

WORLD ENERGY OUTLOOK 2012

World Energy Outlook 2012

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Paris, 29 November 2012

■ 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)*

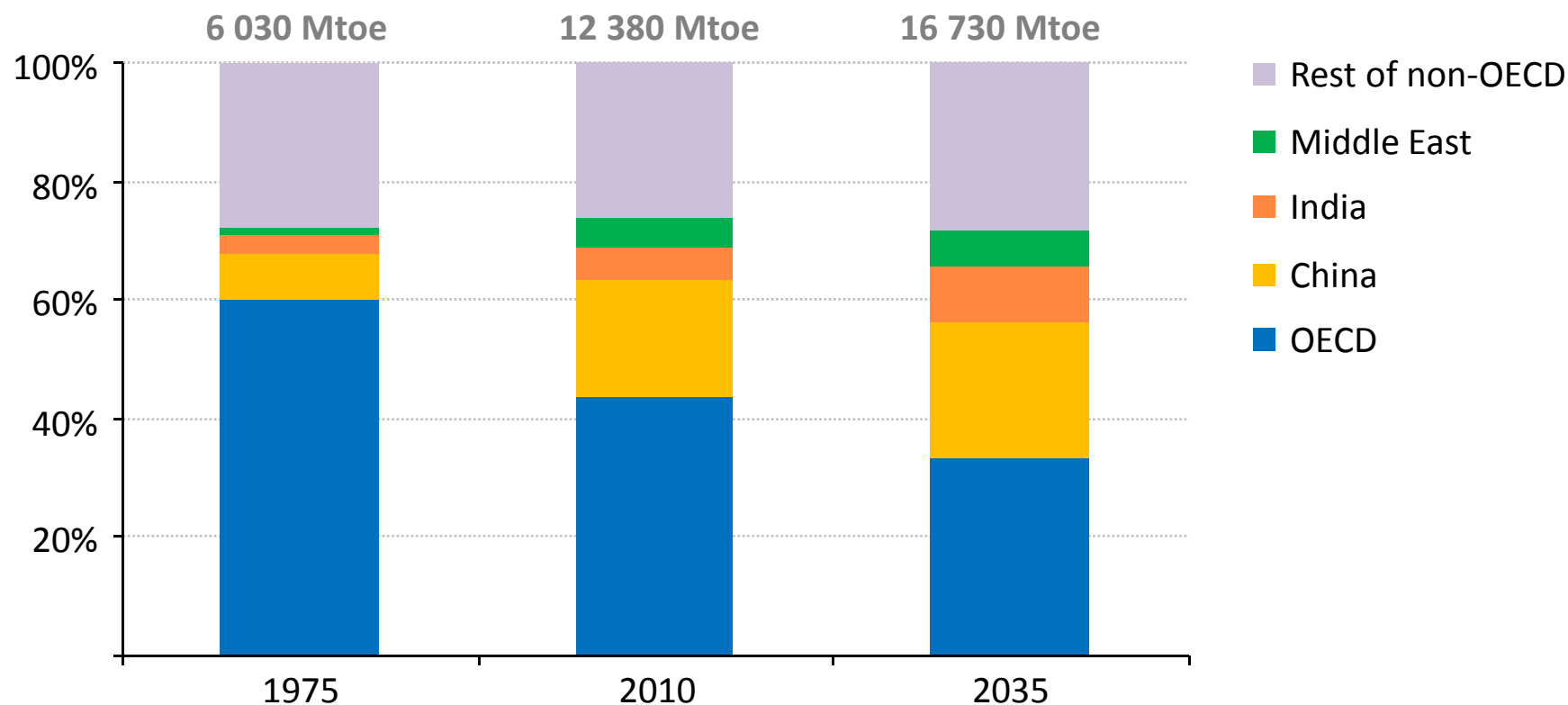
■ Symptoms of an unsustainable energy system persist

- *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

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Share of global energy demand

