

## *World Energy Outlook 2011*

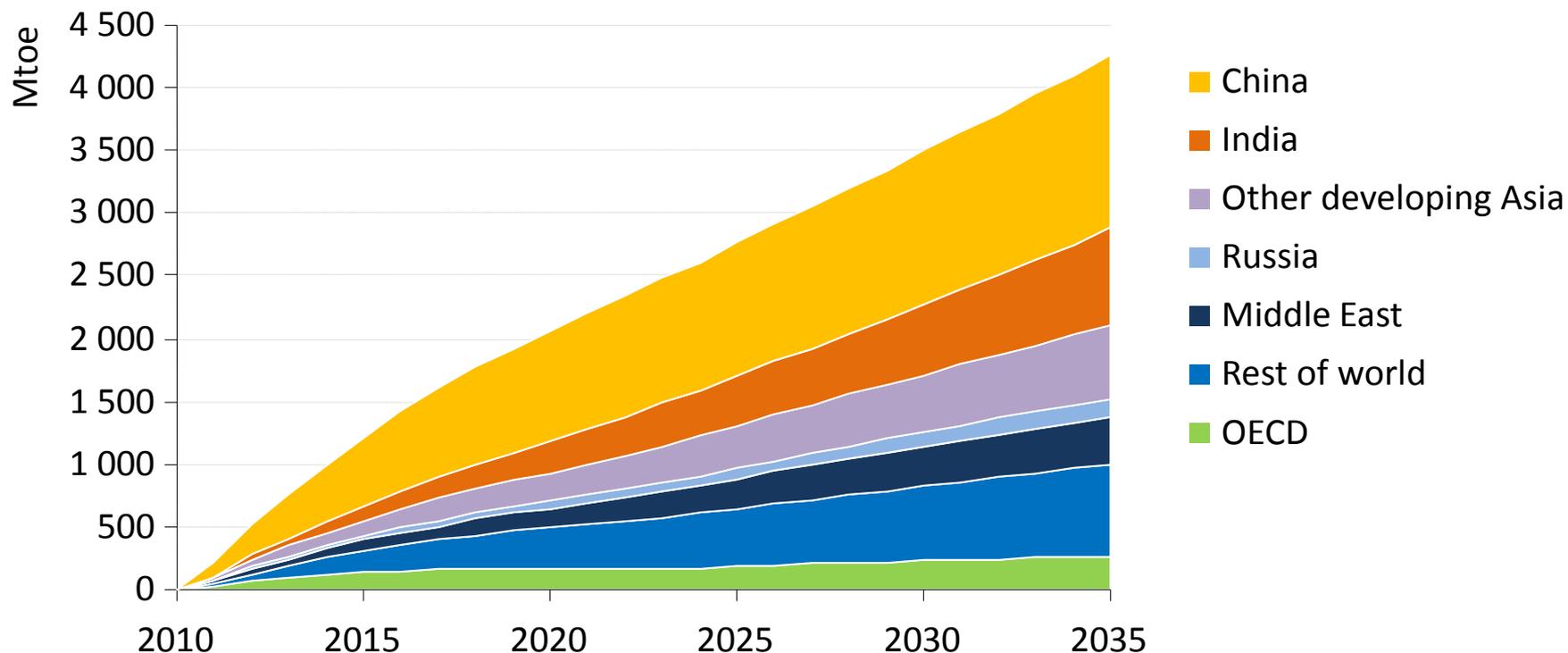
Ambassador Richard Jones  
Briefing for US House staff  
Washington DC, 28 November 2011

# *The context: fresh challenges add to already worrying trends*

- Economic concerns have diverted attention from energy policy and limited the means of intervention
- Post-Fukushima, nuclear is facing uncertainty
- MENA turmoil raised questions about region's investment plans
- Some key trends are pointing in worrying directions:
  - *CO<sub>2</sub> emissions rebounded to a record high*
  - *energy efficiency of global economy worsened for 2<sup>nd</sup> straight year*
  - *spending on oil imports is near record highs*

