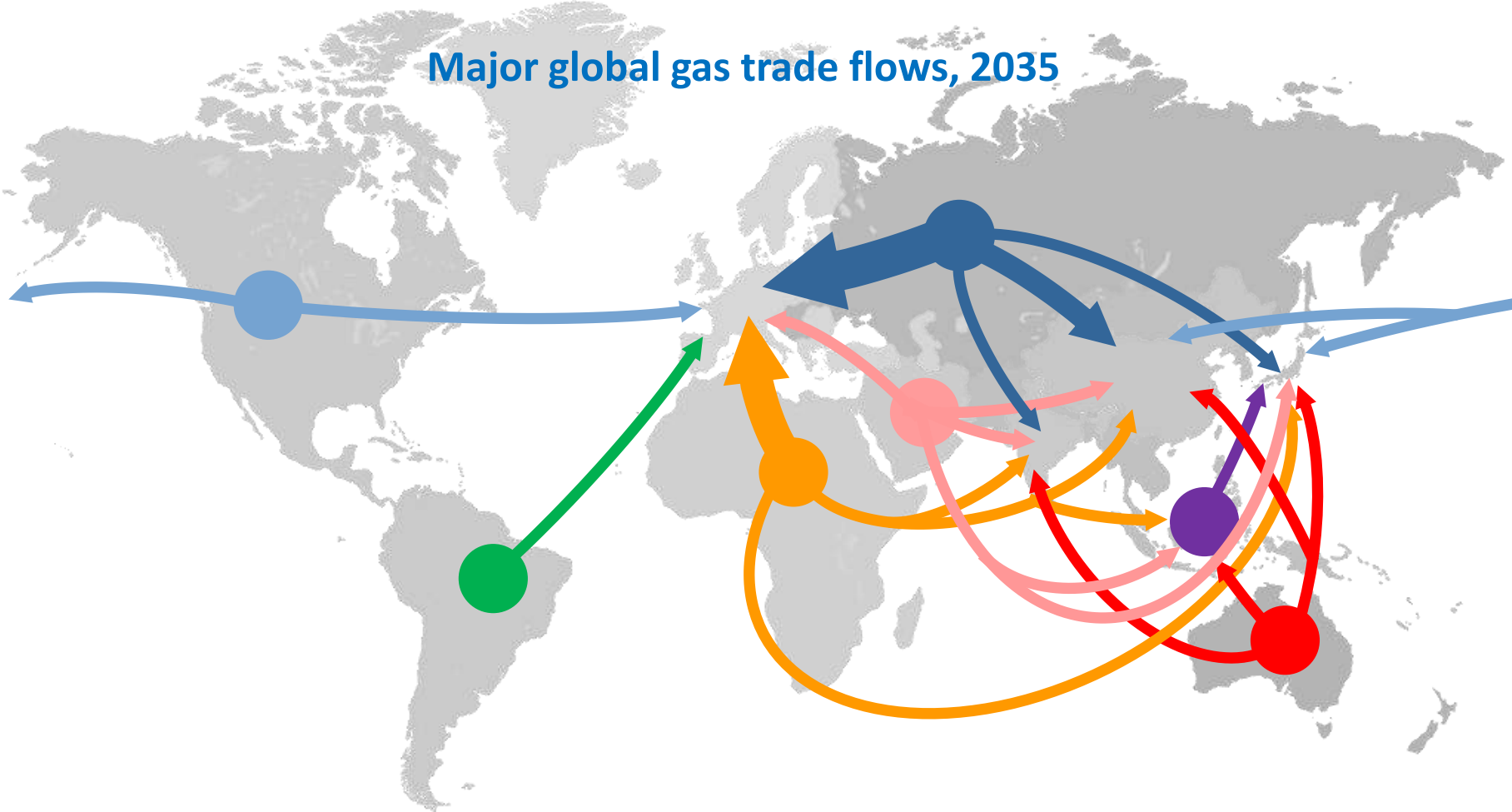
Middle East oil export by destination



By 2035, almost 90% of Middle Eastern oil exports go to Asia; North America's emergence as a net exporter accelerates the eastward shift in trade