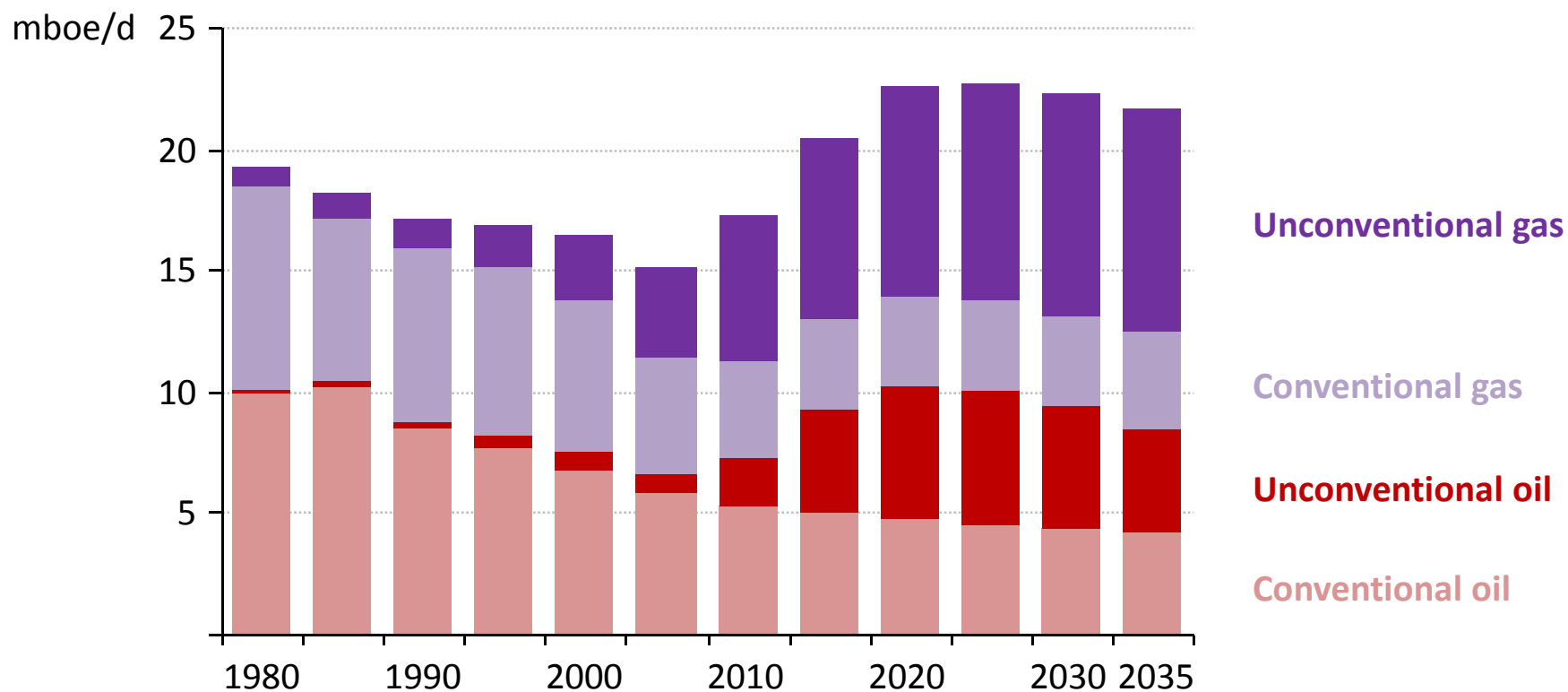


Global energy demand rises by over one-third in the period to 2035, underpinned by rising living standards in China, India & the Middle East

A United States oil & gas transformation

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US oil and gas production

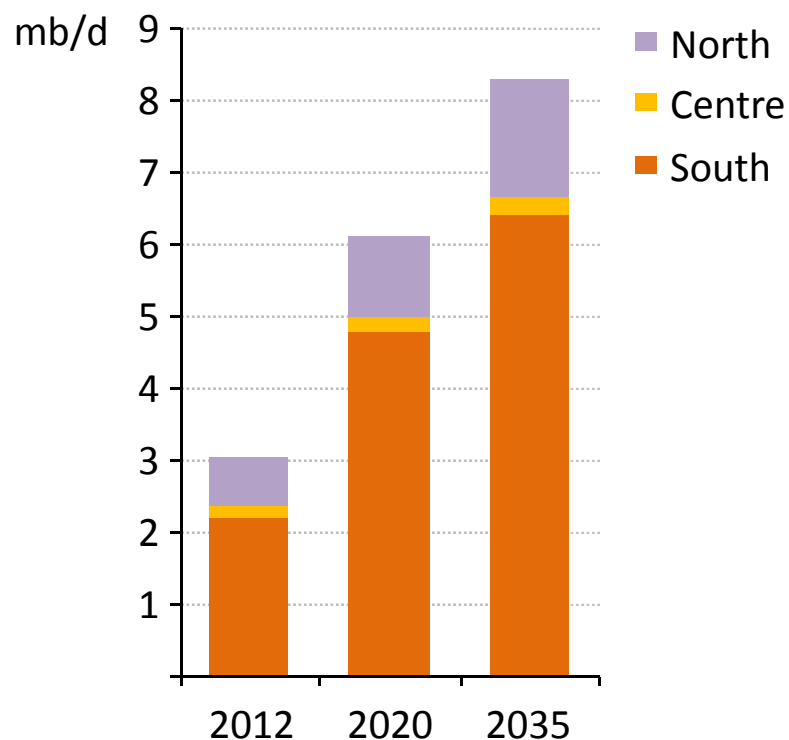


The surge in unconventional oil & gas production has implications well beyond the United States