# Emerging economies continue to drive global energy demand

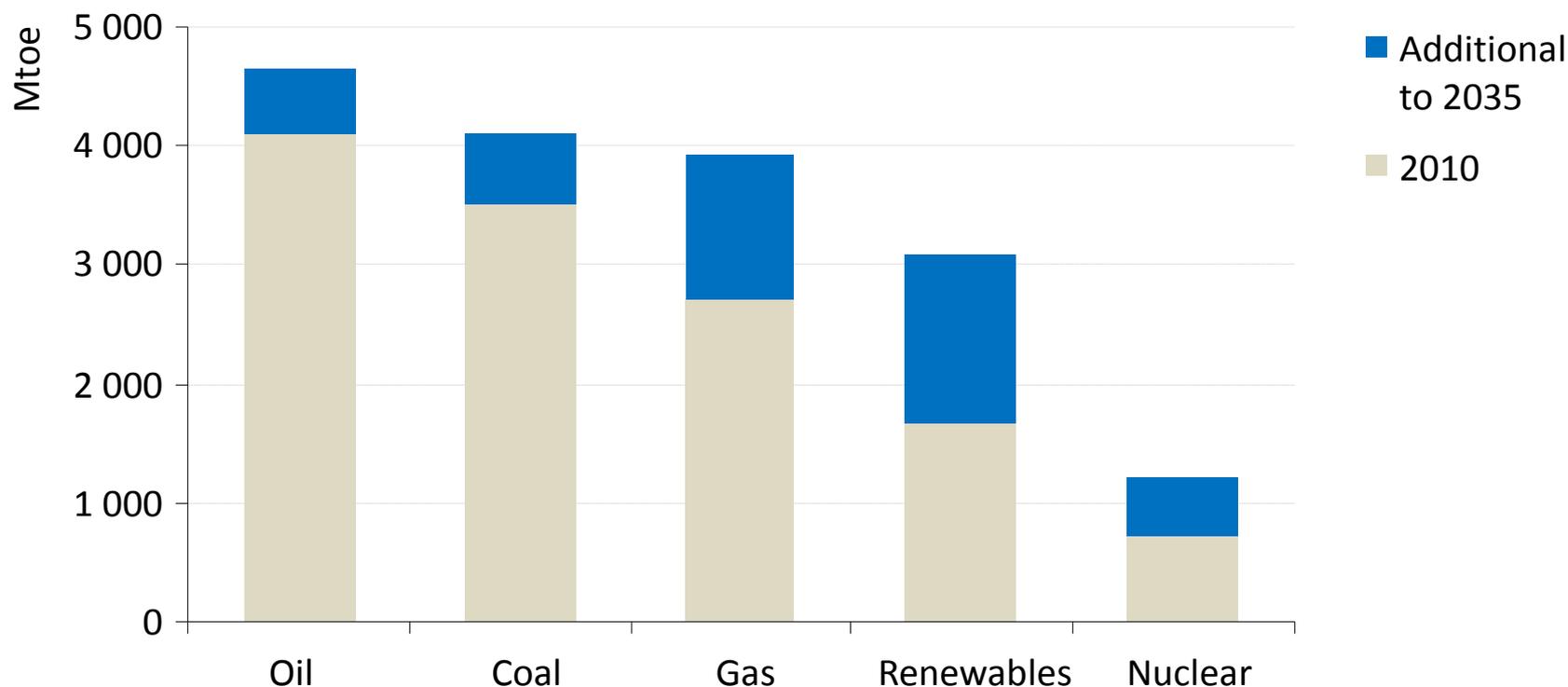
## Growth in primary energy demand in the New Policies Scenario