Natural gas: towards a globalised market

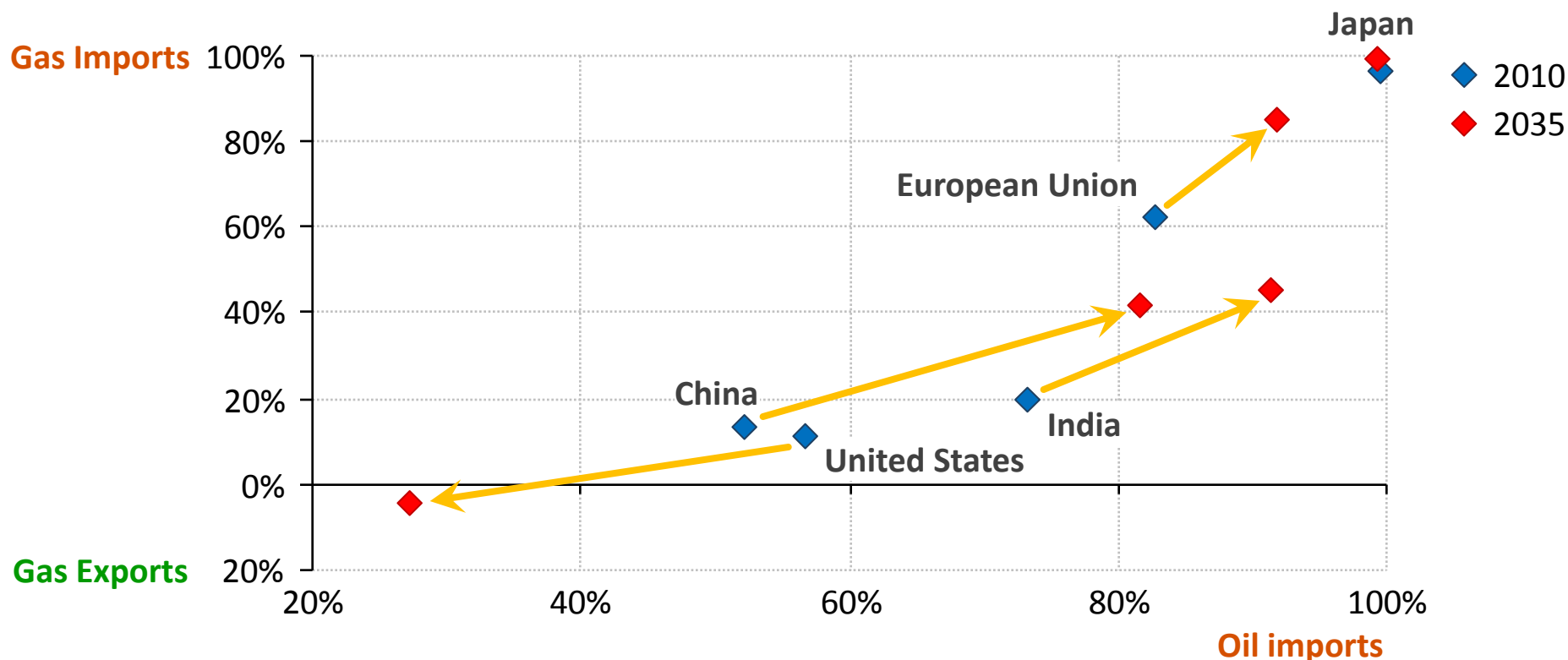
Major global gas trade flows, 2035



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

Different trends in oil & gas import dependency