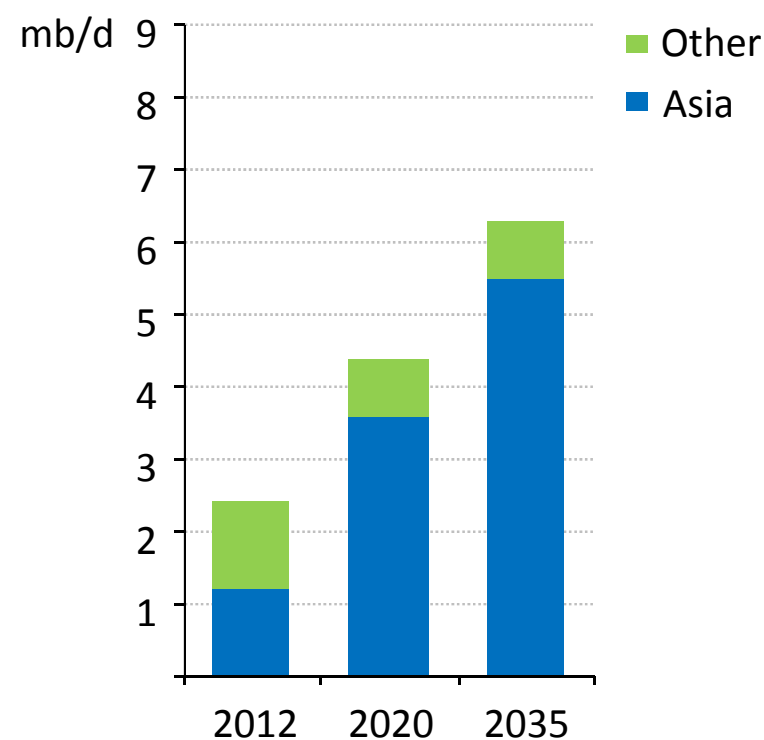
Iraq oil poised for a major expansion

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Iraq oil production



Iraq oil exports

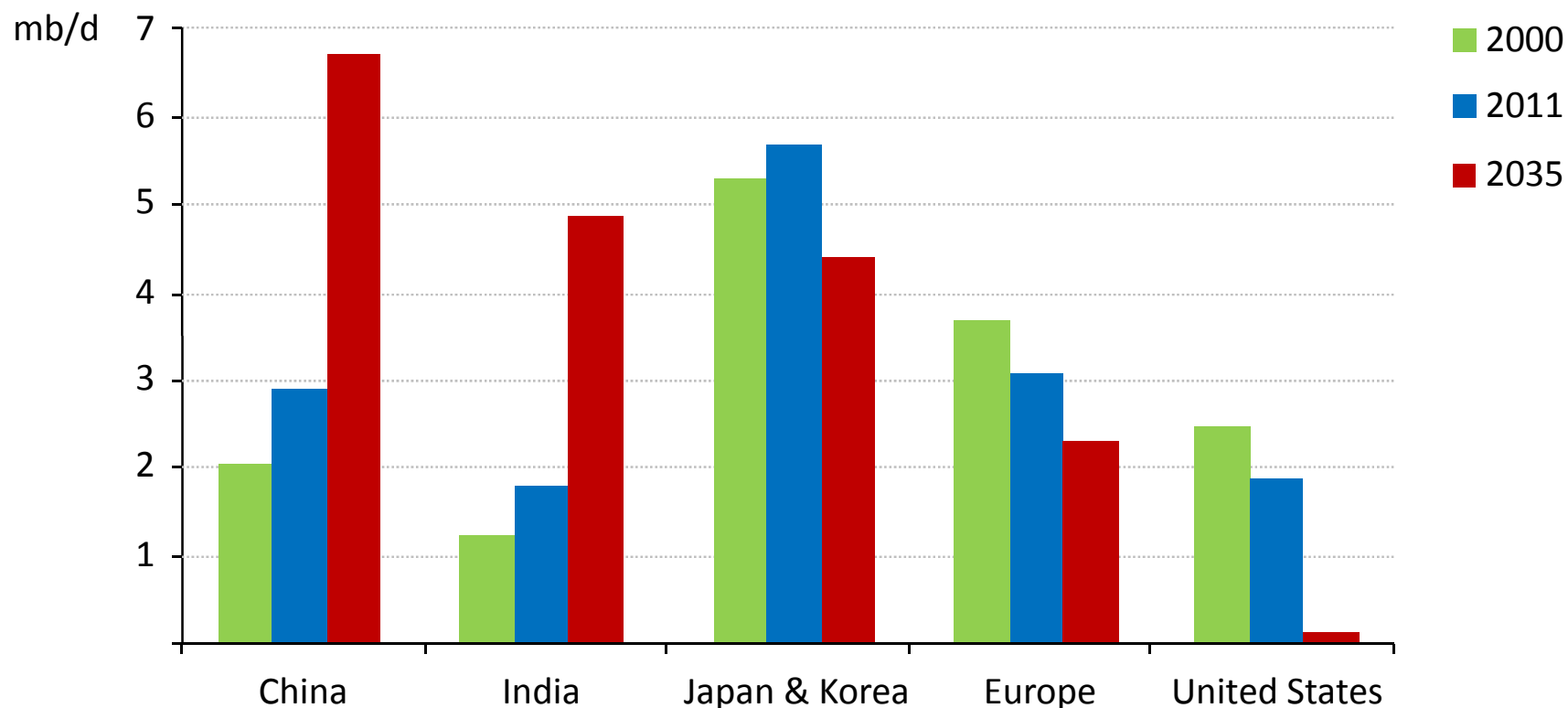


***Iraq accounts for 45% of the growth in global production to 2035;
by the 2030s it becomes the second-largest global oil exporter, overtaking Russia***

Middle East oil to Asia: a new silk road

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Middle East oil export by destination

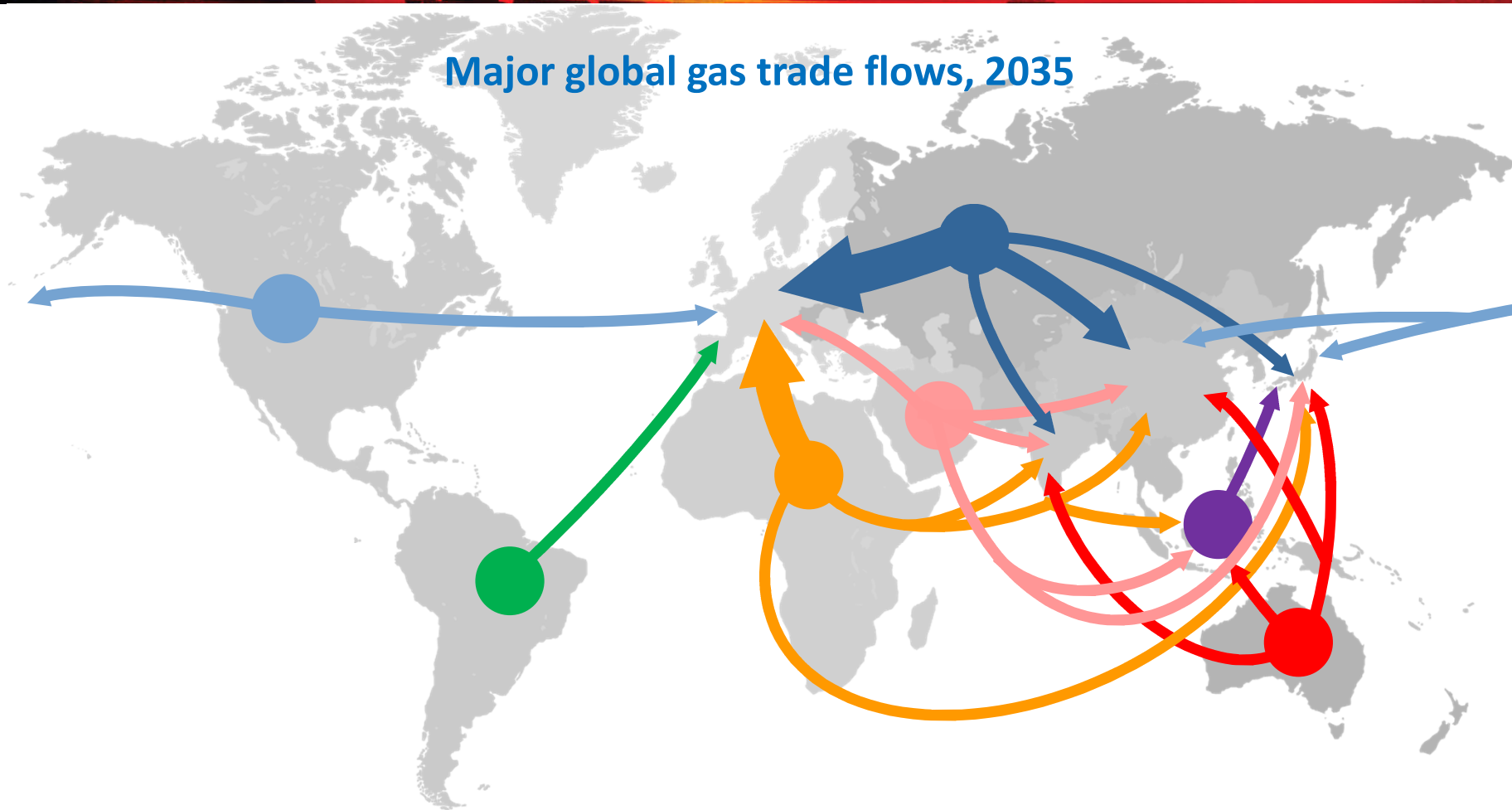


By 2035, almost 90% of Middle Eastern oil exports go to Asia; North America's emergence as a net exporter accelerates the eastward shift in trade