**Global energy demand increases by one-third from 2010 to 2035, with China & India accounting for 50% of the growth**

# Natural gas & renewables become increasingly important

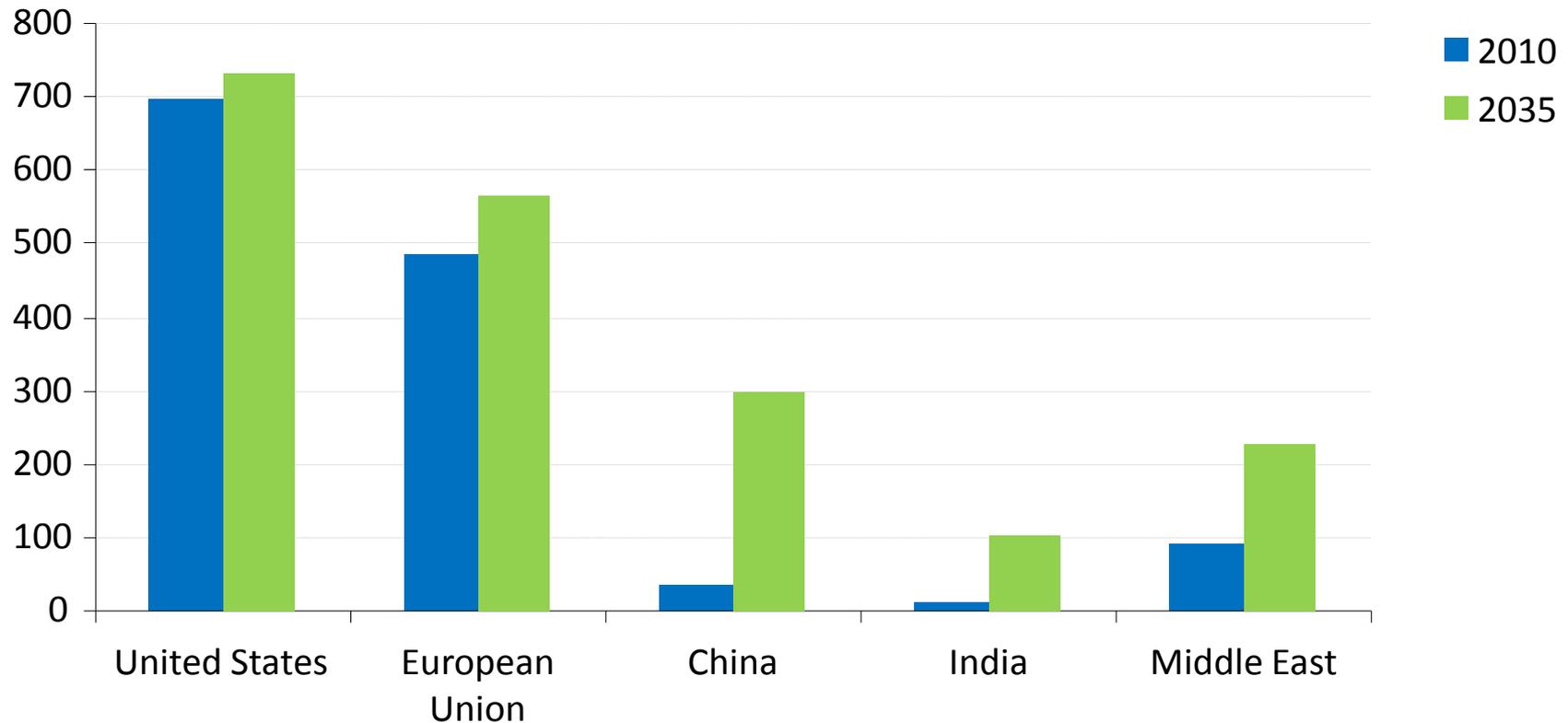
## World primary energy demand



**Renewables & natural gas collectively meet almost two-thirds of incremental energy demand in 2010-2035**

# Oil demand is driven higher by soaring car ownership

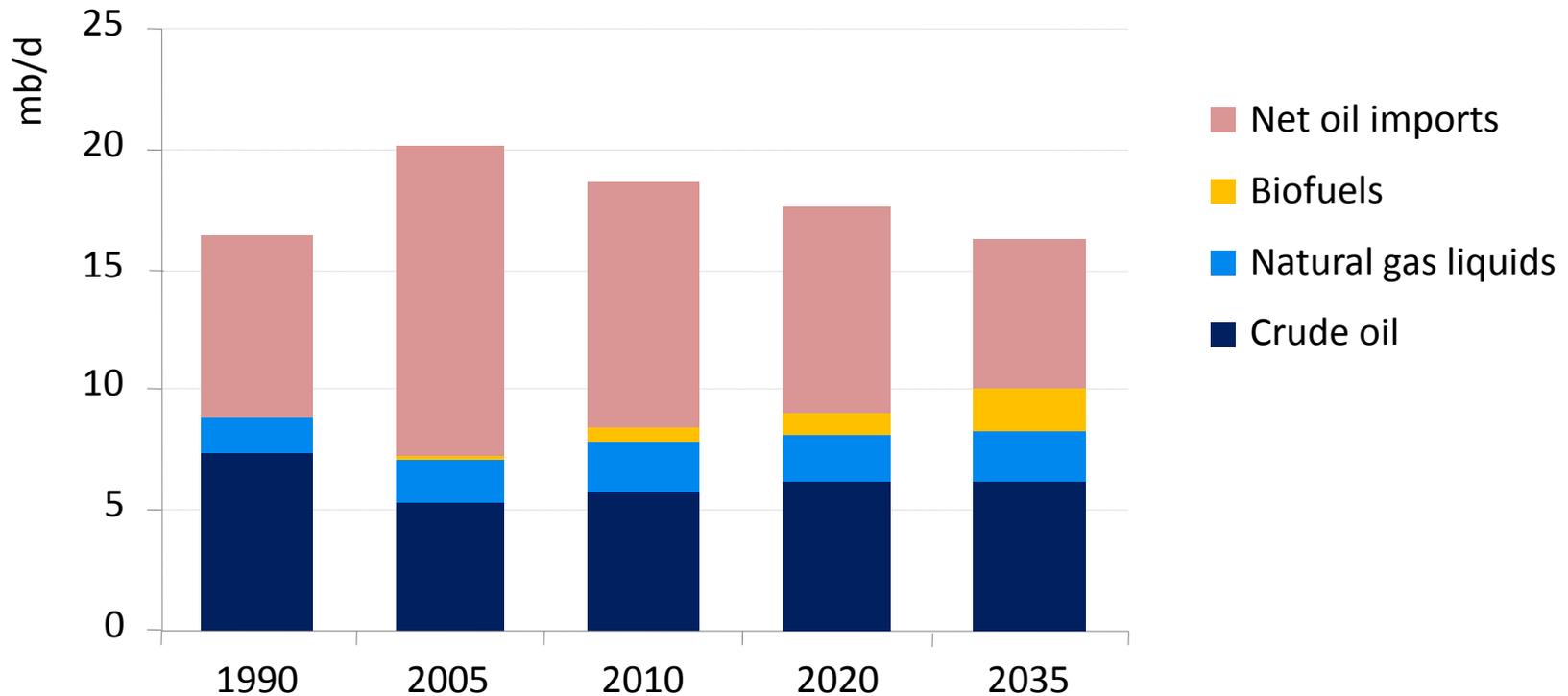
## Vehicles per 1000 people in selected markets