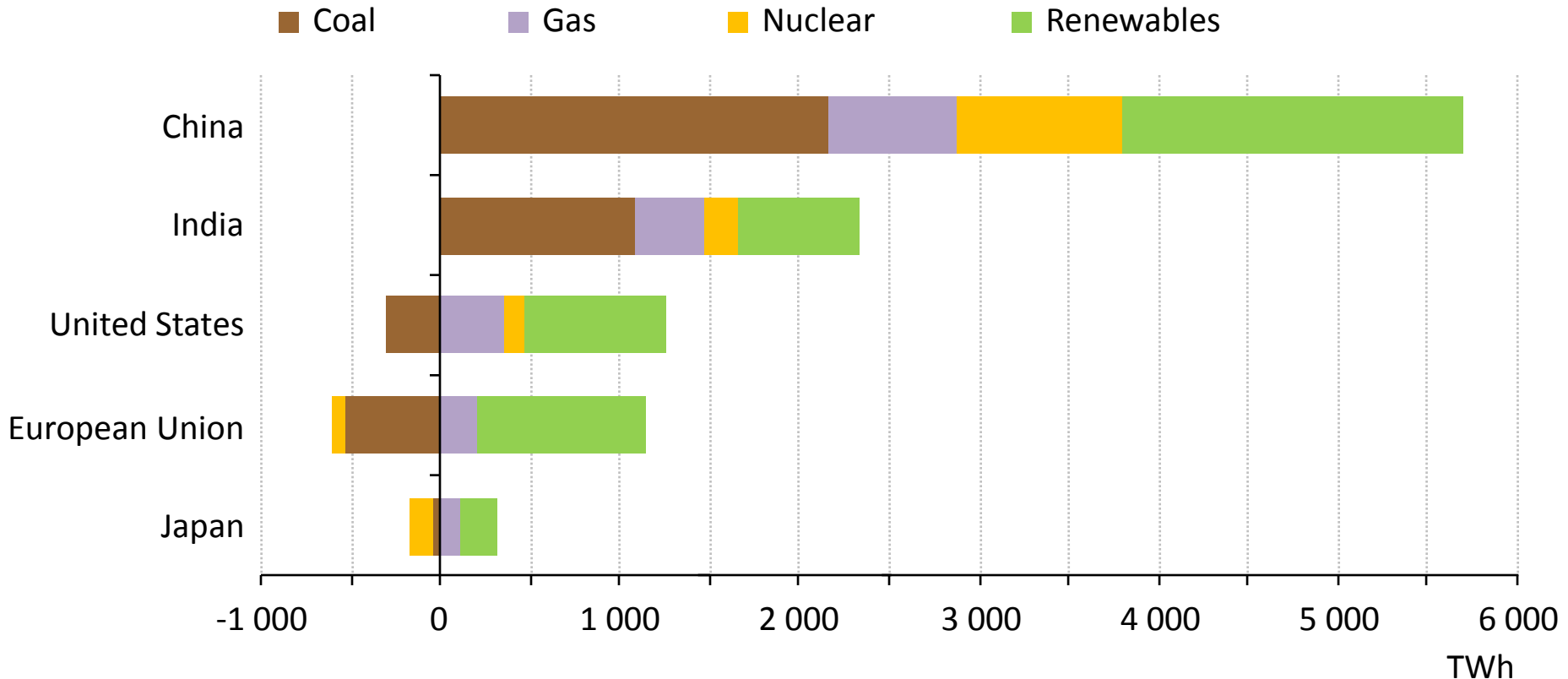
Net oil & gas import dependency in selected countries



While dependence on imported oil & gas rises in many countries, the United States swims against the tide