Natural gas: towards a globalised market

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Major global gas trade flows, 2035

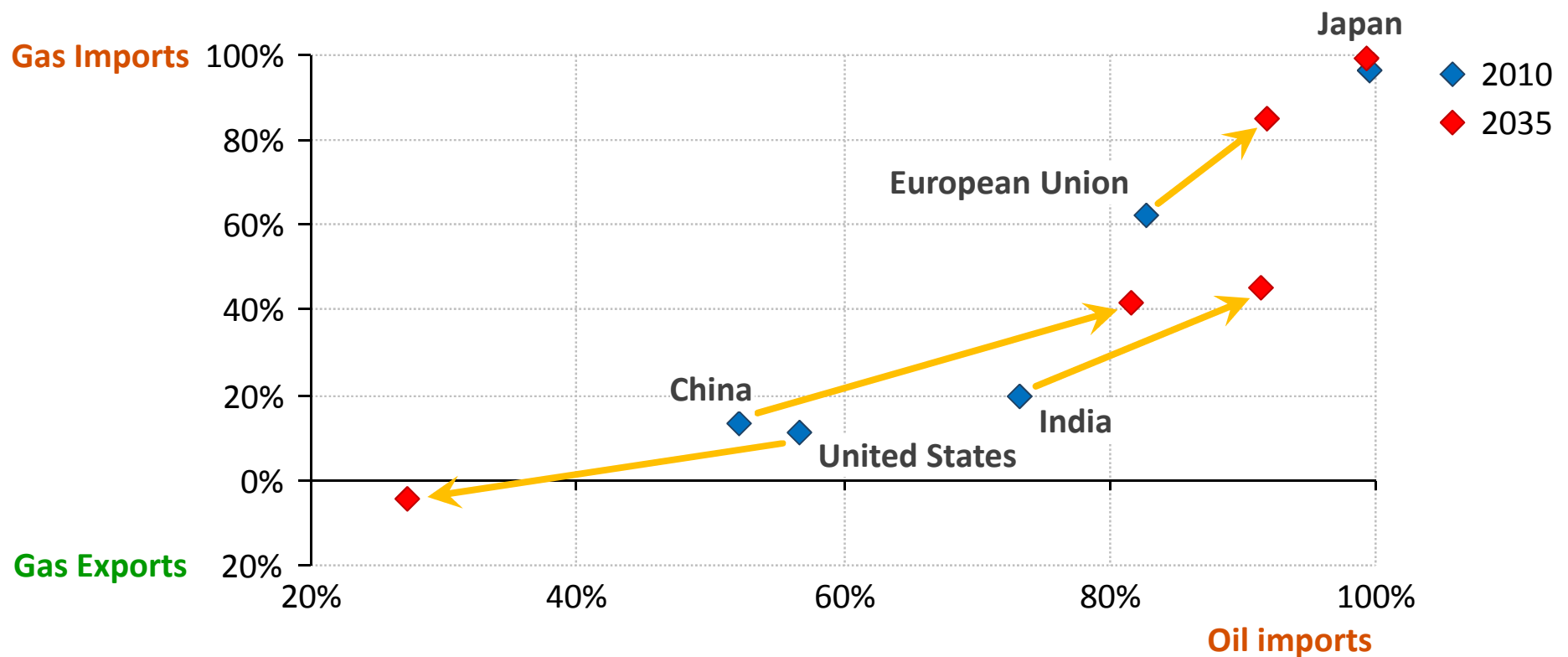


Rising supplies of unconventional gas & LNG help to diversify trade flows, putting pressure on conventional gas suppliers & oil-linked pricing mechanisms

Different trends in oil & gas import dependency

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Net oil & gas import dependency in selected countries