***The passenger vehicle fleet doubles to 1.7 billion in 2035; most cars are sold outside the OECD by 2020, making non-OECD policies key to global oil demand***

# US oil imports decline

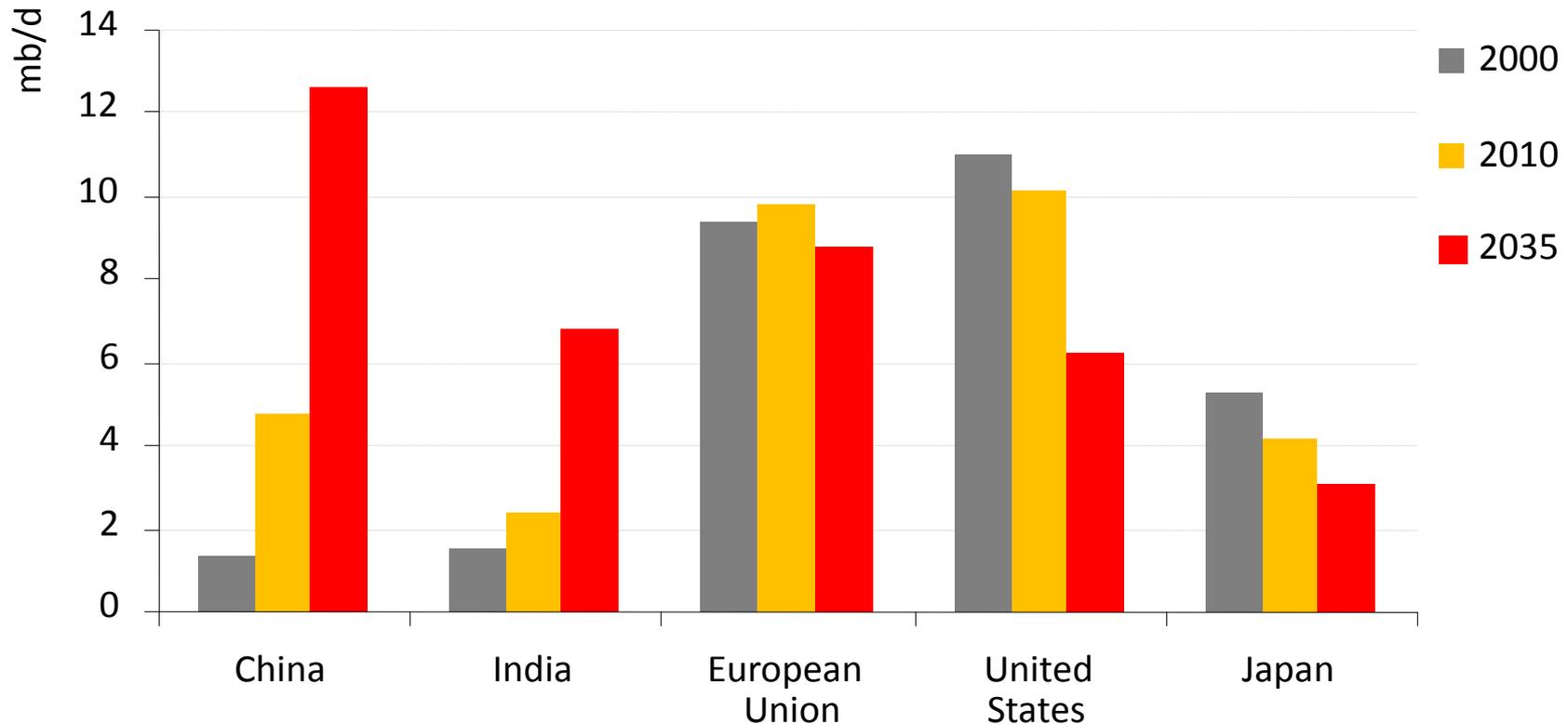
US liquids supply



**More stringent vehicle fuel efficiency standards and expanding domestic production from light tight oil cause US oil imports to fall to about 6 mb/d in 2035**