A power shift to emerging economies

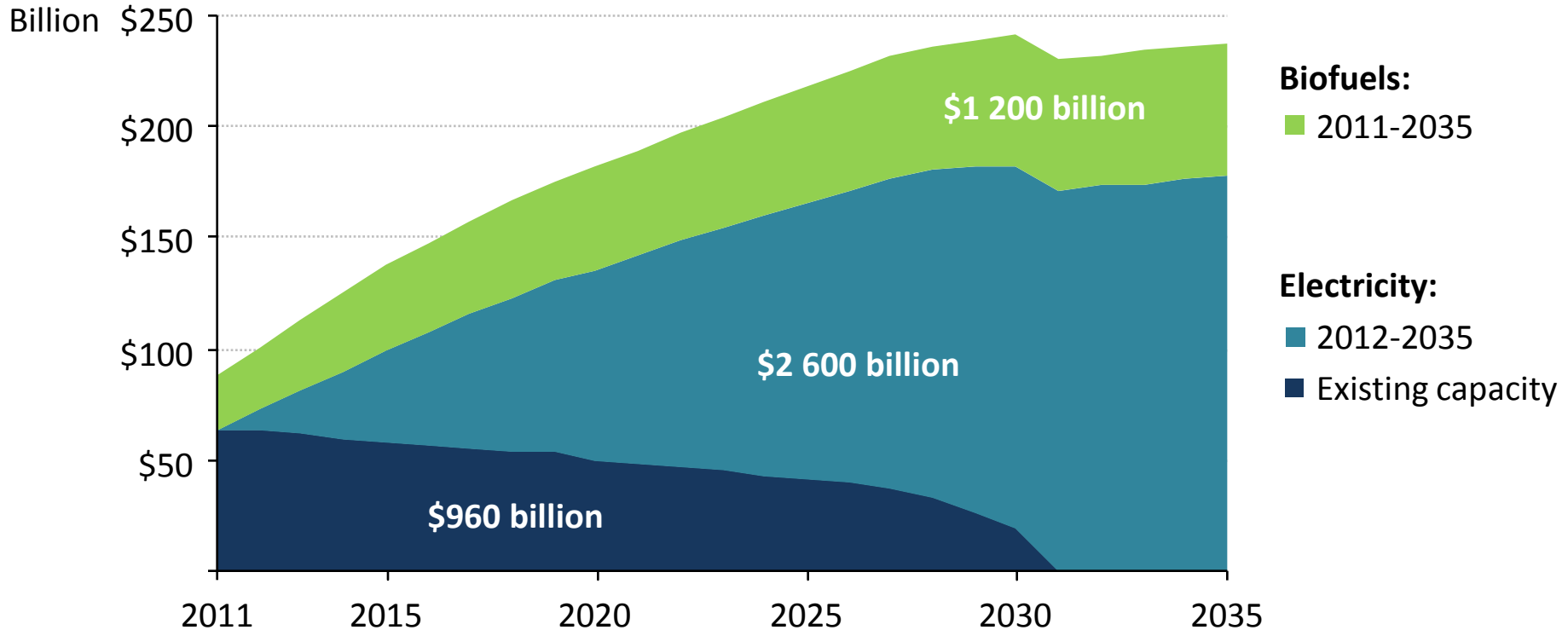
Change in power generation, 2010-2035



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

The multiple benefits of renewables come at a cost

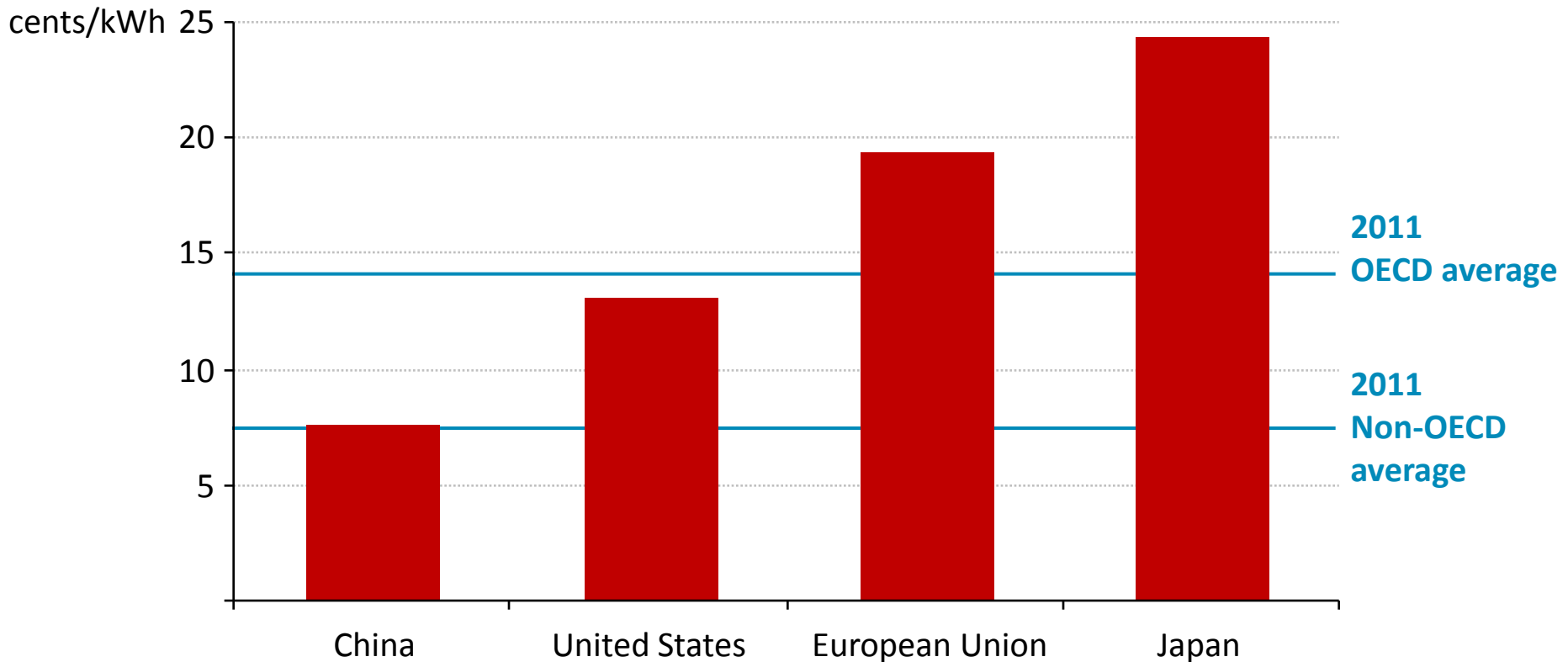
Global renewable energy subsidies



Renewable subsidies were \$88 billion in 2011; over half the \$4.8 trillion required to 2035 has been committed to existing projects or is needed to meet 2020 targets