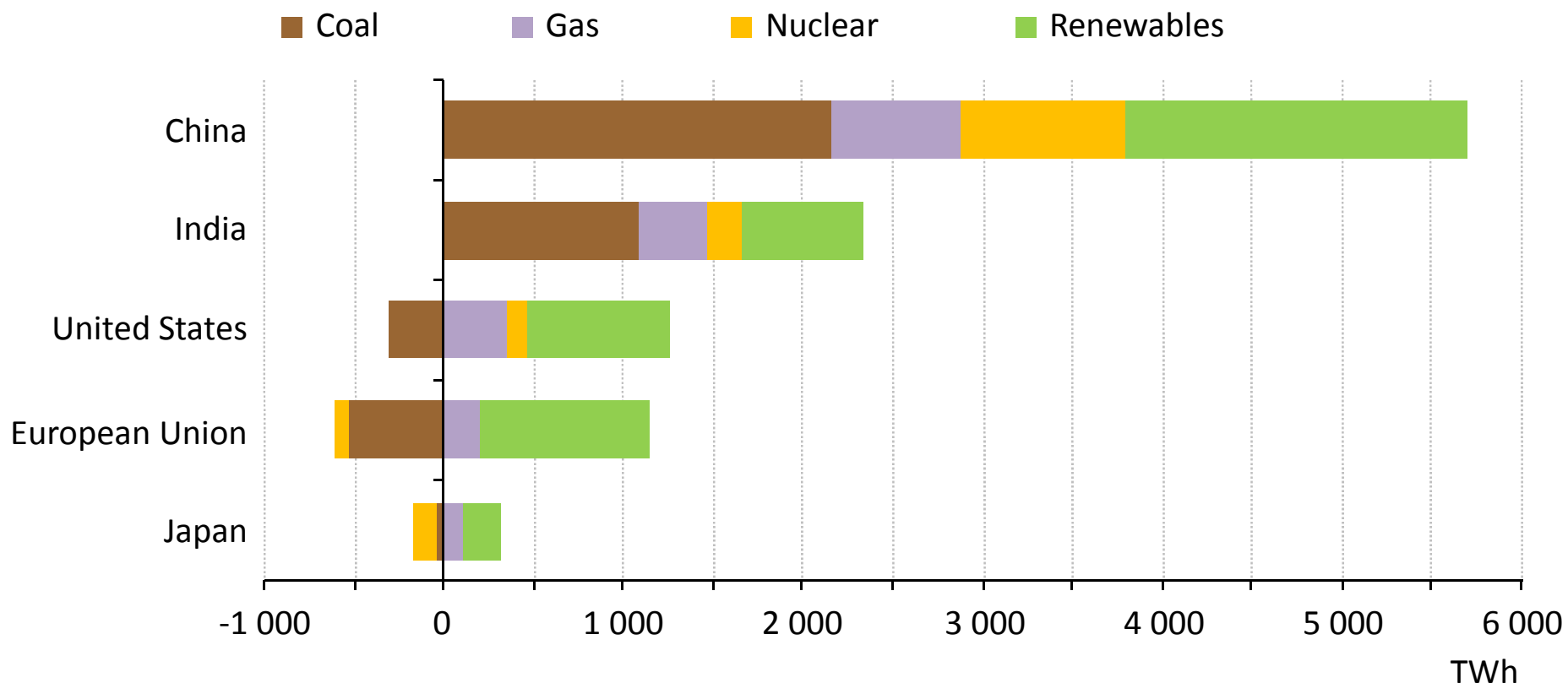


While dependence on imported oil & gas rises in many countries, the United States swims against the tide

A power shift to emerging economies

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Change in power generation, 2010-2035

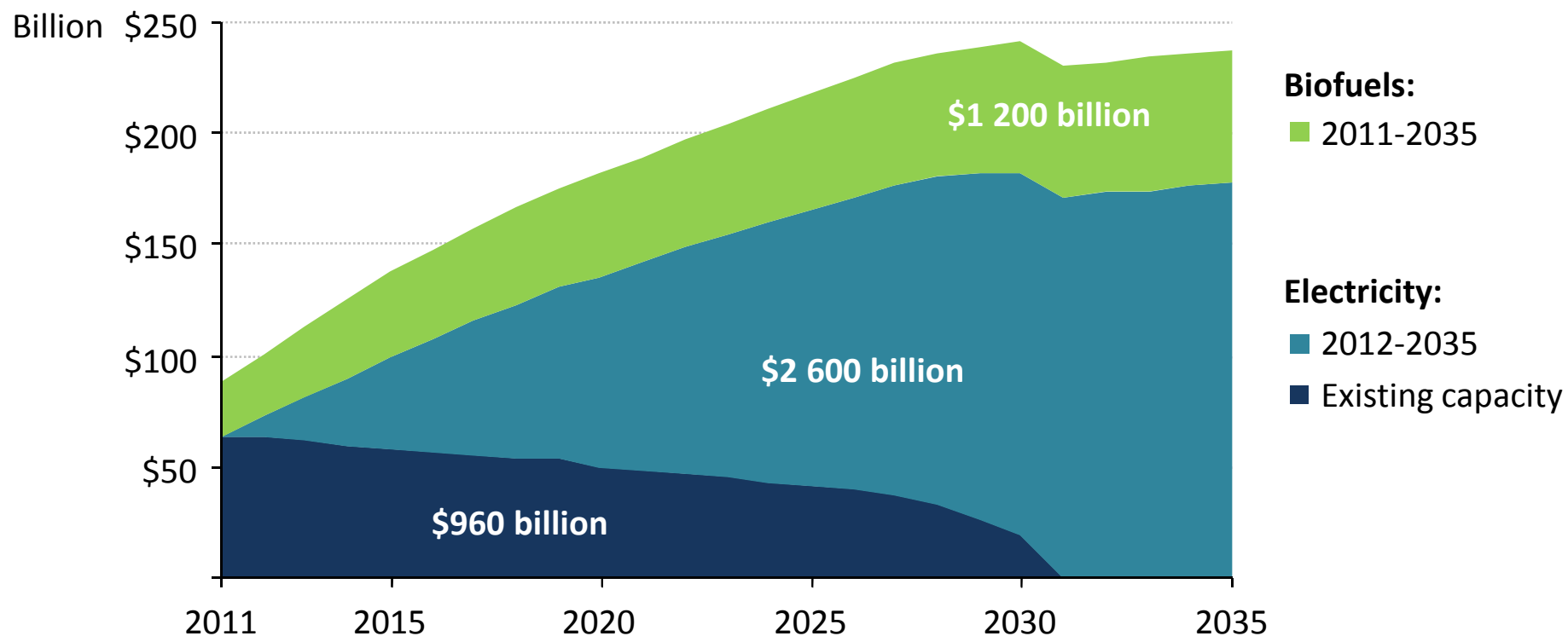


The need for electricity in emerging economies drives a 70% increase in worldwide demand, with renewables accounting for half of new global capacity

The multiple benefits of renewables come at a cost

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Global renewable energy subsidies