# Changing oil import needs are set to shift concerns about oil security

Net imports of oil



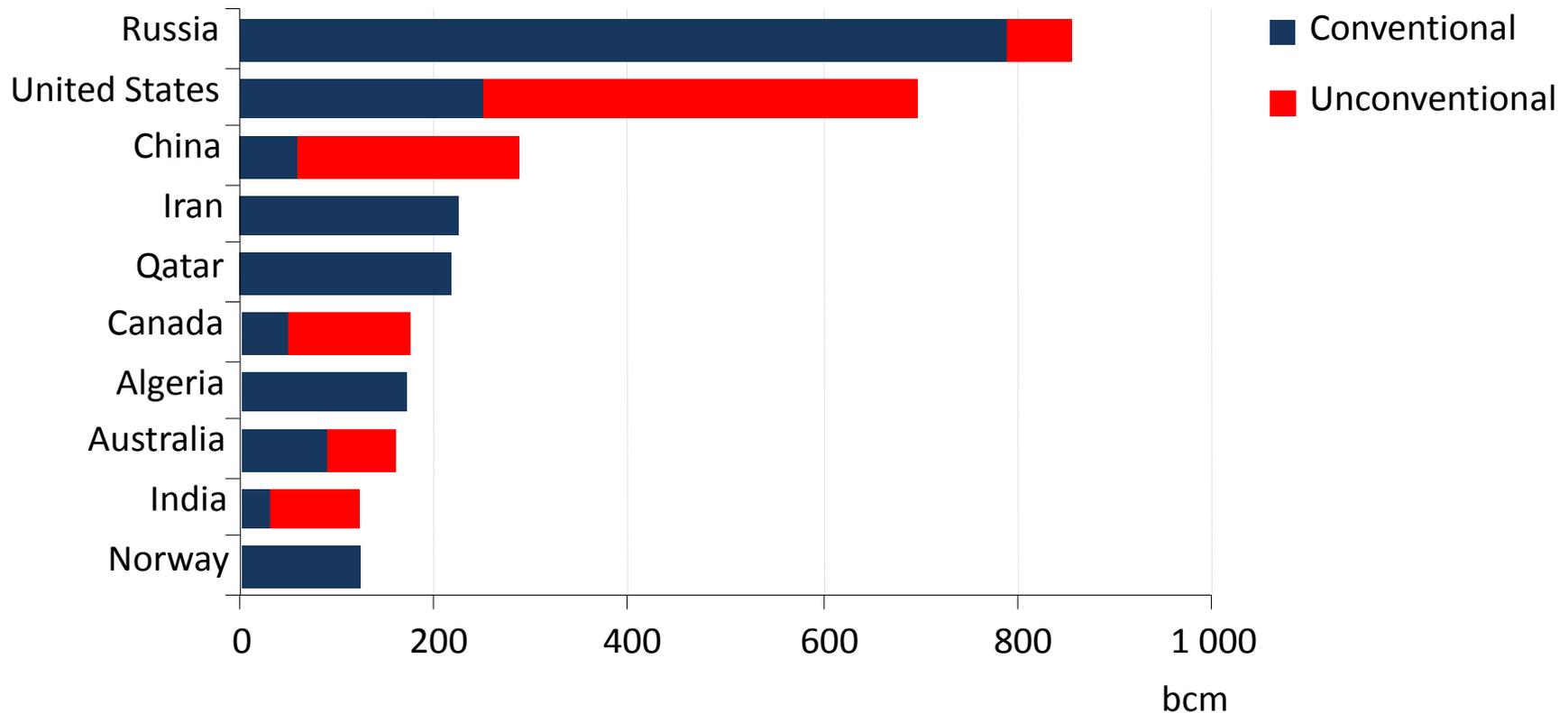
**EU oil imports overtake those of the US around 2015 and China becomes the world's largest oil importer around 2020**

# What impact would deferred investment in MENA have on markets?

- MENA is set to supply the bulk of the growth in oil output to 2035, requiring investment of over \$100 billion/annum
- 'Deferred Investment Case' looks at near-term investment falling short by one-third
  - *possible drivers include new spending priorities, higher perceived risks, etc*
- MENA output falls 3.4 mb/d by 2015 and 6.2 mb/d by 2020
- Consumers face a near-term rise in oil prices to \$150/barrel
- MENA earns more initially, but then less as market share is lost