Wide variations in the price of power

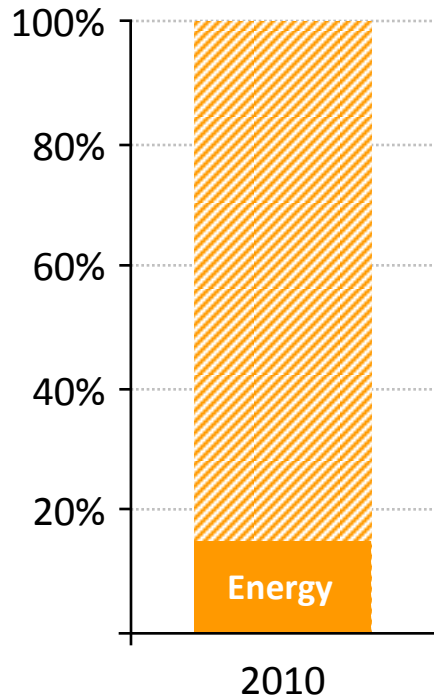
Average household electricity prices, 2035



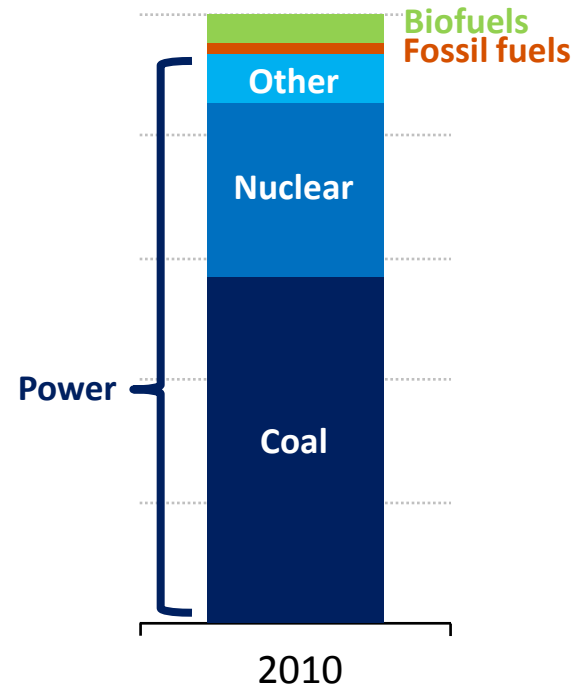
Electricity prices are set to increase with the highest prices persisting in the European Union & Japan, well above those in China & the United States