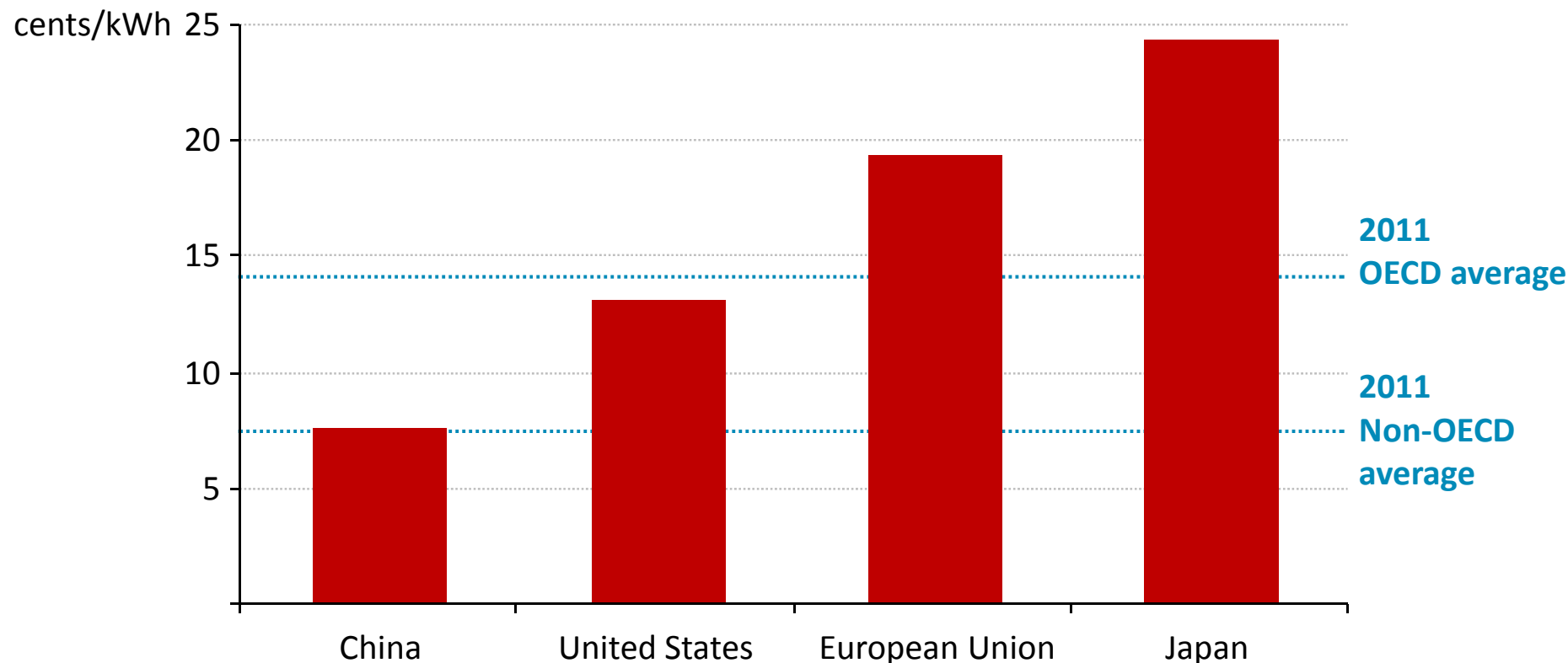


Renewable subsidies were \$88 billion in 2011; over half the \$4.8 trillion required to 2035 has been committed to existing projects or is needed to meet 2020 targets

Wide variations in the price of power

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Average household electricity prices, 2035

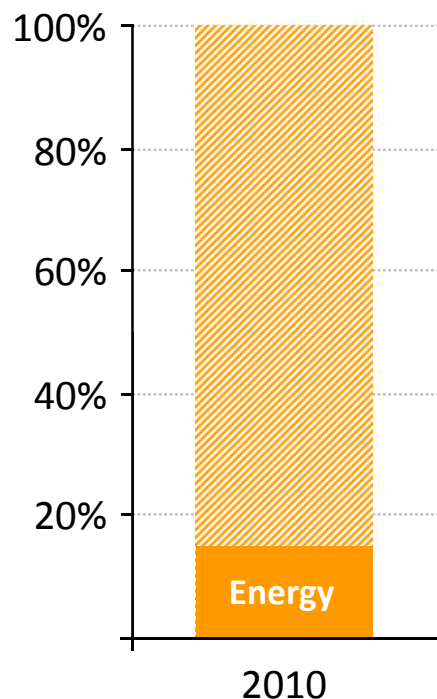


Electricity prices are set to increase with the highest prices persisting in the European Union & Japan, well above those in China & the United States

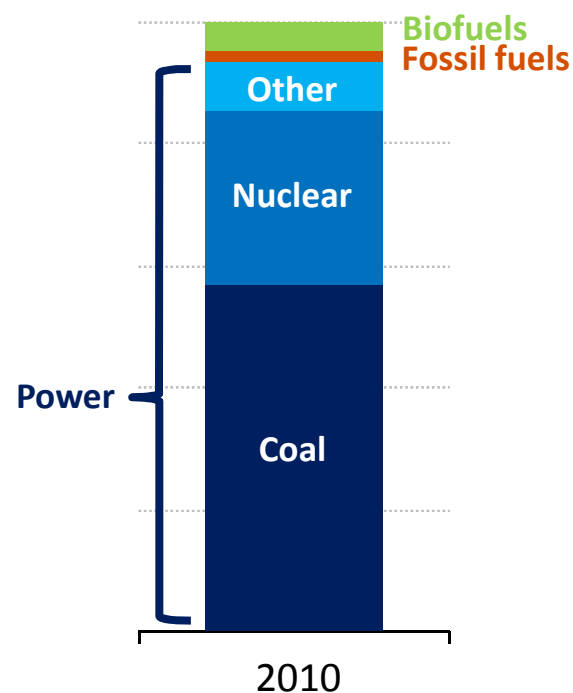
Energy is becoming thirstier in the face of growing water constraints