# Golden prospects for natural gas

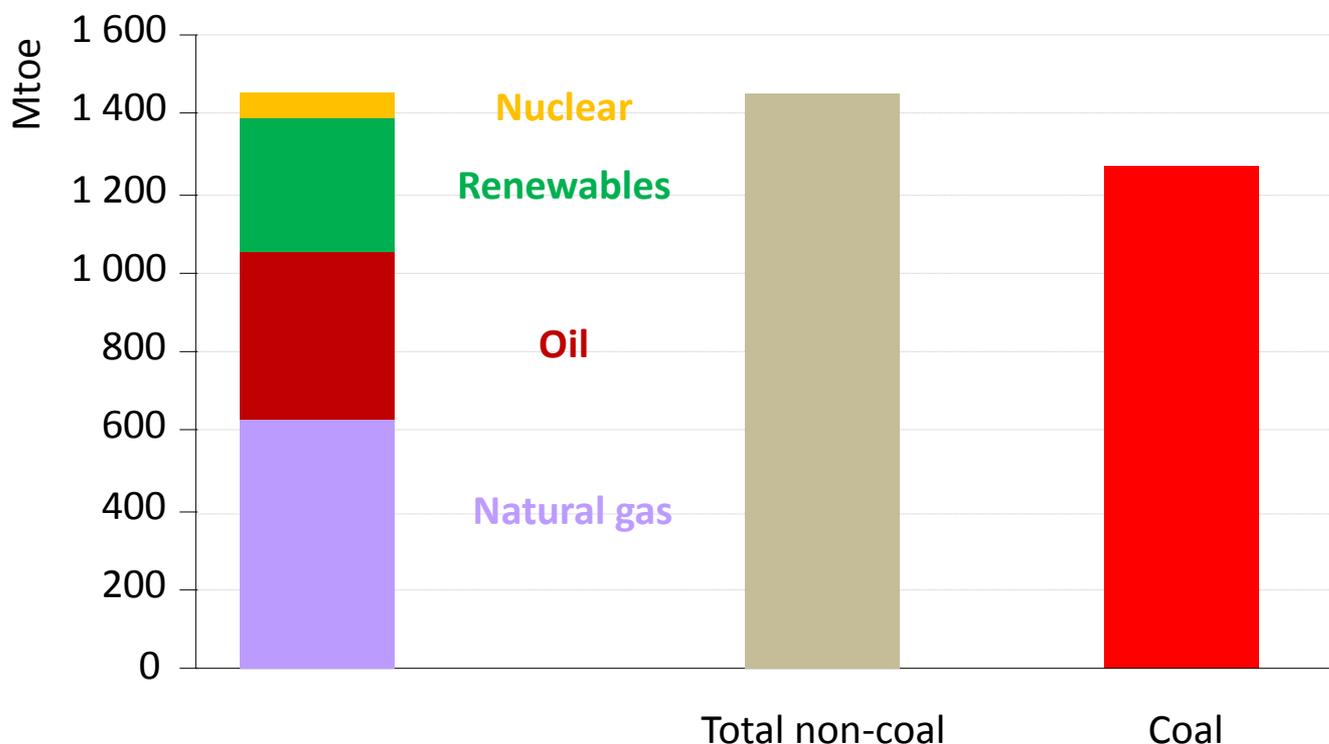
## Largest natural gas producers in 2035



**Unconventional natural gas supplies 40% of the 1.7 tcm increase in global supply, but best practices are essential to successfully address environmental challenges**

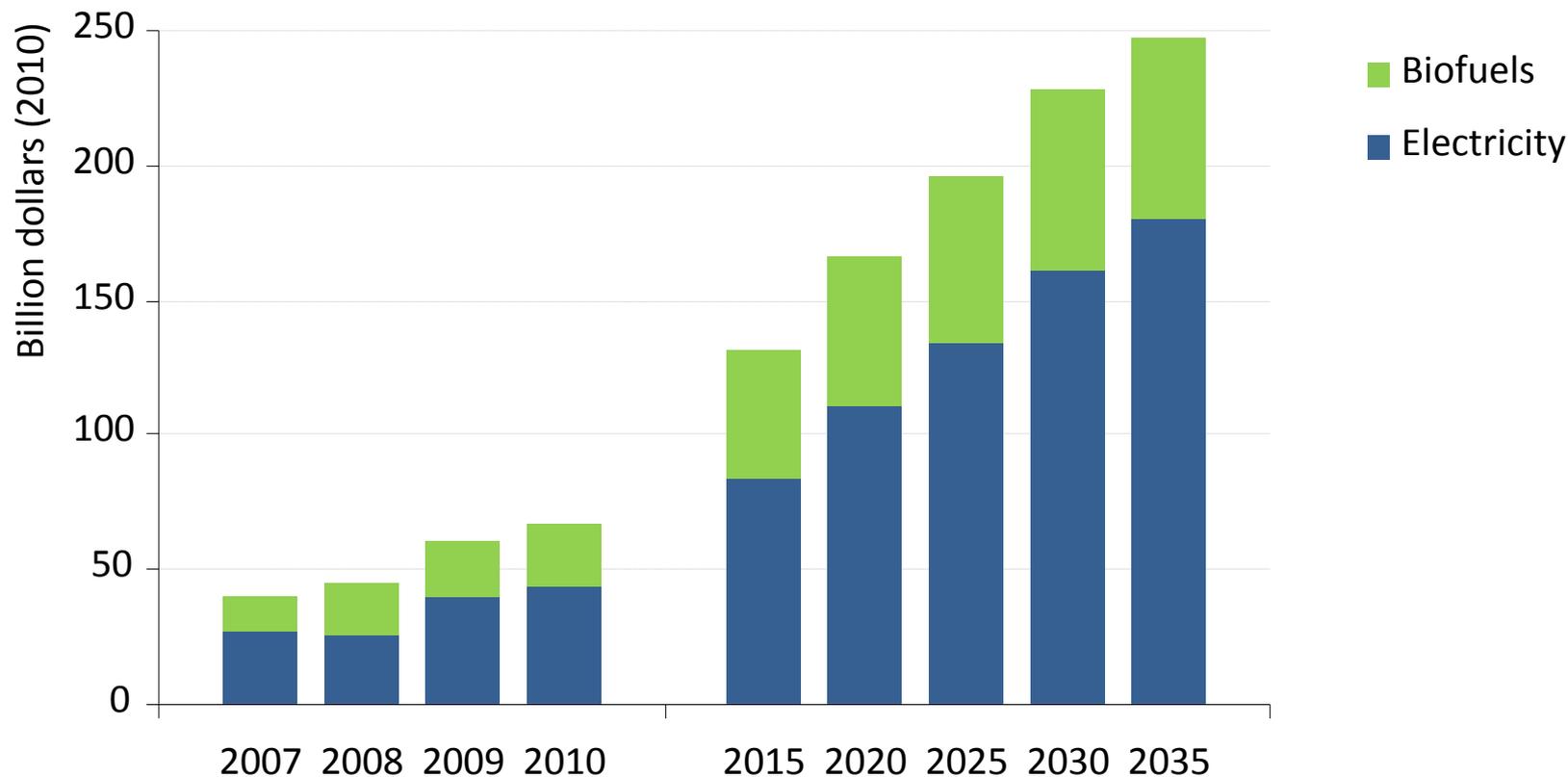
# Coal won the energy race in the first decade of the 21st century