Energy is becoming thirstier in the face of growing water constraints

Global water use



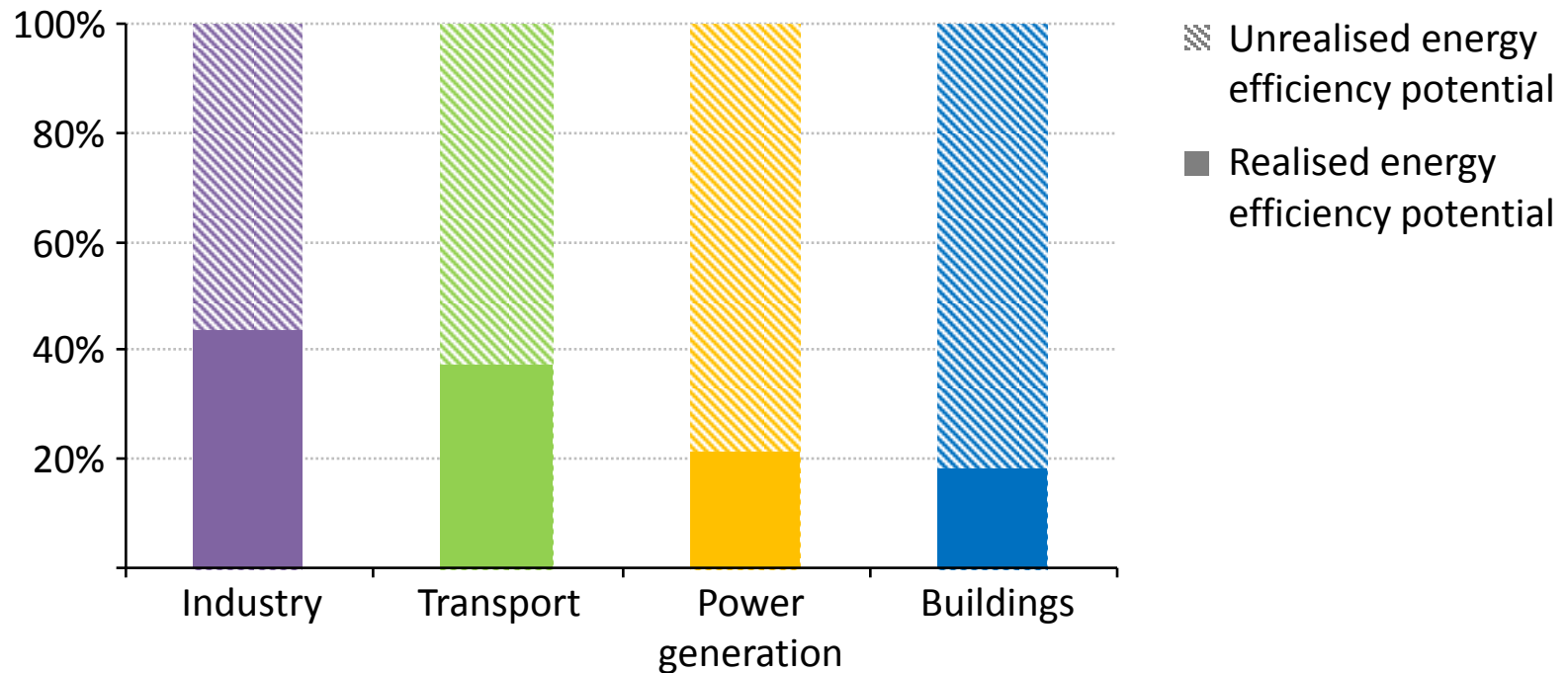
Water for energy



The energy sector's water needs are set to grow, making water an increasingly important criterion for assessing the viability of energy projects

Energy efficiency: a huge opportunity going unrealised

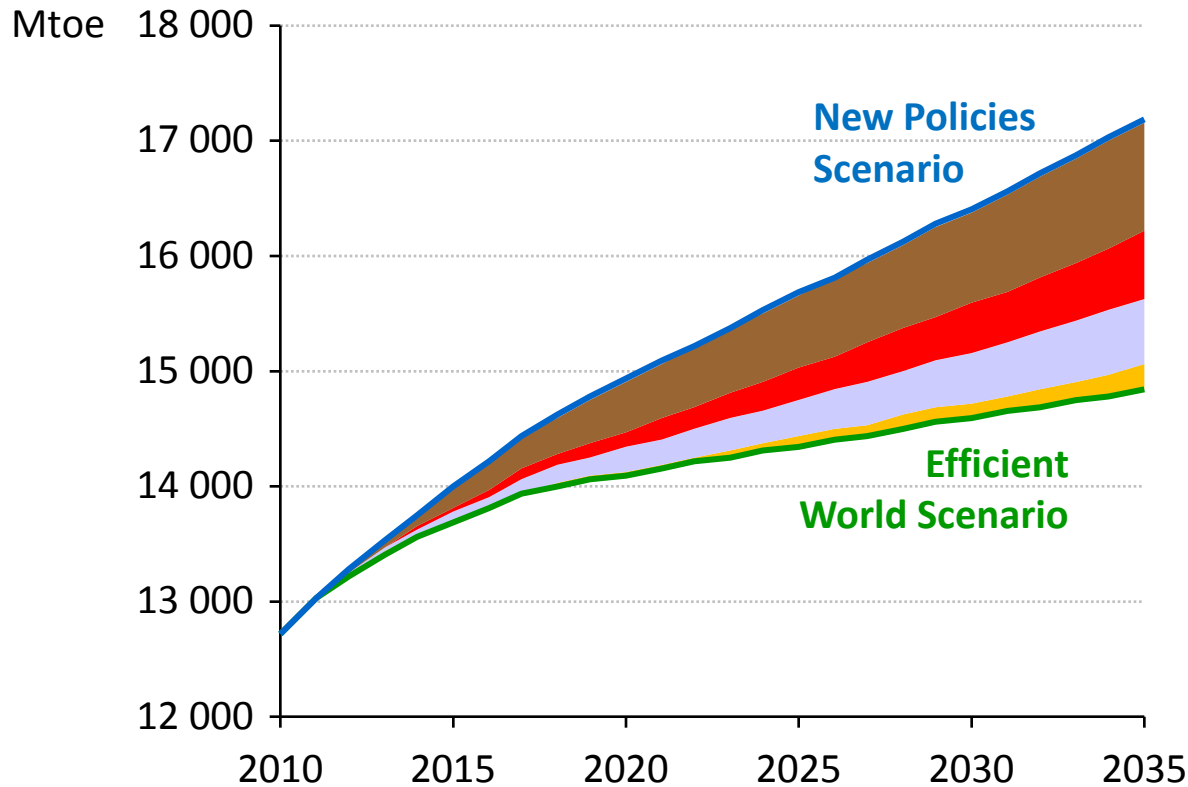
Energy efficiency potential used by sector in the New Policies Scenario