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Global water use



Water for energy

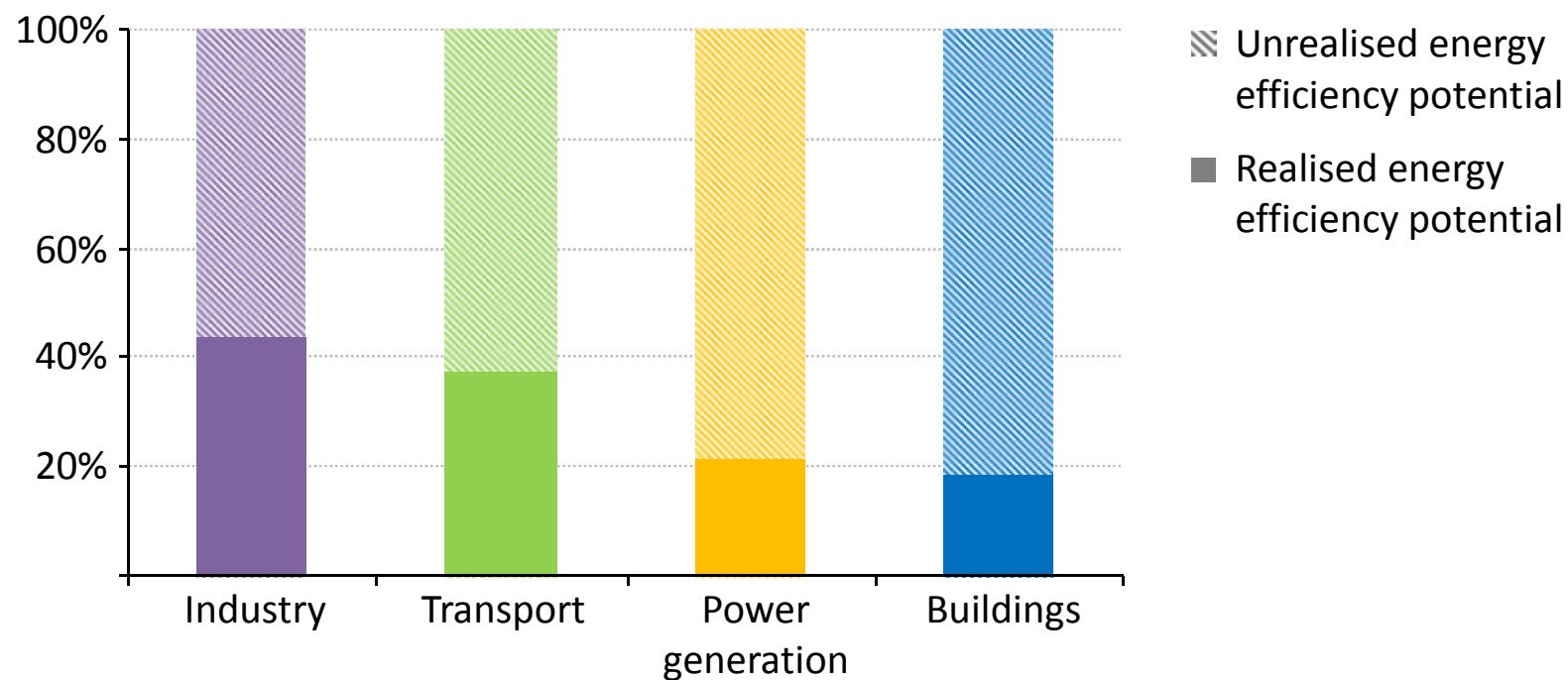


The energy sector's water needs are set to grow, making water an increasingly important criterion for assessing the viability of energy projects

Energy efficiency: a huge opportunity going unrealised

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Energy efficiency potential used by sector in the New Policies Scenario

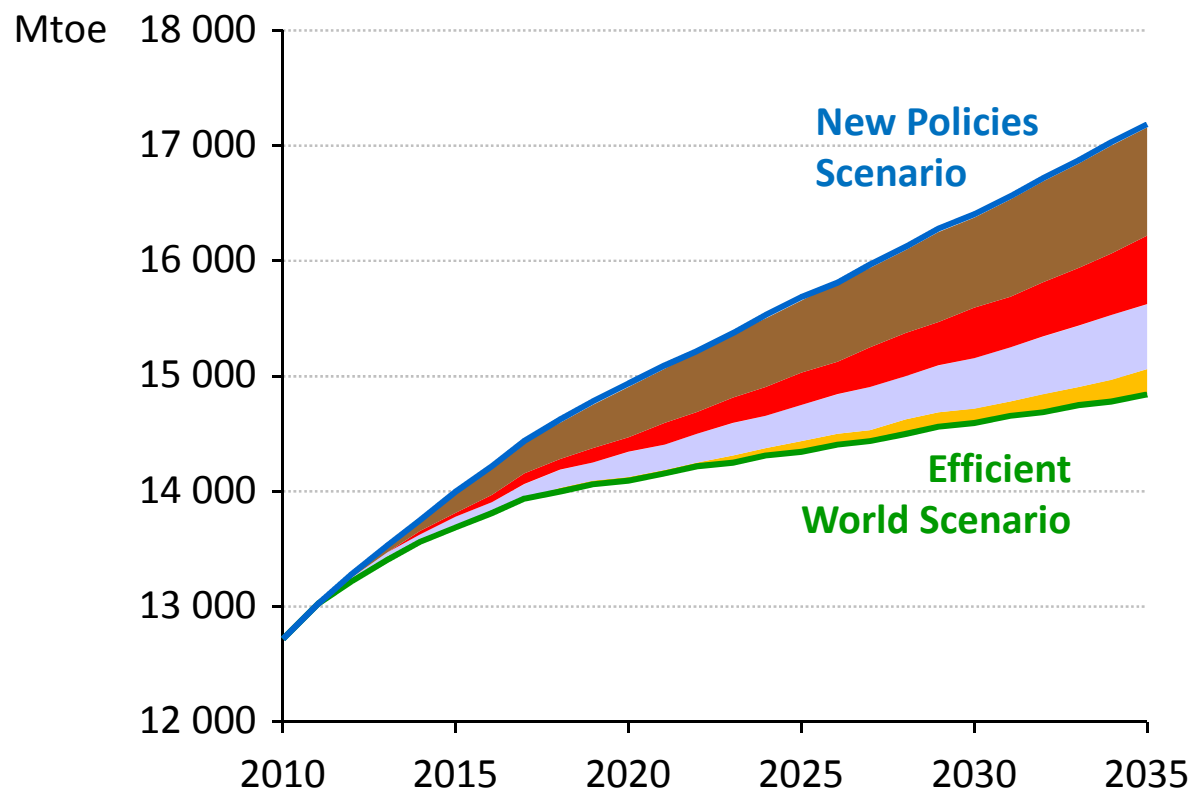


Two-thirds of the economic potential to improve energy efficiency remains untapped in the period to 2035