## Growth in global energy demand, 2000-2010



**Coal accounted for nearly half of the increase in global energy use over the past decade, with the bulk of the growth coming from the power sector in emerging economies**

# The overall value of subsidies to renewables is set to rise

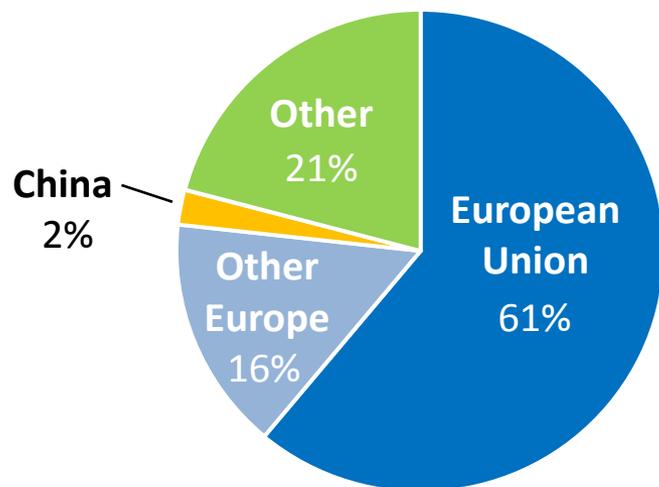


**Renewable subsidies of \$66 billion in 2010 (compared with \$409 billion for fossil fuels), need to climb to \$250 billion in 2035 as rising deployment outweighs improved competitiveness**

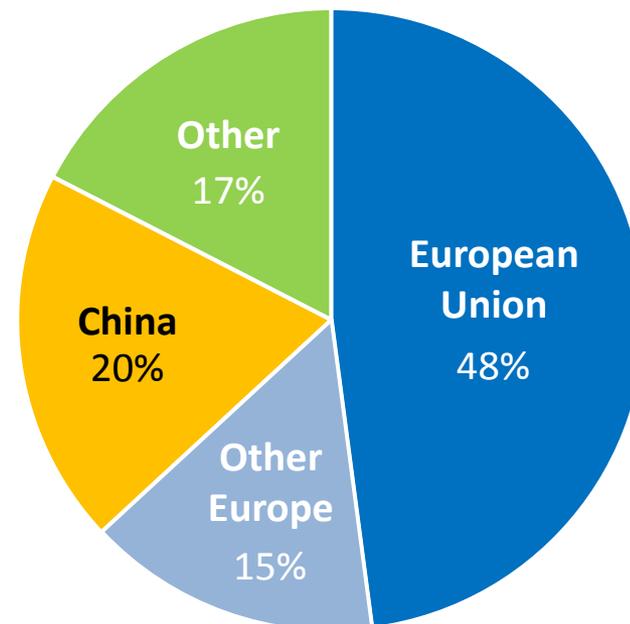
# Russia remains a cornerstone of the global energy economy