Two-thirds of the economic potential to improve energy efficiency remains untapped in the period to 2035

The Efficient World Scenario: a blueprint for an efficient world

Total primary energy demand



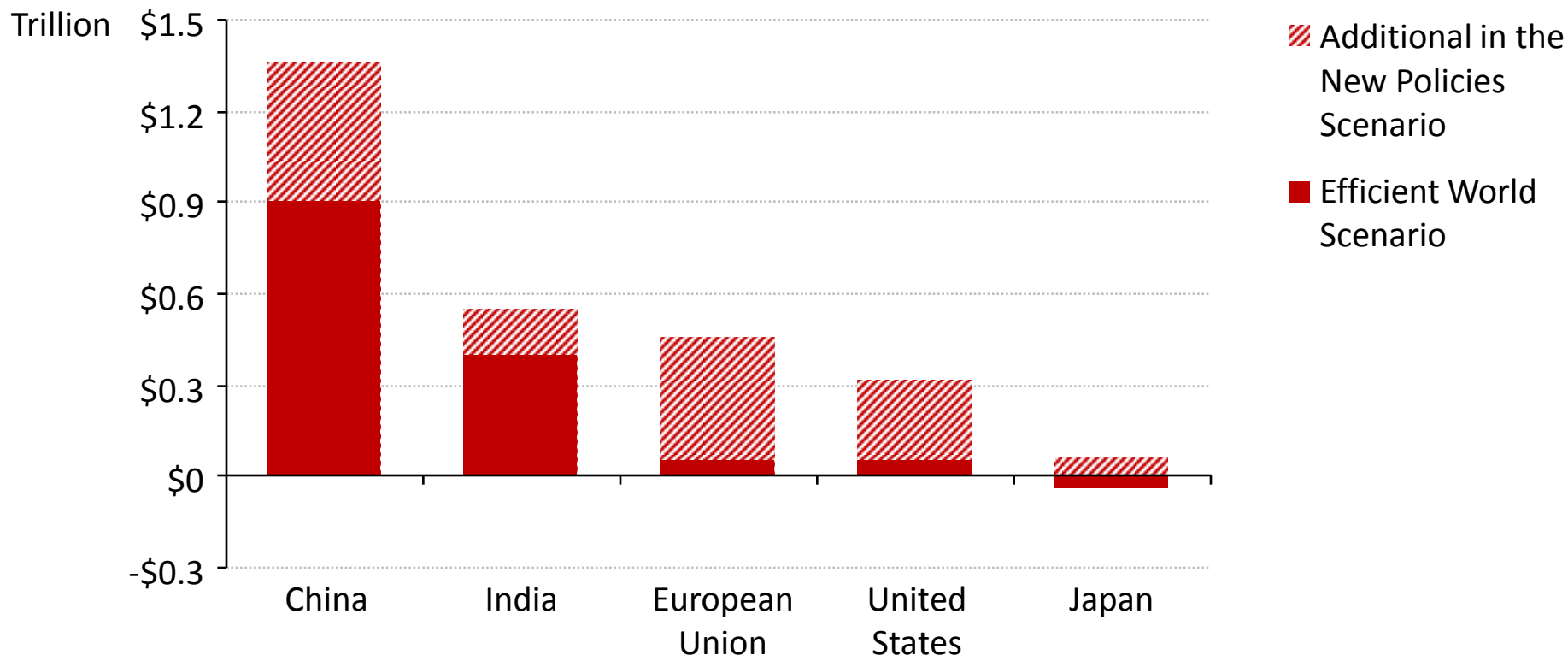
Reduction in 2035

Coal	1 350 Mtce
Oil	12.7 mb/d
Gas	680 bcm
Others	250 Mtoe

***Economically viable efficiency measures can halve energy demand growth to 2035;
oil demand savings equal the current production of Russia & Norway***