The Efficient World Scenario: a blueprint for an efficient world

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Total primary energy demand



Reduction in 2035

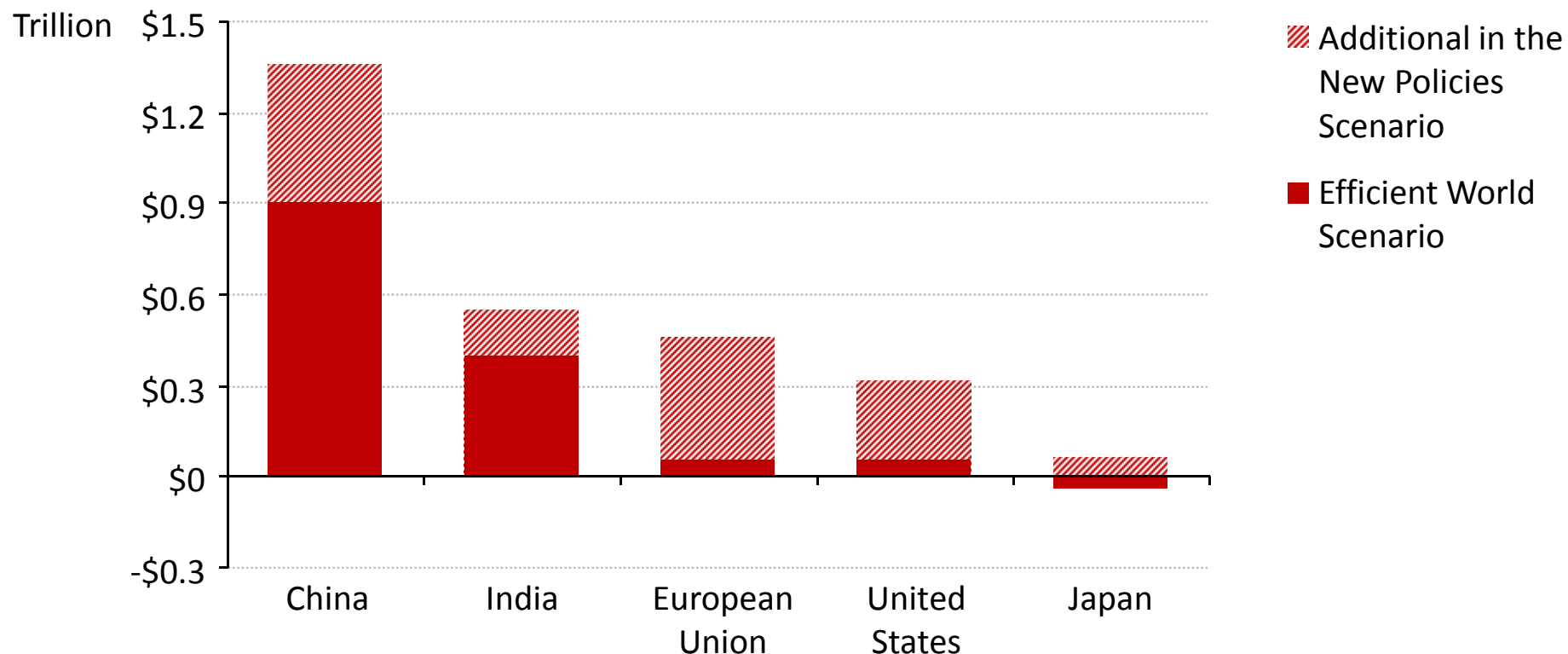
Coal	1 350 Mtce
Oil	12.7 mb/d
Gas	680 bcm
Others	250 Mtoe

***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

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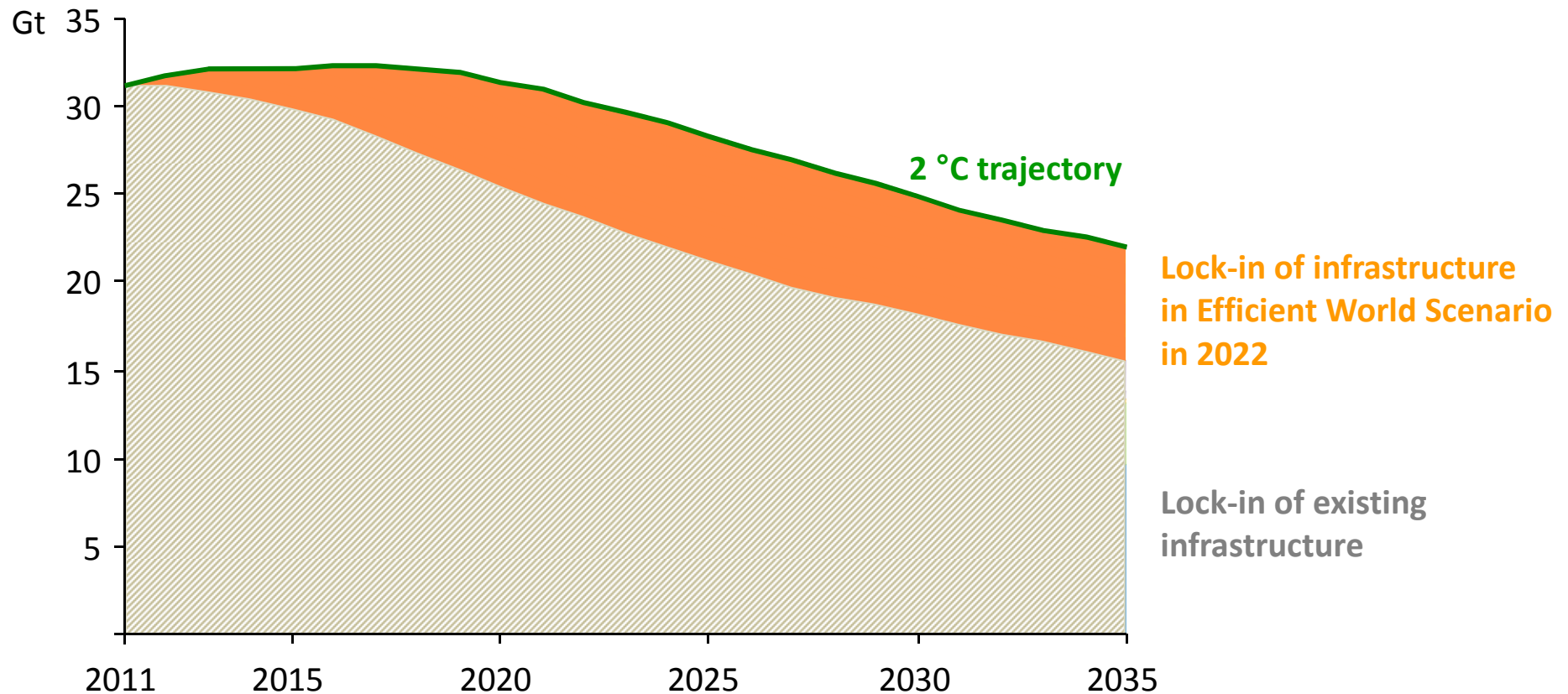
Energy expenditure in 2035 compared with 2010



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

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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

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- 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