## Russian revenue from fossil fuel exports

2010  
\$255 billion

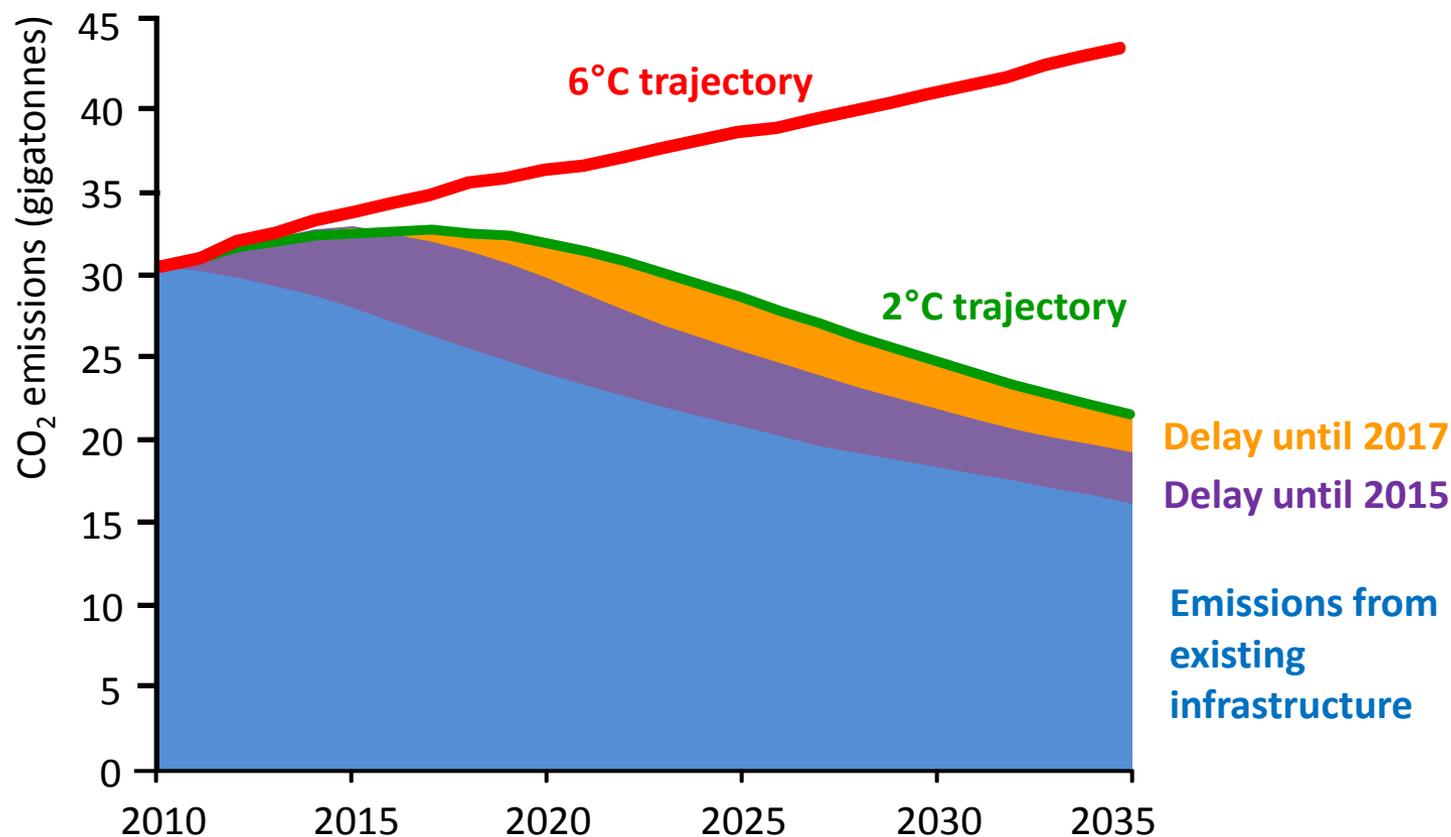


2035  
\$420 billion



*An increasing share of Russian exports go eastwards to Asia, providing Russia with diversity of markets and revenues*

# The door to 2°C is closing, but will we be “locked-in” ?



**Without further action, by 2017 all CO<sub>2</sub> emissions permitted in the 450 Scenario will be “locked-in” by existing power plants, factories, buildings, etc**

*If we don't change direction soon,  
we'll end up where we're heading*

- In a world full of uncertainty, one thing is sure: rising incomes & population will push energy needs higher
- US oil security improves, although world oil supply diversity is diminishing; new options are opening up for natural gas
- Coal – the “forgotten fuel” – has underpinned growth, but its future will be shaped by uptake of efficient power plants & CCS
- The world needs Russian energy, while Russia needs to use less
- Despite steps in the right direction, the door to 2°C is closing