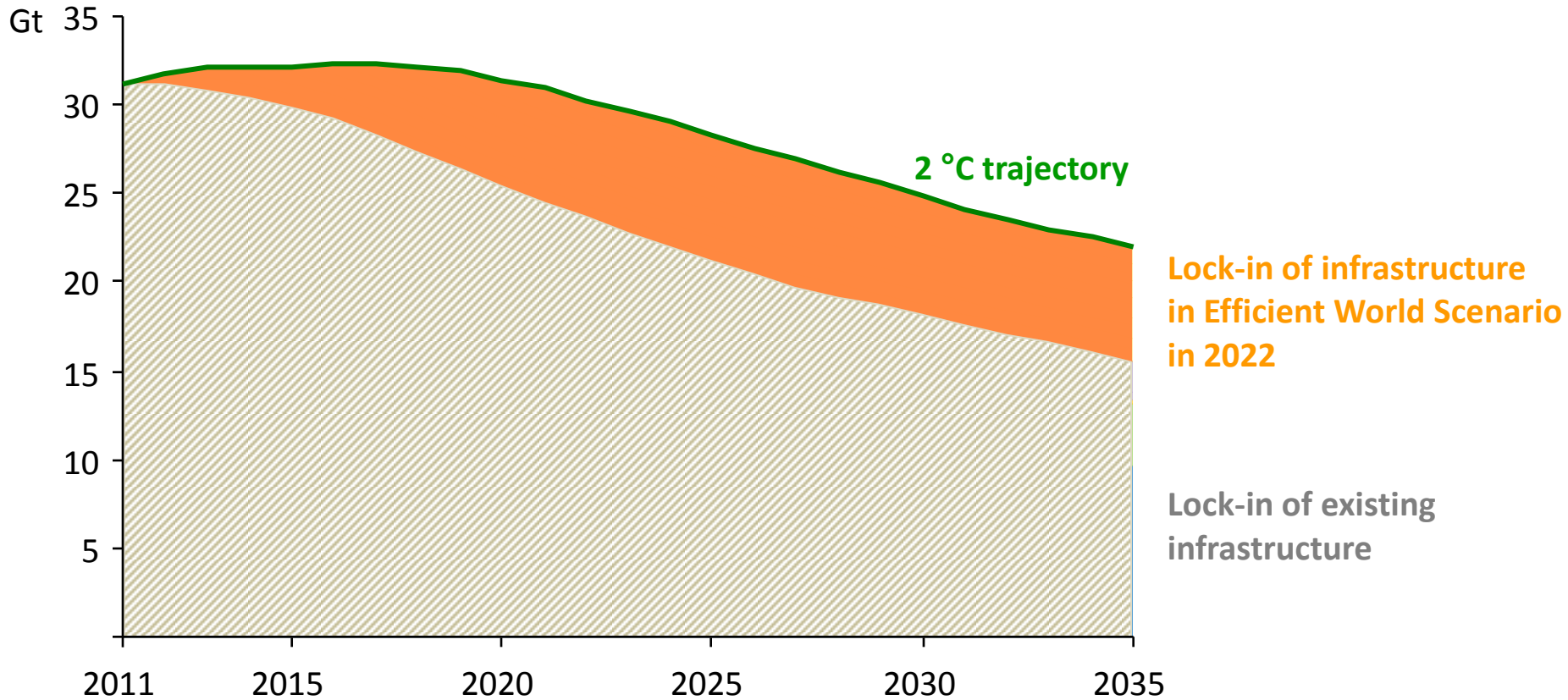
Energy efficiency brings economic gains

Energy expenditure in 2035 compared with 2010



In addition to cutting energy expenditures by an average of 20%, improved efficiency brings wider economic gains, particularly for India, China, the United States & Europe

The Efficient World Scenario delays carbon lock-in



Energy efficiency can delay “lock-in” of CO₂ emissions permitted under a 2 °C trajectory – which is set to happen in 2017 – until 2022, buying five extra years

Foundations of energy system shifting

- Policy makers face critical choices in reconciling energy, environmental & economic objectives
- Changing outlook for energy production & use may redefine global economic & geopolitical balances
- Iraq set to play a pivotal role in global oil markets
- As climate change slips off policy radar, the “lock-in” point moves closer & the costs of inaction rise
- The gains promised by energy efficiency are within reach & are essential to underpin a more secure & sustainable energy system